IMPACT EVALUATION OF RASHTRIYA KRISHI VIKAS YOJANA

REPORT - 1

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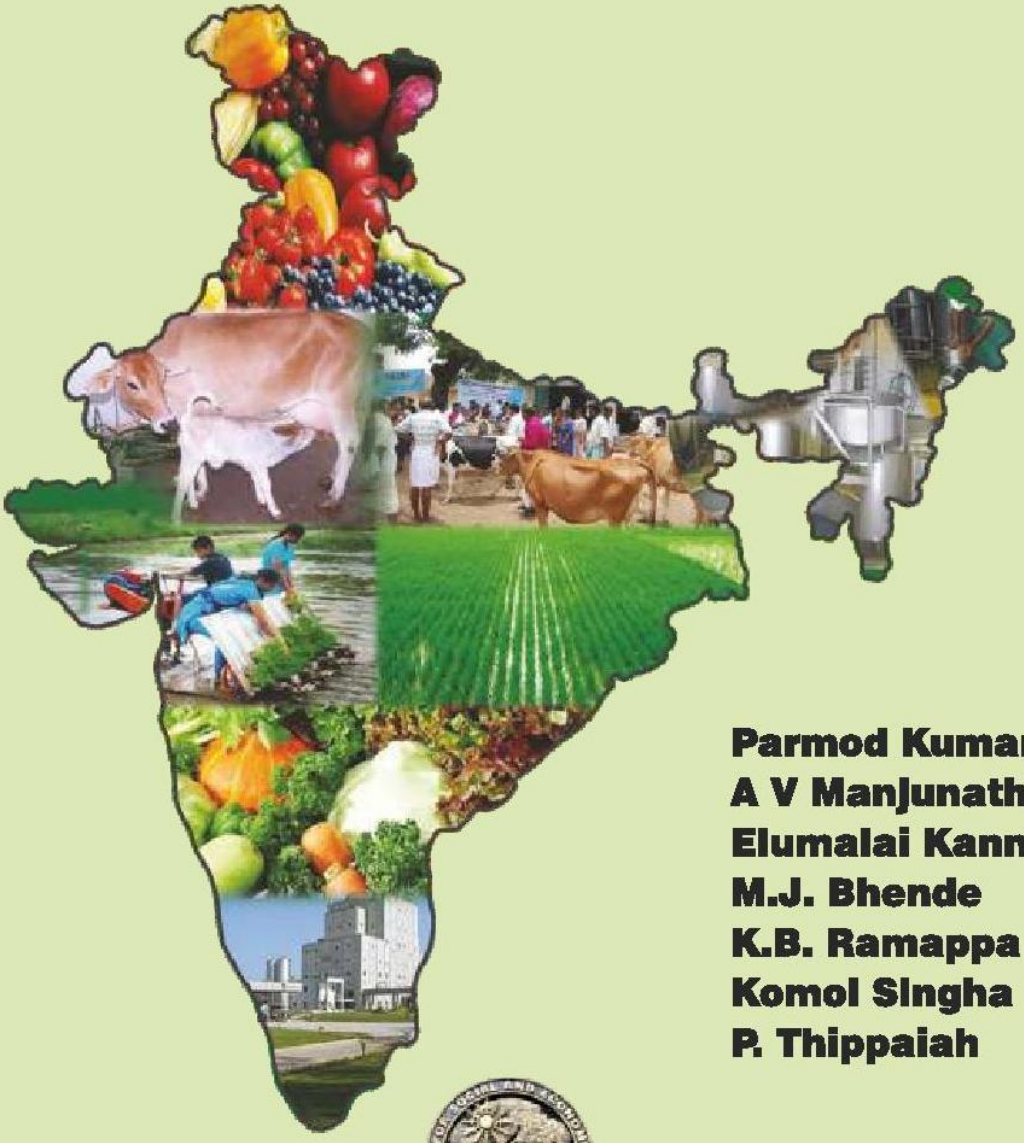

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AGRICULTURAL DEVELOPMENT AND RURAL TRANSFORMATION CENTRE
INSTITUTE FOR SOCIAL AND ECONOMIC CHANGE
Bangalore - 560 072

November 2013

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The ADRTC, ISEC, Bangalore, was assigned the study and we received strong support from the Ministry of Agriculture, Government of India. We sincerely thank the Officials of the Ministry for their support and cooperation, especially Shri E.K. Majhi, Ms. Reena Saha and Ms. Smriti Sharan. We would also like to thank Prof. Binay Kumar Pattnaik, Director, ISEC and Prof. R.S.Deshpande, Former Director and Rajiv Gandhi Fellow ISEC for their support and encouragement. Last but not the least, we greatly thank the support rendered by the research team, viz., Mr. Keshav Murthy, Ms. Jyothi Uppadyay, Mr. Sudarshan Sampath, Mrs. Prema Kumari, Dr. V. Karthick, Ms. Padmavathi,N., Mr. Shivakumar Nayaka, Ms. Sneha Mishra, Dr. B.N. Manjunath, Dr. G.S. Chandrasekar, Dr. V.A. Ramachandra. The secretariat help by Mr. Arun Kumar and Mr. Kumar is thankfully acknowledged.

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Executive Summary

The Food grain production in India which could not meet the demand of 35 to 40 crore population during 1950s gradually attained a level of exceeding the demand of more than 100 crore population by the beginning of 2000s. Implementation of series of agricultural development programmes by government coupled with coordinated efforts of several research organizations, universities, councils and departments in the field of agriculture made this achievement possible. All the agricultural development programmes during the earlier years were confined specially to a single objective. This strategy lacked convergence of various agricultural programmes leading to steady deceleration of agricultural growth. At this juncture, National Development Council (NDC) strongly felt the need to have a scheme that could congregate all the farming activities and revive agricultural growth in the country. The result was launching Rashtriya Krishi Vikas Yojana (RKVY) implemented during 11th Five Year Plan (FYP) by all the states and Union Territories of India. The RKVY is unique for its ability to not only convergence of several sectors of farming activities but also all departments, research institutions. Incentivizing the states and Union Territories for enhancing agricultural expenditure is another exceptionality of RKVY scheme. The programme had a feasible target of achieving 4 per cent annual growths in farm production. The RKVY scheme has completed five years of its tenure. The RKVY project needs to be evaluated for its impact in the country at micro and macro level so that it can be continued during 12th FYP with improvements in the program.

A pragmatic and impartial impact assessment of a project/scheme within RKVY needs to examine three distinct facets of a particular program. These include, (i) Interactions with the personnel involved in implementation of the scheme (at all levels), (ii) The availability of authentic empirical data and (iii) Accurate feedback from the relevant stakeholders. The evaluation team would like to interact with all RKVY officials by means of workshops, meetings and individual discussions for collecting qualitative data. Simultaneously, a survey would be conducted for collecting all relevant data and feedback from RKVY stake holders though a questionnaire specifically designed for each sector. For the moment, the conclusions presented are drawn from the secondary data downloaded from RKVY website and other relevant websites. Policy suggestions/implications are also offered wherever necessary along with conclusions drawn from these secondary sources.

The macro-level impact of RKVY at both the national and state level has been measured using three growth indicators. These indicators are: (i) growth in GDP, overall GSDP and agricultural GSDP (ii) growth in agricultural area and production and (iii) percentage of agriculture expenditure out of states' budget and agriculture GSDP.

- The growth in agricultural GDP of the country was 2.4 per cent per annum in the 10th Plan that increased to 3.7 per cent per annum in the 11th Plan. The increase in agricultural growth rate is especially encouraging as the increase has come after consecutive declines in the previous two FYPs. The overall growth rate of GSDP of 28 states (excluding the UTs) also went-up from 7.61 per cent in 10th FYP to 8.63 per cent in the 11th FYP. Similarly, the overall agriculture GSDP of 28 states grew from 2.38 per cent in 10th FYP to 3.66 per cent in 11th FYP. The increase of overall GSDP and agriculture GSDP of 28 states was noticed in all regions except for West & Central India which in fact observed a declining trend. However, it is interesting to note that even after decline in overall GSDP and agriculture GSDP in West & Central India, the growth rate of this region remained higher than the other regions. The highest agricultural GSDP growth was found in Gujarat with 9.73 per cent per annum during 10th FYP. During the 11th FYP, Chhattisgarh had the highest rate of growth of 7.48 per cent. Both these states belong to West & Central India.

- Despite the lack of significant increase in the gross cropped area or in cropping intensity between the 10th Plan and 11th Plan, the production of food grain attained a new high of 258 million tonnes during 11th FYP. This may be due to an increase in land productivity per hectare; which in value terms increased from Rs 41 thousand in the 10th Plan to approximately Rs 49 thousand in the 11th Plan. Even after accounting for inflation, the productivity gains were significant. The percentage of net irrigated to net sown area, cropping intensity and irrigation intensity all indicated a positive trend from the 10th FYP to 11th FYP. This increase was observed at the all India and at regional level as well. This all indicate that the irrigation projects under RKVY are now yielding result. There was also marginal increase in irrigation intensity from 137.2 during the 10th Plan to 138.8 at the end of 11th Plan. The growth rate in area, yield and production was found to be mixed. There was increased productivity in rice, wheat, pulses and coarse cereals but slight decrease in oilseeds and fibers.

The percentage of expenditure on agriculture (in 28 states budget) accounted for 17.62 per cent at the end of 10th Plan and it increased to 18.44 per cent at the end of the 11th Plan. Thus, there was marginal increase in proportional share of agriculture from states' budget. The expenditure on agriculture as a percentage of agriculture GSDP also increased from 8.80 per cent in 10th Plan to 12.42 in 11th plan. The total agriculture budget of all 28 states' outlay increased by 62 per cent in the 11th Plan over the 10th Plan. However, percentage of agriculture share in the total budget remained constant at 19 per cent during both 10th and 11th FYP. Andhra Pradesh had highest percentage of agriculture expenditure out of its states' budget in both the plans. It was 29.10 per cent in the 10th Plan and 32.31 per cent in the 11th Plan. To summarize, increase in budgetary expenditure in agriculture

sector from 10th FYP to 11th FYP was encouraging. The RKVY scheme has definitely played a role in this growth. But, in the absence of sufficient data, it is difficult to isolate the extent of RKVY's contribution for this growth.

Given the limited information, some conclusions specific to RKVY programme were drawn from the secondary data. They are listed below with policy implications as and where needed:

- The total RKVY budget allocation for the period from 2007-08 to 2011-12 was Rs 37919.62 crores. The expenditure incurred was Rs 23030.48 crores for implementing 7234 projects funded under RKVY. The expenditure allocation ratio was 0.61 which indicates that RKVY had an unutilized amount of Rs. 14889.14 crores by the end of 11th FYP. The highest expenditure allocation of 0.72 was in South India and the lowest of 0.57 was noticed in East and North East India. Highest expenditure to allocation ratio was recorded by Mizoram state, with a ratio of 0.95, which interestingly belongs to the region which had the lowest expenditure allocation ratio. Conversely, the state with the lowest expenditure allocation ratio of 0.05 (Goa) belonged to the region which had the highest expenditure allocation ratio. Based on the expenditure allocation ratio, it may be concluded that there was not enough oversight when planning the budgetary allocations. *Therefore, it is suggested that nodal offices ought to be more cautious while allocating budget and should constantly monitor the projects. It would be more beneficial if a separate monitoring cell at each region, i.e., North, South, East (including North-east), West and Central is set-up.*

- It should be mentioned that though RKVY was scheduled to have started in the year 2007-08, it really began two years after its inception. This delay was even more pronounced in the North and North Western India. As a result, many of the initiated projects were not completed. This conclusion is based on the fact that more than 55 per cent of the projects were initiated during last two to three years of RKVY period. It is possible that there were several administrative and technical reasons for this delay. The exact reasons for these delays would have to be ascertained during interaction with implementing officials.

- Out of the 609 districts belonging to 28 states, 599 districts had submitted District Agricultural Plans (DAP). The remaining 10 DAPs are yet to be submitted. These remaining districts are located in Chhattisgarh (5 districts), Karnataka (2 districts) and one each in Kerala, Mizoram and West Bengal.

Goa has neither submitted DAPs for any of its two districts nor or the State Agricultural Report (SAP). Kerala and Madhya Pradesh are the two other states which have not submitted their SAPs either. It is likely that initially many states had taken up projects under RKVY scheme without DAP and SAP submission. This essentially means that the nodal offices could not properly assess the budgetary requirement for RKVY projects. This has resulted in inappropriate allocation of budget to states under RKVY programme. The West & Central India is the best example for this. *Therefore, it is suggested that RKVY is required to insist on submission of DAPs and SAPs for allocation of RKVY funds to states.*

- Another major observation is that 80 per cent of the total expenditure is concentrated in only 8, out of 20 sectors recognized for RKVY implementation. These 8 sectors were: Crop development (13.90 percent), Micro / Minor irrigation (12.44 per cent), Horticulture (9.82 per cent), Animal husbandry (9.80 per cent), Agriculture mechanization (9.70 per cent), Seed (8.16 per cent), Innovative programme (5.37 per cent), Natural Resource Management (5.09 per cent) and the remaining 20 per cent expenditure was accounted for by the other 12 sectors. By and large, this trend was similar across all the states. As such, a major conclusion is that RKVY was confined mainly to 8 sectors. *Therefore, it is suggested that department of agriculture, horticulture, etc must take initiative in assessing the requirements for the state.*

- The overall performance of RKVY at all-India level, as measured in terms of expenditure to allocation ratio, was not very encouraging. This is evident from the fact that all-India expenditure allocation ratio under RKVY during the entire 11th FYP remained at 0.61. Integrated Pest Management had lowest expenditure allocation ratio (0.32) and crop development had highest (0.75). Sectors like horticulture and dairy development which have direct impact in augmenting the agricultural economy had a low expenditure allocation ratio at the all-India level. These ratios were 0.46 and 0.48, respectively. However, few sectors like micro and minor irrigation projects, innovative and capacity building programmes and agricultural mechanization had shown higher ratios beyond national average. The inequality in expenditure was also observed across the sectors. Eight sectors accounted for 75 per cent of the Rs 23030.47 crores expenditure incurred from the total allocated fund of Rs 37919.65 crores. These 8 sectors did not include dairy development and fisheries which are important allied activities. It is a matter of concern that sectors like natural resource management did not have as much priority as they perhaps required.

Across regions, the expenditure allocation ratio was highest in the south (0.72) and lowest in the north and north western region (0.54) indicating that the south region utilized RKVY funds more efficiently compared to other regions.

- The impact assessment would be more appropriate if more of the allocated projects were completed. However, there has been an indefinite delay in completion of projects. Less than 50 per cent of projects that were scheduled for implementation were completed. Besides long duration projects, many projects scheduled for one year remained incomplete at the end of the initial RKVY period. It seems that the implementers were inclined towards completing larger scale projects of more than Rs 10 crores while keeping the smaller projects of Rs one crore or less just pending.

- About 4 per cent of the projects were abandoned and another 2 per cent were not implemented. It was also observed that abandoned and not implemented projects had an expenditure of about Rs 30 crore. The highest proportion of abandoned and not implemented projects were observed in North and North western region (9 per cent), while lowest proportion was in South India region (2.5 per cent). The issue of abandoned projects needs to be taken up seriously, especially when projects are abandoned after incurring some expenditure. Discussion will be held with implementing agencies to ascertain reasons for abandoning projects. Based on discussions and survey results suitable suggestions would be offered in order to reduce the chances of projects getting abandoned.

- It is interesting to note that only 5 per cent of the expenditure was incurred by nearly 62 per cent of the total number of implemented projects. All these projects were of less than Rs. 1 crore expenditure. At the higher extreme, 2 per cent of the total implemented projects had an expenditure of more than 41 per cent of the total expenditure under RKVY scheme. All these projects were in the group of projects having more than Rs. 25 crores expenditure per project. Thereby it looks that the RKVY implementing agencies were generally more inclined towards large scale projects. Suggestions concerning the disparity between low and high expenditure projects will be offered after discussions with implementing agencies.

- The RKVY had implemented 1584 infrastructure projects all over the country. These projects absorbed Rs 6975 crore of expenditure which accounted for 29.20 per cent of the total expenditure under RKVY

programme. Infrastructure projects were implemented in all the 20 sectors. Micro and minor irrigation had the highest expenditure of nearly 32 per cent of the total expenditure under infrastructure projects. Animal husbandry (8.46 per cent), natural resource management (8.46 per cent) and marketing and post harvest management (8.24 per cent) were other major sectors also implementing infrastructure projects. The animal husbandry (14.33 per cent), fisheries (10.93 per cent) and research (11.62) sectors had the highest total number of infrastructure projects. South India had the highest number of 733 (46.28 per cent) infrastructure projects and lowest number of infrastructure projects was in the North and North West India. One important observation with respect to infrastructure projects is that all the regions had shown high expenditure allocation ratio of up to 0.85 and all-India had 0.70 ratios under infrastructure projects.

- The RKVY scheme had implemented 566 Flagship projects. Out of these 566 projects, 84 were National Flagship projects and 482 were State Flagship projects. The State Flagship projects were taken up by 26 states and only 11 states had National Flagship projects. The National Flagship projects had an expenditure of Rs 1529.25 crore which is 6.64 per cent of total RKVY expenditure. The expenditure on State Flagship projects was Rs 2536.07 crore constituting 11.01 per cent of RKVY expenditure. It was observed that 74 percent of fund allocated for National Flagship was utilized. The State Flagship projects utilized 80 per cent of the allocated fund. Thus, expenditure allocation ratio of Flagship projects was good. Out of total Flagship expenditure, West and Central India (45.29 per cent) and south (42.83 per cent) had shown higher expenditure and their expenditure allocation ratio was also higher as compared to other regions. However, there were instances of 'not implemented' Flagship projects.

The evaluation team had difficulty in gathering secondary data from RKVY website and noticed discrepancies in the data. In view of this problem, certain observations and difficulties faced with respect to collection of data are now discussed.

- There are errors in the data. The units of measurement pertaining to quantitative data were not clear. Therefore, it is suggested that it would be more appropriate if the data entry is done under the supervision of implementing agents by trained data entry operators. Nodal departments must take initiative in training.

- With regard to data structuring, the projects do not have unique identity. It is essential to structure the database to have individual fields for identification code, year of start, date of starting project, date of completion, implementing agency, sector, allocated budget, and released budget, expenditure as on date etc. It is necessary to adopt a process of having project identification code given at the time of project initiation instead of changing the code every year. This will help in understanding the original numbers of projects and their progress over time and measurement of it actual impact.

- The detailed data pertaining to release, allocation, expenditure, etc. are not available at one place and one format. They need to be made available at one location of the website.

- Data is not being updated periodically. Therefore the implementing agencies should keep updating the data for better planning and management of funds.

CHAPTER I

Introduction

1.1. Introduction

Agriculture still remains the backbone and the engine of the Indian Economy. It provides direct employment to 54.6 per cent of the total work force (main and marginal workers) in the country in 2011. Out of the total agricultural work force, the livestock supports 8 per cent (GoI, 2012-2017) and fisheries support 3.6 per cent. Altogether, the sector is providing livelihood to 69 per cent of the rural population (2011 census). It is an integral part of agriculture by way of providing income and food security. Because of lack of the manufacturing and tertiary sector support to employment and rising population adding more and more people to agriculture for the livelihood, the numbers of cultivators have declined from 31.75 per cent in 2001 to 24.65 per cent in 2011. On the other hand, the proportion of agricultural labourers has increased from 26.75 per cent to 30.25 per cent, respectively during the same period because of increasing landlessness among the cultivators.

The overall contribution of the agriculture sector to the Indian economy is enormous in terms of providing livelihood and food security to the masses despite it declining share in the Gross Domestic Product (GDP). The Share of agriculture sector in the overall GDP was 55.4 per cent in 1950-51 at the beginning of the planning era that subsequently has declined to 13.9 per cent in 2011-2012 and further declined to 13.7 per cent in 2012-13. In the recent past, growth in GDP in the agricultural sector has come mainly from the allied activities such as horticulture, animal husbandry and fisheries rather than the main crop husbandry. Fisheries sector contribution to the aggregate GDP is about 1.1 per cent and to the agricultural GDP is about 4.7 per cent, with an annual growth rate of over 4.5 per cent (National Fisheries Development Board). The livestock contributed around 28 per cent of the agriculture GDP and about 5 per cent of the country's aggregate GDP during 2010-11. Interestingly these two sectors have grown more than that of the annual growth of 2.7 per cent per annum in the crop sector. The other important sector, i.e., horticulture sector contributes 29.65 per cent of the agriculture GDP and it constitutes 13.5 per cent of the total agricultural area. The area and production under horticulture sector witnessed a compound annual growth rate of 3.8 per cent and 6.7 per cent per annum, respectively during the last decade. Thus, the contribution of allied sectors in agriculture is growing much faster than the agriculture sector.

The contribution of agriculture sector to the Gross Capital Formation (GCF) in GDP of the country was significant though there has been a general steady decline over the years. The GCF in agriculture sector relative to GDP in this sector has witnessed an increasing trend in the earlier five year plans and later declined. The Gross Capital Formation (GCF) of agriculture to its GDP

was 6.9 per cent during the First Plan (1951–56) to 10.8 per cent during the Fifth Plan (1974-79) after which it followed a declining trend up to the Eighth Plan (1992-97) which was 8.8 per cent. From the Ninth Plan (1997-2002) onwards, a reversal in trend has been witnessed partly due to the efforts of Government schemes and programmes, resulting in an increase in GCF to 13.9 per cent of GDP (agriculture) during the Tenth plan (2002-07). It has further risen to 18.8 per cent of agriculture GDP during the first three years of the Eleventh Plan (GoI, 2012-13). However, there is no improvement in the rate of growth of the agriculture sector. Another disturbing factor is that the share of agriculture & allied sector in total gross capital formation of the country is continuously declining along with the GDP share of agriculture to the total GDP. GDP share of agriculture in the total capital formation has declined from 8.4 per cent in 1980-81 to 14.1 per cent in 1990-91 to 10.2 per cent in 2000-2001 and further declined to just 7.7 per cent in 2009-2010 at 2004-2005 prices as per CSO data (GoI 2012-13). One of the reasons most emphasised for the decline or slow growth in Gross capital formation in the agriculture was due to reduced public investment. The share of public sector capital formation in agriculture and allied sector declined from 21.27 per cent in 2004-2005 to 15.07 per cent in 2011-12 at 2004-2005 prices (GoI, 2012-13).

Besides contributing to the growth of the economy through livelihood of millions of people the agriculture is providing raw material to agro based industries such as cotton, jute, sugar and agro processing.Food processing contributes around 10 per cent of GDP in the agriculture and manufacturing sectors (GoI, 2012-13). In terms of exports, the agriculture sector provides significant levels of growth. The exports earnings from this sectors amounted to 14.22 per cent of the total exports of the country in 2001-2002 but overall export growth has not improved in the later years. In fact it declined to 10.47 per cent in 2010-11. Overall, the average proportion of agricultural exports in the total exports has remained constant at 11 per cent during the last three Plan periods (www.indiastat.com). This is a signal that our country has not been in a position to increase exports in the WTO era which is now much more open and competitive.

1.2. Challenges

The above scenario shows how the economy is behaving over a period of time in the natural course of development and efforts of Government to improve the economy. The visible trends demonstrate that there are certain problems which have caused many aspects of the agriculture sector to underperform. Some of these issues are self-inflicted while other problems have emerged naturally during the course of India's economic development.

1.2.1. Small Holdings, Shrinking of Agricultural Lands

The small holdings are the major problem of the Indian agriculture sector. Year after year the number of small holdings is increasing making the holdings economically inefficient. The per capita availability of land also coming down due to growing population as well as shrinking of

agricultural land. The proportion of marginal holdings has increased from 61.6 per cent in 1995-96 to 64.8 per cent in 2005-2006 and 67.05 in 2010-2011 (GoI, 2012-13). The average size of holding has also progressively diminished over the years. It has declined from 2.28 hectares in 1970-71 to 1.41 hectares in 1995-96 and 1.23 hectares in 2005-2006 with a slight increase to 1.6 hectares in 2010-2011. The shrinking of land holdings is also coupled with the year on year decline of the total agricultural land in India. This is due to diversion of agricultural land for non-agricultural purposes. Between 1988-89 and 2008-2009, the cultivated land has declined by 2.76 million hectares (form 185.1 million hectares in 1988-89 to 182.3 million hectares in 2008-2009). The per capita availability of land in India has come down to 0.3 hectares per farmer as compared to 11 hectares in the developed countries (Anonymous, 2009). Despite the shrinking of agricultural land, there has been no adverse impact on the total food grain production. Indeed the food grain production in India has increased substantially, from 169.92 million tonnes in 1988-89 to 259.32 million tonnes in 2011-12; an increase of 52.26 per cent. Based on this achievement, Government should not be adverse to proactively addressing the food grains issues in the light of fast growing population, increasing waste land (467 lakh ha in 2011), and depleting soil quality leading to low productivity as compared to other countries, along with issues such as high salinity, alkaline content and water logged crop lands. As per estimates of Indian Council of Agricultural Research (2010), out of total geographical area of 328.73 million hectares, about 120.40 million hectares of arable land is affected by various kinds of land degradation, resulting in annual soil loss of about 5.3 billion tonnes through erosion, which is ultimately causing siltation of water bodies. The soil degradation indicator includes factors such as water and wind erosion (94.87 million hectares), water logging (0.91 million hectares), soil alkalinity/sodicity (3.71 million hectares), soil acidity (17.93 million hectares), soil salinity (2.73 million hectares) and mining and industrial waste (0.26 million hectares) (GoI, 2012-13). The State Governments have to bring a suitable policy to prevent the diversion of agricultural land for non-agricultural purposes and improve the inferior lands in the interest of the food and environmental security.

1.2.2. Low Irrigation

Indian agriculture depends heavily on successful monsoon seasons, which has high variance. Problems with irrigation in India are exacerbated by the lack of efficient use of available rain water. Potential irrigation in India is estimated at about 139.5 million hectares. Out of this, about 58.5 million hectares capacity is from major and medium irrigation sources, and 81.5 million hectare is from minor irrigation sources, that can further be classified into ground water (64.1 million hectares) and surface water (17.4 million hectares) (GoI, 2012-13). Of this, 110 million hectares of potential irrigated area has been created (Anonymous (2012)). But there has been huge gap between potential created and utilisation to the extent of 15 per cent (GoI, 2012-13). The proportion of irrigated area was 47.18 per cent of the cultivated area in 2009-10 (GoI, 2012-13). This means a vast land is still under rain fed conditions.

1.2.3. Inadequate Farm Power (Farm Mechanisation)

Indian agricultural operations still depend on traditional implements which were adequate when rural labour was plentiful. However, the availability of agriculture labour has come down and the input costs have increased tremendously. Even the available implements are unable to help the farmers to perform agricultural operations in a timely manner, (not to mention eating away at farmers' leisure time). The tractor density in India is about 16 tractors for 1,000 hectares, as against the world average of 19 tractors; in sharp contrast, USA has a density of 27 tractors per one thousand hectare of cropped area (GoI, 2012-13). However, over time the lack of mechanization has somewhat improved. In the last 50 years the average farm power availability in India has increased from about 0.25 kW/ha in 1951 to about 1.35 kW/ha in 2001. During the same period, the animal farm power has come down to 18 per cent from 97.4 per cent and mechanical and electrical sources of power have increased from 2.6 per cent in 1951 to about 82 per cent in 2001 (Srivastava, 2006). According to the Department of Agriculture, the share of agriculture workers and draught animals (farm power sources in agriculture) has come down from 63.5 per cent in 1971-72 to 13.67 per cent in 2009-10, whereas the share of tractors, power tillers and motors has gone up from 36.51 per cent to 86.33 per cent during the same time period (Ravi, 2013). Despite these improvements, many States such as Orissa, Rajasthan, Himachal Pradesh, Jammu & Kashmir, Chhattisgarh, Jharkhand, Gujarat, Assam, Madhya Pradesh and Maharashtra had less than 0.90 kW/ha in 2001 (Srivastava, 2006). If the future food requirement increases to 280 million tonnes food grains by 2020-21, which is not very unlikely (Kumar, 2013), farm power availability in the country has to scale to at least 2.0 kW/ha by the end of the Twelfth Plan (Ravi, 2013).

1.2.4. Post Harvest Losses

One of the most serious problems afflicting the agricultural sector in India is the post harvest losses incurred in both agricultural commodities and horticultural products. Estimates on post harvest losses vary to a great extent, but on average, estimates suggest that the post harvest losses in horticultural crops sum around 40 per cent, while in food grains the extent is 20 million tonnes accounting 10 per cent of total production as per Ministry of Food and Civil Supplies, Government of India (Basavaraj *et al.,* 2007). Other more reliable estimates indicate that the post-harvest losses estimated to be about 18 to 25 per cent in the entire food supply–chain from production to consumption (GoI, 2012-13). Similarly, a study conducted by ICAR institute, Central Institute of Post Harvest Engineering and Technology in 2005-2007 (Nanda *et al.,* 2012) has indicated substantial post-harvest losses among major crops and livestock products. The study shows that the losses were found in the range of 3.9-6 per cent in the case of cereals, 4.3-6.1 per cent in the case of pulses and 2.8-10.1 per cent in case of oil seeds, fruits and vegetables in the range of 5.8-18 per cent. In the case of inland and marine fisheries losses totalled around 6.9 and 2.9 per cent, respectively and milk, meat and poultry had losses of 0.8, 2.3 and 3.7 per cent, respectively. Another recent study by Kannan *et al.,* (2013) indicated that, the total post

harvest losses in the case of paddy was 6.87 per cent and it was 11.15 per cent in red gram in. The lack of availability of storage, cold chains, efficient markets and food processing industries are the major reasons for the large share of post harvest losses. Though the percentages losses appear to be small, the quantum of losses in value terms was enormous and it amounts to Rupees of several crores in monetary terms. It is estimated that the value of post harvest losses of major agricultural products was about Rs.44, 000 crore as per whole sale prices of 2009 (Nanda *et al.*, 2012).

1.2.5. Poor Agricultural Marketing

Adequate and efficient agricultural markets are essential for realization of better income for the farmers and to minimize post-harvest losses. However in India, the infrastructure needed for efficient agricultural markets is inadequate. According to available data, the number of regulated (secondary) agricultural markets increased to 7,157 in 2010 compared to just 286 in 1950. There were 22,221 rural periodical markets, of which 15 per cent functioned under the ambit of regulation. The average area served by a market was 115 sq. km while an average area served by a regulated market was 454 sq. km. However, across the States there is a huge variation in the market facility available per sq.km, e.g., market availability varied between 103 sq. km. in Punjab to 11,215 sq. km. in Meghalaya (GoI, 2012-13). This is low as compared to one market within 5 km radius (approximately 80 sq km) as per the recommendations of National Farmers Commission in 2004 (GoI, 2011).

1.2.6. Poor Quality of Seeds and High Prices

The targeted agriculture growth rate of 4 per cent per annum would be possible provided the farmers are supplied with high yielding quality seeds. The available data shows that the availability of hybrid seeds in the country has by and large been higher than the demand (GoI, 2012-13). However, there was a serious problem in adoption of high yield varieties due to lack of availability or high cost. Occasionally, many of the supplied seeds are of low quality. There is evidence which shows that, seeds are not adequately supplied to farmers when they need. For instance, Andhra Pradesh needed 47 lakh quintals of seeds in 2010 but the Government of Andhra Pradesh had set a target of 18 lakh quintals seed for subsidised distribution, leaving a large gap between supply and demand (Kurmanath, 2010). The seed sector has to be given priority as the Government of India has promised subsidised food grains to 75 per cent of the rural population and 50 per cent of the urban population under the National Food Security Bill (NFSB).

1.2.7. Poverty

Poverty in India has a direct relationship with agricultural development. If the agriculture sector is progressing well, there is an expectation that poverty will come down drastically in rural India.

Overall poverty has declined from 45.3 per cent in 1993-94 to 37.2 and 21.9 per cent in 2004-2005 and 2011-12, respectively. During the same period, the rural poverty declined from 50.1 per cent, 41.8 per cent and 25.7 per cent respectively. The decline is 8.3 per cent between 1993-94 and 2004-2005 and 16.1 per cent between 2004-2005 and 2011-12 in terms of rural poverty. This percentage reduction of poverty was higher in rural areas as compared to the overall poverty decline and urban poverty. However there is still, a long way to go in reducing the poverty levels in India as the numbers of people below poverty line amounted to 269.3 million in 2011-2012 (www.planningcommiion.nic.in).

1.2.8. Farmers Suicides

A large number of farmers have committed suicide due to agrarian crisis. The National Crime Records Bureau (NCRB) data indicates that 1.5 lakh farmers had committed suicides between 1997 and 2005 and 2.85 lakh from 1995 to 2012. Some States have witnessed highest incidence of suicides. Between 2001 and 2006, four States namely, Andhra Pradesh Karnataka, Kerala and Maharashtra witnessed 8900 farmers' suicides. During five years of RKVY period (2007-2011) and initiation of PM package for mitigating suicides, number of farmer suicides was 79619 as compared to 86922 between 2002 and 2006, which means a decline of just 7303 suicides. The number of suicides still remains very high and must still be considered a serious problem. Most of these suicides have taken place due to crop failure and heavy debt.

1.2.9. Lack of Interest in Agriculture

A large proportion of farmers intend to leave the agriculture as the occupation is not considered a profitable enterprise. According to National Sample survey (2005), nearly 40 per cent of farmers wanted to leave the agriculturegiven another option for employment. The reason for this increased desire to leave the agriculture sector is due to decrease in productivity and farmers' income. Census data shows that between 1991 and 2001, over seven million people for whom cultivation was the main livelihood, quit farming. It suggests that, on average, close to 2,000 people a day abandon farming in the country. Recent Census (2011) data reveals that farmer population has shrunk by 8.6 million between 2001 and 2011 (Ravi, 2013). The 11th Five Year document of the Planning Commission also shows that the agriculture sector "is projected to contribute no increase in the Eleventh Plan and a net decrease of 4 million agricultural workers over the Twelfth plan period" (Anonymous, 2013).

1.2.10. Greater Migration from Rural to Urban

Today the existing labour force in the agriculture sector constitutes women and the elderly, as the younger generation is moving out of agriculture and migrating to urban areas. It is estimated that over 22 million people have migrated from rural to urban between the 2001 and 2011 Census. This is one of the reasons for the rapid growth of population in urban India as compared to rural India.

As per the 2011 Census data, the urban population increase was greater than that of rural India's by nearly half a million (Sainath, 2011).The 2011 Census data on migration shows internal migration expected to touch 400 million which accounts for one third of India's total population (Anonymous, 2013).

1.2.11. Union Government Investment in Agriculture

The Government of India has started helping agriculture through Central and Centrally Sponsored Schemes and Programmes. Typically the responsibility of developing the agricultural sector lies with the State. However, the Central Government is supporting or transferring financial resources under the Article 282 to the States to address some of the issues indicated earlier. The transfer of resources from the Centre to the States have been taking place through three Channels *Viz*., Finance Commission (FC), Planning Commission (PC) and Central Ministries and Departments. Under the last category there are two types of schemes for which the Central Government provides finances and the implementation is under the State control. These Schemes include Central Schemes (CS) and Centrally Sponsored Schemes (CSS). The Central schemes are fully supported through Central resources and the expenditure on Centrally Sponsored Schemes is shared by the Centre and States. The share of investment depends on the nature of the schemes. The major intention of these schemes is to develop various sectors which are considered national priorities including agriculture along with encouraging and motivating the State Governments to plan and implement programmes that would help attain national goals and objectives. These schemes come in the form of mission mode projects, adhoc grants, subsidies, special packages, crop specific programmes and agro climatic plans etc.

Over time Central assistance to the States for the development of agriculture has increased along with number of schemes. The outlay for such schemes was Rs. 50.7 crore during the 2nd plan (Deshpande *et.al.*, 2004) which went up to Rs. 878.82 crore for 53 schemes excluding rural development programmes during the 6th Plan (GoI, 1985). The number of such schemes was reduced from 52 in the 11th Plan to 8 in the 12th Plan merging several ongoing schemes with an intention of better management and the increased availability of more resources to States (Antonymous 2011). These 8 scheme are (i) Farm Plant and Machinery; (ii) National Horticulture Mission (NHM); (iii) Integrated Scheme of Oilseeds, Pulses, Oil Palm & Maize (ISOPOM); (iv) National Mission for Sustainable Agriculture; (v) National Food Security Mission-Pulses (NFSM-Pulses); (vi) National Rain fed Authority; (vii) Extension; (viii) Improve seed Production, Quality and Distribution; and (ix) RKVY.

The RKVY is flagship project of the Ministry of Agriculture and it is being fully funded by the Centre and has been classified as a State scheme. According to latest information, the total transfers from the Centre to States in the 11th Plan has been estimated about Rs. 6,60,506.40 crore including RKVY allocation of Rs. 25000 crore and Prime Minister Relief Package for the farmers in the suicide prone districts (Rs. 16979.69 crore). Out of this, the nine Flagship CSS

alone constituted about Rs. 5,24,465.99 crore, *i.e.*, 79.4 per cent of the total expenditure. These transfers include Central transfers under Additional Central Assistance (ACA) for Externally Aided Projects, all CSS and Normal Central Schemes. Central transfers under ACA/Central Sector (CS) Schemes alone estimated at Rs. 2,90,317.63 crore, *i.e.*, 18.28 per cent of theGeneral Budget Support(*GBS*) (GoI, 2011).The impact of these schemes, other agricultural schemes and programmes of the States have generally increased the overall growth rate of GDP in the country and reduced the farmer's suicide rates. The growth rate of aggregate GDP has increased from 5.52 per cent in the 9th Plan to7.6 per cent in the 10th plan and 8.2 per cent in the 11th Plan**.** However, the agriculture sector has shown declining trend. The growth rate declined from 2.5 per cent in the 9th Plan to 2.4 per cent in the 10th Plan. Some of the States in the country have witnessed higher growth in the agriculture both in the 9th Plan and 10th Plan and some have experienced lower growth and even negative growth. Nonetheless, the country was not able to achieve the target of 4 per cent growth in agriculture which has been planned for 9th, 10th, 11th and now the 12th Plan. The major constraints for not being able to achieve the 4 per cent growth target were the consistent decrease in investments in the sector by State Governments. Considering this and above mentioned challenges, the Central Government has launched a Special Additional Central/Assistance Scheme called RKVY in 2007 in addition to its existing Centrally Sponsored Schemes, to supplement agricultural investment.

1.3. Objectives

The main objectives of the RKVY scheme are:

- Incentivize the States so as to increase public investment in agriculture and allied sectors.
- Provide autonomy to States in planning and executing agriculture sector schemes.
- Ensure the preparation of detailed agricultural plans for districts and States.
- Achieve the goal of reducing the yield gaps in important crops.
- Maximize returns to the farmers in agriculture and allied sectors.
- Capitalize agriculture and allied sectors in an integrated manner.

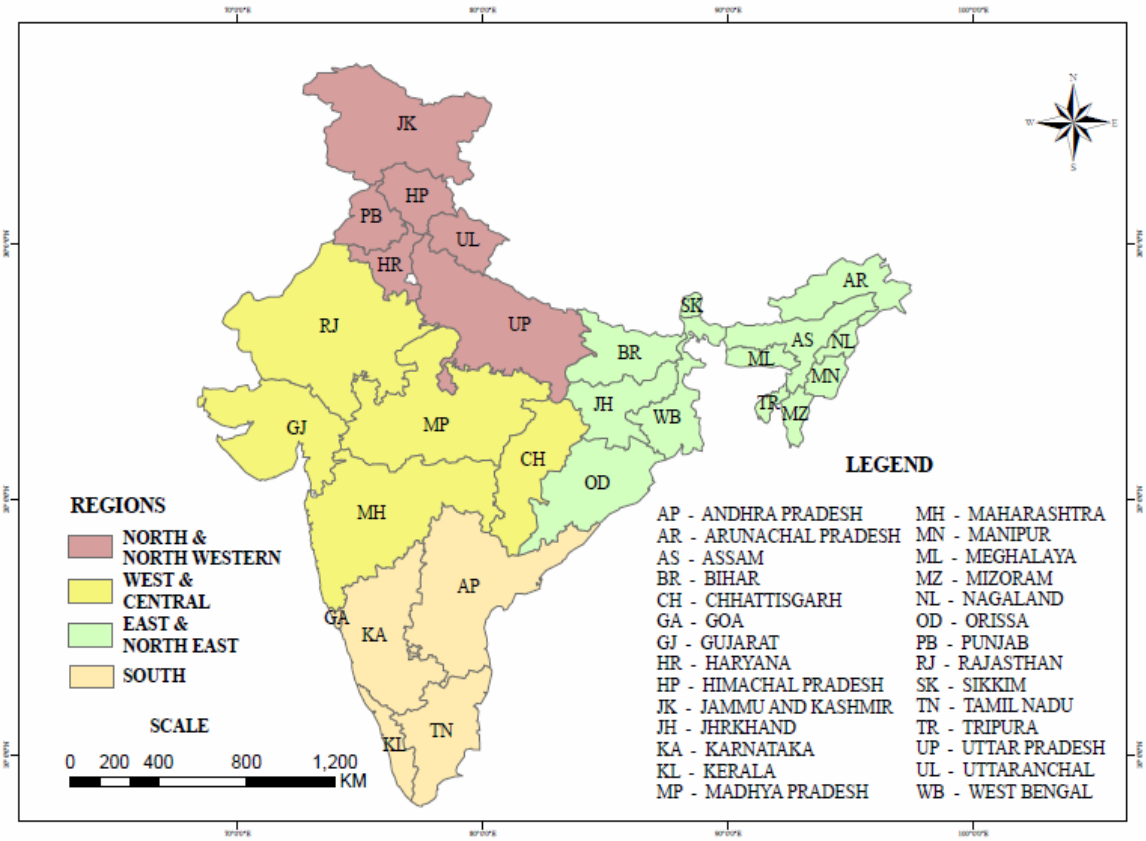
To fulfil these objectives, the scheme was implemented with an allocation of Rs.25000 crore in all the 28 States and 6 Union Territories of the country starting from 2007-08. This investment was increased by a further allocation of Rs. 63,000 crore, which accounts for a 150 per cent increase in the 12th Plan. The State Governments have undertaken the task of implementation of RKVY by covering twenty sectors relating to agriculture and allies sectors and executing them by involving relevant Departments and Institutions, Organisations and Agricultural Universities. By the end of 2011-12, more than 5700 projects and programmes were initiated in States incurring an expenditure of Rs.27, 000 crores.

1.4. Main Objectives and Scope of the Study

The main objective of the Impact Evaluation Study (IES) of RKVY is to examine the extent to which the components and activities under the RKVY have actually met or / are meeting their stated targets (objectives) for improving agricultural productivity, production and enhancing economic conditions of the farmers. The findings of the study will be presented in three reports. The first report pertains to all India based on the analysis of secondary data on major components of the scheme, allocation and utilisation of funds, outcomes and outputs of the programme at all India as well as at State levels. This will provide a feedback to DAC for correcting the loopholes in the programme in order to achieve the desired results**.**

1.5. Data Collection and Compilation

The study is mainly based on secondary data which is available on the RKVY website (rkvy.nic.in). This data pertains to 7234 projects in four regions of India (Map 1.1) under RKVY during 11th Plan. These projects include normal projects and sub schemes in all the 28 States excluding Union Territories. This information was supplemented with other sources of the Ministry of Agriculture to capture full picture of the RKVY including Union Territories. These sources include statements, circulars, letters, etc.



Map 1.1: Map showing Regions and States of India

1.6. Structure of the Report

The first report is presented in eight chapters. The first chapter presents the introduction, containing the importance of agriculture, challenges, Central Government investment in States agriculture, RKVY objectives and objective of the study, data sources and limitations of the study. The pattern of allocation, expenditure, nature of projects, characteristics of the projects and their status for all India have been presented in second chapter. The third chapter presents the overall assessment of agriculture during RKVY period and RKVY impact on the macro agricultural indicators. Chapters' four, five, six and seven deals with the individual State reports in the four regions of India *i.e.*, North and North West, South,West and Central, and East and North-East region. These chapters cover the issues which are addressed in the second chapter. Chapter eight devotes to summary and policy conclusions.

1.7. Data Limitations of RKVY

The data available in the Website of RKVY is not adequate and meaningful to make effective analysis of the programme. Firstly, year wise data for several parameters was neither available on the website nor was received from any State. Secondly, theallocation and expenditure data provided by the Ministry of Agriculture & Cooperation, Government of India for the States and the data provided by Website does not concur with each other. A possible explanation for this could be that the expenditure shown in the website might have been repeated as the same projects and are repeated in several years. Thirdly, the data provided by the ministry on releases for the States in most cases shown as utilization and expenditure. This is not the case in website data. The website data only shows the expenditure, not the release. A few States have provided the release data now; this data is same as expenditure data. Fourthly, as the number of projects reported is repeated and hence the number of individual projects are higher as compared to the actual projects. Finally, the physical targets and achievement data are not properly entered. In many cases, the targets, achievements, expenditure data is not available.

CHAPTER II

Allocation and Expenditure under RKVY in All India

2.1. Introduction

Availability of sufficient funds and its judicious utilization is pivotal for success of any economic development activity. This factor assumes importance in relation to agriculture and rural development. The procedure laid down for allocation and release of funds to States under RKVY scheme was much easier and simpler as compared to other schemes. Further, with respect to expenditure and utilization of the funds, the States were bestowed with wide flexibility in terms of selecting projects and programmes for implementation. Hence, before touching the implementation of this programme, this chapter endeavours to briefly analyze about allocation, release and expenditure procedure adopted for RKVY implementation throughout the length and breadth of the country.

2.1.1. Eligibility of States for Fund Allocation

There were no stringent eligibility criteria fixed for States to access RKVY funds. The annual allocations of funds to States by the Centre under RKVY depended primarily on amount provided in State budget to agriculture, excluding RKVY funds to agriculture and allied activities over and above the base line share i.e., moving average and average percentage expenditure incurred on agriculture during the last three years**.** The other main criterion for allocation of funds was submission of District Agriculture Plans (DAPs) and State Agriculture Plans (SAPs) by the States. However, subsequently both these criteria were relaxed once the RKVY Scheme came into operation. Subsequently, simple maintenance of baseline share suffices States to claim RKVY funds. Condition of completion of SAP/DAP was also relaxed as States required some time to prepare SAPs, after completion of massive exercise of preparing Comprehensive District Agriculture Plans (CDAPs) in accordance with the Planning Commission guidelines. In addition to these conditions that were later relaxed, States were required no prescriptions about the projects, schemes and other programmes to be undertaken under RKVY programme. Thus, fund allocation to States, under RKVY, was almost hassle free coupled with complete flexibility to opt what is best suited for their local conditions.

2.1.2. Procedure for Release of Funds to States

The State Agriculture Departments (SADs) were designated as nodal agency for RKVY implementation. Among other tasks, they were mediators between the State and Central government for receiving and distribution of RKVY funds to implementing agencies. However, for administrative reasons, the State government had the liberty to identify department other than

Agriculture as a nodal agency, or even create a nodal agency department. In instances where SAD was not the nodal agency, the center could/might release the funds directly to nodal agency notified by the State.

The implementing agency had to prepare and submit a Detailed Project Report (DPR) to the nodal agency for release of funds. The nodal agency in turn would forward this to State Level Sanctioning Committee (SLSC) for approval. The nodal agency, before recommending to SLSC, had to ensure that the project fulfills RKVY objectives. The nodal agency also had to satisfy itself about competency of the implementing agency, anticipated benefits that would flow to the farming community, definite time-lines for implementation and such other aspects. For this purpose, the nodal agency was empowered to spend up to 5 per cent of funds for hiring professionals and consultants.

2.1.3. Utilization of Funds by States

RKVY was mainly a project oriented Scheme. Still, it did not exclude existing State and central schemes. Thus, States could avail additional outlays for existing projects and programmes out of RKVY funds. For this purpose, RKVY funds can be utilized by the State in two streams: - Under Stream-I, it was essential that minimum of 75 per cent RKVY fund has to be used for specific projects / schemes / programmes which have been approved as part of the State and District Plans. The States could use remaining 25 per cent of RKVY funds under Stream-II for strengthening existing State schemes. Thus, the States were not permitted to use more than 25 per cent for Stream – II purposes under any circumstances. However, the States could use entire i.e. 100 per cent amount in Stream-I, if they desired.

2.1.4. RKVY Database Management Information System (RDMIS)

Apart from easy allocation and release of funds, monitoring of scheme with strong Management Information System (MIS) is equally important to attain desired objectives of the programmes. For this very purpose, RKVY Database Management Information System (RDMIS) was hosted on the website http.//www.rkvy.nic.in for monitoring RKVY programmes. All implementing agencies were supposed to enter all relevant data of the projects / programmes that were being implemented by them in their respective States on the website. It was further expected that the data would be periodically updated to indicate financial and physical progress of RKVY programmes. Main objective of RDMIS was to access authenticated data on several physical aspects such as expected and actual outputs, expected and actual outcome, fund utilization status, growth impact etc., to all those who are connected with RKVY in one or the other way. In reality, due to some administrative and technical shortcomings in the system, RDMIS did not serve the purpose to the extent it was expected.

Hasty launching of the system coupled with inadequate training to data-entry personnel at gross-root level was one of the main administrative shortcomings. Many implementing agencies had not entered RDMIS data online as they did not have complete knowledge about it. During 2011-12, there was complete lack of information on the website related to release of funds. Moreover, the data supplied online remains only to comply with the rule, without giving due attention on the accuracy of the data entered on the website. As a result, RDMIS contains some conspicuously erroneous entries. For instance, Uttar Pradesh has an allocation of Rs. 10,000 crore for the year 2011-12 which is a remote possibility.

Every year the projects were assigned new identification numbers irrespective of whether these projects were new project initiated during the year or they were in continuation of a programme initiated in the previous years. Hence, the projects did not have a unique identity to serve as a key field. This is one of the major technical flaws in the entire system. Another technical problem faced is inconsistency in the data. Proper quantification and unitization of physical targets and achievements is another technical hindrance.

2.1.5. Data Constraints Encountered

The impact evaluation study team completely relied on this website http.//www.rkvy.nic.in for secondary data. Year-wise, State-wise and sector-wise consolidated data in excel format was available only for numbers of projects initiated and project cost, i.e., allocation. This was only at macro level, i.e., allocations for each project was not available. As far as data pertaining to release and utilization of funds and physical targets and achievement are concerned, even macro data was not available. However, though it was too laborious and time consuming, micro data was extracted following the hypertext links provided in consolidated statements. Even this method proved futile to great extent on many parameters. The data on physical targets and achievements was indicated as not available for very large number of projects. The data relating to release of funds was not at all available. Release and utilization along with allocation data was collected from circulars and agenda notes placed on the same website in another location. Thus, three sets of secondary data were collected at three locations of the RDMIS website. Despite all these efforts, in any of the three sets of data, sector-wise release data was not available. As mentioned earlier, wide variations were noticed in these three sets of data. These variations are presented in Table 2.1.

Project-wise data could be collected for 7234 projects. The data pertaining to expected output and outcome, actual output and outcome was indicated as “N.A.” in 5464 projects, i.e., more than three-fourth numbers of projects. About 5 per cent of the projects had claimed to have achieved 100 per cent physical target by showing same data in physical targets and physical achievements fields. Therefore, the very important analysis pertaining to physical targets and physical achievements, expected output and outcome, actual output and outcome could not be attempted very systematically. With all this constraints, the data collected on project-to-project

basis was used for analysis of allocation and expenditure under RKVY schemes. The data pertaining to Union Territories was not made available at all and therefore only 28 States were considered for this analysis.

2.2. Overall Sector Wise Allocation and Expenditure Pattern in All India

Funding under RKVY programme was distributed over 20 main sectors. Each of these main sectors had sub-sectors. In all, there were 152 sub-sectors. These main and sub-sectors covered all the farming activities, research, information technology, extension, training and also some non-farming activities. The RKVY programme was implemented in 28 States and 7 Union Territories during Eleventh Five Year Plan. By the end of the Plan, RKVY programme had implemented 7234 number of projects, programmes and schemes covering all the sectors and sub-sectors. An expenditure of Rs. 23030.47 crores was incurred by 28 States against proposed or allocated budget of Rs. 37919.65 crores. Table 2.2 provides the sector-wise allocation and expenditure compiled by our team from data downloaded on project-to-project basis.

It may be seen from Table 2.2 and Figure 2.1 that eight sectors, viz., crop development, micro / minor irrigation, horticulture, animal husbandry, agriculture mechanization, seed production, innovative programme and natural resource management accounted for more than 75 per cent of the total expenditure distributed over 20 main sectors. However, these eight sectors constituted less than 60 per cent of the projects / programmes taken-up for implementation during RKVY period. The absorption capacity, measured in terms of ratio of expenditure to allocation, remained at 0.61 at all India and ranged between 0.32 (integrated pest management) to 0.75 (crop development) among the sectors. The remaining 25 per cent was invested in remaining 12 sectors. Expenditure per project was highest Rs. 9.92 crore for micro and minor irrigation, followed by agricultural mechanisation Rs. 6.89, innovative programmes Rs. 6.80, and crop development Rs. 6.16.

The performance of regions with respect to allocation and expenditure is presented in Table 2.3 and Map 2.1. Expenditure allocation ratio of 0.72 in South India was much higher than all other regions. Therefore, outwardly, it appears that South India utilized planned amount better than all other regions. However, it may be seen that West and Central India had highest allocation of Rs.13983.89 crores, which was almost equal to the expenditure of the other three regions put together. Further, like allocation, expenditure of West and Central India was also much higher compared to all other regions. Looking at the expenditure allocation ratio, the West and Central India was next to South India with a ratio of 0.60. The East and North East India spent an amount of Rs. 5183 crore and its expenditure allocation ratio stood at 0.57. The performance of North and North Western India was lowest both in terms of total expenditure (Rs. 36041 crore) as well as expenditure allocation ratio (0.54) among all regions.

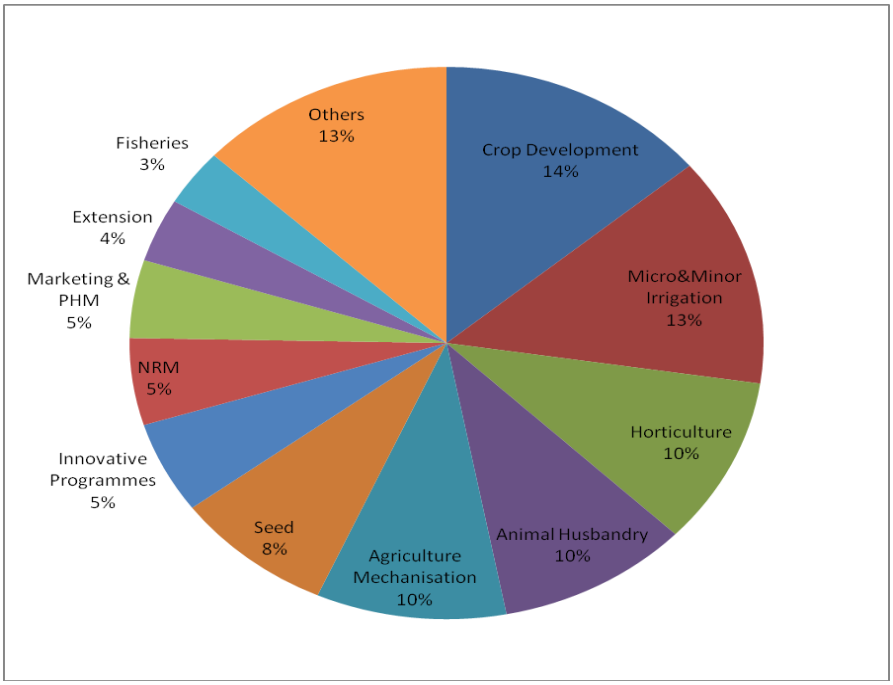
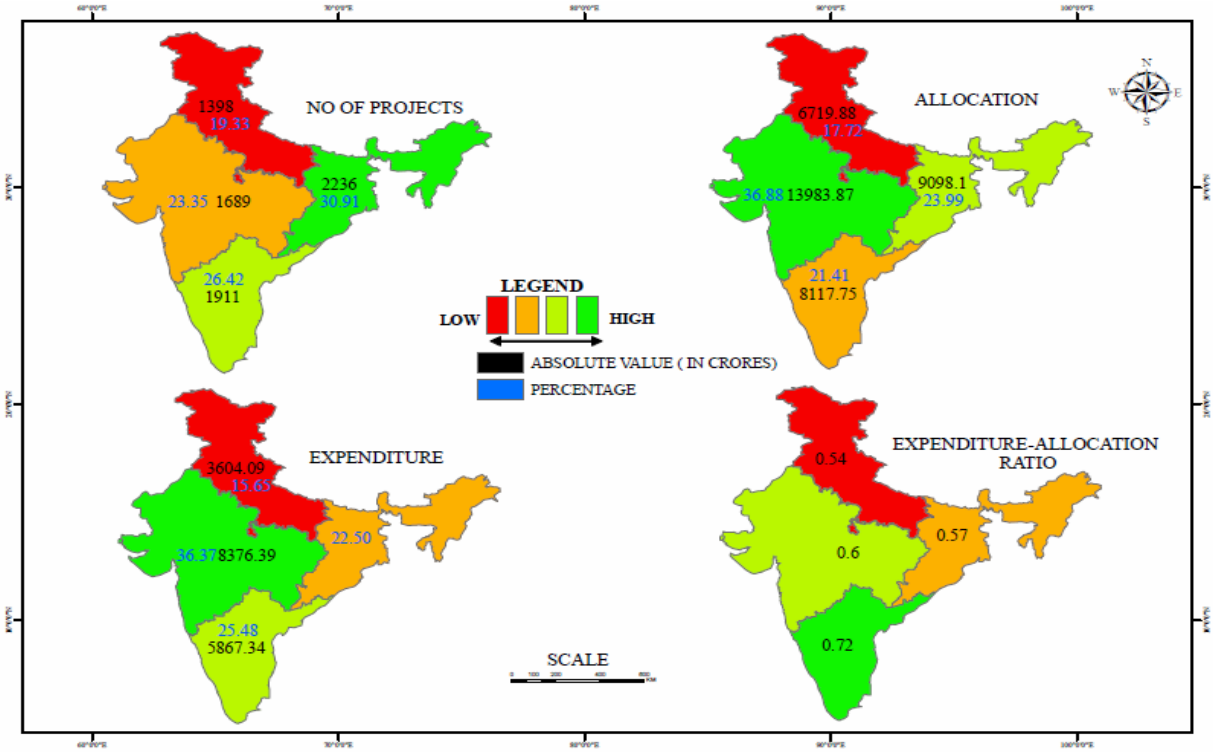


Figure 2.1: Sector-Wise Distribution of Expenditure under RKVY during 11th FYP

Note: Others include Dairy Development, Research, Organic Farming and Bio-fertilizers, Fertilisers and INM, Cooperatives and Cooperation, IPM, Non-farm activities, sericulture and IT



Map 2.1: Region-Wise Number of Projects, Allocation and Expenditure under RKVY during 11th FYP

Crop development, micro and minor irrigation, horticulture, animal husbandry and agriculture mechanization sectors occupied top five positions with respect to the proportion of investment in these sectors, out of total expenditure under RKVY programme during the 11th Five year Plan. Some further details of RKVY performance on these five sectors is given below.

2.2.1. Crop Development

The main focus of RKVY under crop development sector was integrated development of major food crops such as wheat, paddy, coarse cereals, minor millets, pulses and oil seeds. In addition to these targeted crops, the scheme also covered some horticultural crops like Banana, vegetables, coconut and also cash crops like cotton and sugarcane. By the end of the period of 11th FYP under RKVY, this sector covered 520 projects with an allocation of Rs. 4243.51 crore. This sector had incurred highest expenditure of Rs. 3201.47 crore as compared to other main sectors. It also had the highest expenditure allocation ratio of 0.75 which was more than all India ratio aggregate ratio of 0.61. Within this main sector, Paddy (30.07 per cent) and coarse cereals (22.85 per cent) had accounted for nearly 53 per cent of the expenditure incurred. Integrated Scheme of Oilseeds, Pulses, Oil palm and Maize (ISOPOM) was simultaneously being implemented in 14 major States, during the 11th Plan under National Mission on Oil Seeds and Oil Palm (NMOOP) as a sub scheme of RKVY with a separate additional budget. Probably, for this reason the share of oil seeds was lower only 13.91 per cent of the total expenditure under crop development. Region-wise performance under crop production is given in Table 2.4 and Figure 2.2 below.

West and Central India and East and North East India together had spent more than 73 per cent of the total expenditure on crop development sector. Therefore, they had taken more initiative in crop development sector than the other two regions. The expenditure of South India was less than 20 per cent of the total expenditure. Within South India, Tamil Nadu and Kerala states together accounted for 70 per cent of the expenditure in this region. While Kerala had confined its expenditure only for Paddy crop, Tamil Nadu had expenditure on Paddy and oil seed crops.

West and Central India had concentrated on coarse cereals. This region had spent 53.77 per cent on coarse cereals out Rs. 1137.22 crores expenditure on crop development. The expenditure allocation ratio of 2.26 recorded in case of coarse cereals itself explains the extent of priority accorded by West and Central India on coarse cereals. Chhattisgarh was the main contributor for high expenditure allocation ratio. The expenditure on coarse cereals in Chhattisgarh was Rs. 460.85 crore which exceeded the allocation of Rs. 10.29 crore. The reason for the same is yet unknown and we shall try to ascertain the same at the time of primary survey. East and North East India had taken-up highest number of 185 projects under crop development programme. This region had the highest expenditure of Rs. 1211.14 crore, i.e., 37.84 per cent of the total expenditure under crop development sector. It may be noted that 80 per cent of expenditure in

East and North East India was in four States viz., Bihar (Rs. 514.97 crore), Jharkhand (Rs. 147.89 crore) and Orissa (Rs. 329.56 crore). All the above mentioned expenditure was on paddy crop.

Performance of North and North Western region with respect to crop development sector was poor as compared to other three regions. This region had lowest allocation for crop sector. However, its expenditure allocation ratio was 0.66 in crop development sector that was far above its overall ratio of 0.54. The major expenditure on crop development in this region happened in Uttar Pradesh to the extent of 66 per cent of the total expenditure. Uttar Pradesh spent the entire amount of crop development on wheat and sugarcane crops. The other 30 per cent was jointly shared by Punjab and Haryana States. Punjab utilized the amount spent on crop development for wheat crop and Haryana utilized for sugarcane. Only 4 per cent of the expenditure on crop development in North and North Western Region was spent on vegetables incurred by Himachal Pradesh State.

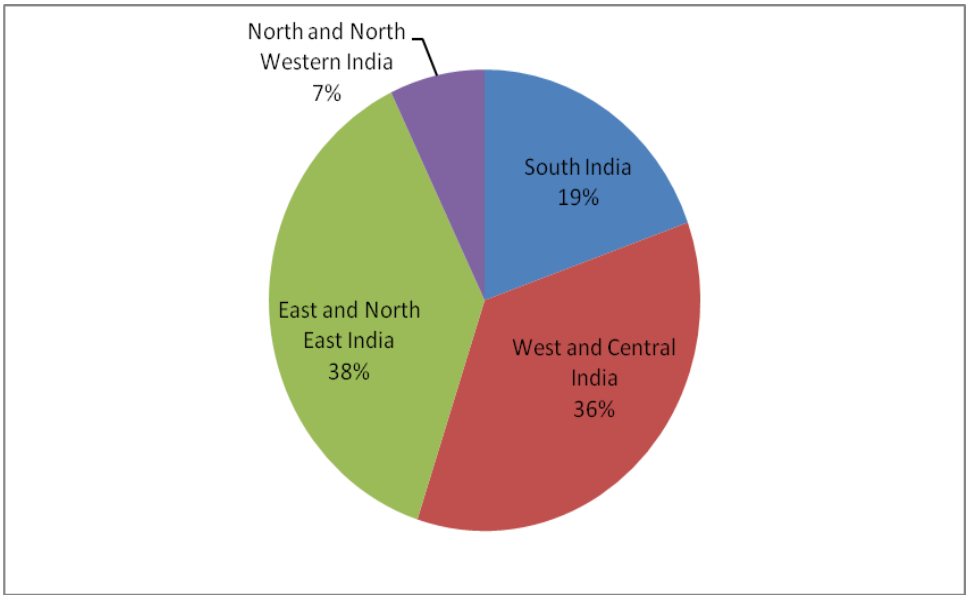


Figure 2.2: Region-Wise Expenditure on Crop Development under RKVY during 11th FYP

2.2.2. Micro and Minor Irrigation

This sector had the lowest numbers of projects, i.e., 314 among the top five sectors with second highest both in allocation (Rs. 4572.21 crore) and expenditure (Rs. 3096.09 crore) showing expenditure allocation ratio of 0.68 which stands third among all the sectors. This sector comprised of 14 sub-sectors. Supply of pump sets with an expenditure of Rs. 784.31 crore, supply of sprinkler and drip irrigation systems with an investment of Rs. 599.17 crore and establishment of farm ponds costing Rs. 461.05 crore were the three sub-sectors accounting for 59.57 per cent of the total expenditure under micro and minor Irrigation sector. Another 26 per cent expenditure of micro and minor irrigation sector was invested in other three sub-sectors viz.,

percolation / minor irrigation tanks (9.18 per cent), tube wells (8.94 per cent) and doggies (7.98 per cent). Investment in these three sub-sectors of micro / minor irrigation was mainly in West and Central India, and North and North western regions. The investment in South India for this sector was negligible. It may be due to prevalence of many other irrigation schemes outside RKVY programmes. Table 2.5 contains region-wise details of allocation and expenditure under micro and minor Irrigation sector and the same is shown in Figure 2.3.

Karnataka State has taken a lead in South India by spending entire allocation amount of Rs. 55.0 crore on diggies and establishment of farm ponds. Karnataka is followed by Tamil Nadu which invested mainly on check dams and percolation tanks to the tune of Rs. 22.37 crore and about Rs. 8.0 crore on establishment of farm ponds and supply of pump sets. Except for these two States which accounted for 88 per cent of the total amount spent in South India, the performance of South India in micro and minor irrigation projects was negligible as compared to other regions. The performance of West and Central India was impressive with regard to investment on micro and minor irrigation projects. Total amount of Rs. 1877.20 crore spent by West and Central India under this programme exceeded by a wide margin of Rs. 658 crores over and above the amount spent by all the other three regions put together in this programme. The States of Madhya Pradesh, Maharashtra and Rajasthan were the chief contributors for this achievement with Rs. 420.27, Rs. 978.96 and Rs. 738.79 crore of expenditure, respectively. Supply of sprinkler and drip irrigation sets, establishment of fish ponds and supply of pump sets with an investment of Rs. 1284.96 crore were the main micro / minor irrigation programmes undertaken in this region.

Investment to the extent of Rs. 147.50 crore, through supply of pump sets, in Assam and Establishment of Percolation tanks spending Rs. 117.15 crore in Jharkhand were the only two subsectors covered in the East and North East India. The performance of remaining 10 States in micro and micro irrigation sector was not noteworthy. However, its performance in the East and North East region was much better than the South India in terms of total expenditure incurred as well as allocation and expenditure ratio.

The performance of North and North Western India in micro and minor irrigation projects was not outstanding. The two States, viz., Uttar Pradesh and Haryana accounted for 86 per cent of the achievement in terms of expenditure. In this region pump sets and sprinkler systems were the main investment items under micro and minor irrigation. Uttar Pradesh had shown an expenditure of Rs. 126.01 crore towards Shallow / dug wells. In fact, Uttar Pradesh was the only State in the entire country which attempted this sub-sector.

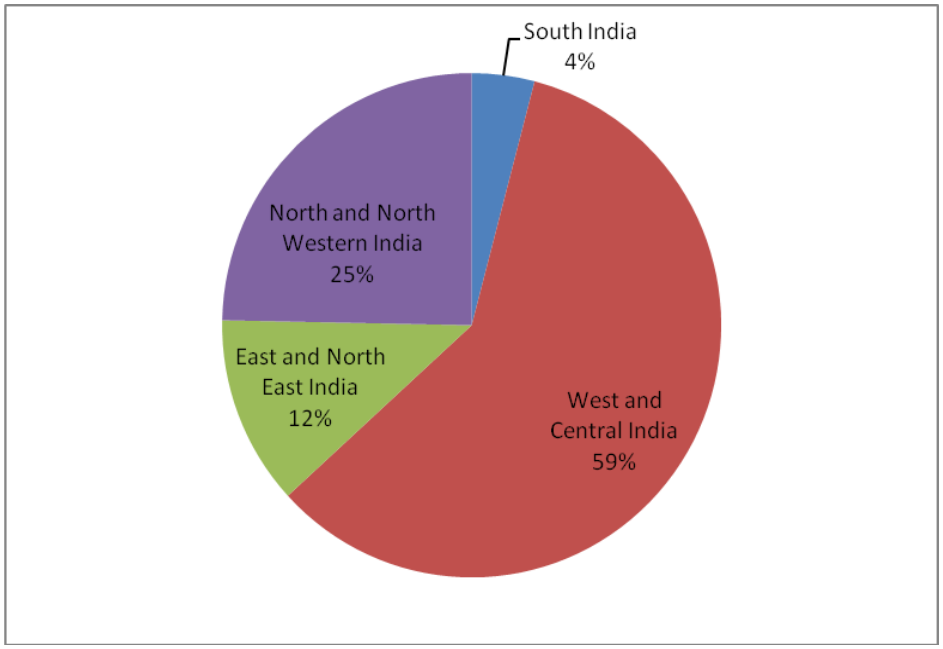


Figure 2.3: Region Wise Expenditure under Micro and Minor Irrigation Sector under RKVY during 11th FYP

2.2.3. Horticulture

Horticulture sector is one of the most thrust areas of RKVY programme and has highest number of 29 sub-sectors. However, only three sub-sectors, viz., area expansion, development of horticulture farms / facilities and vegetables had spent more than 67 per cent of the total of Rs. 2262.23 crore under horticulture. Although horticulture sector stands third among the 20 sectors in terms of its expenditure, it had very low expenditure allocation ratio of 0.46 which was lowest among the top five sectors. In fact, its expenditure allocation ratio stood almost at the bottom even among all twenty sectors. Only South India and West and Central India had shown some interest in horticulture sector with an expenditure allocation ratio of 0.77 and 0.60, respectively. Table 2.6 and Figure 2.4 present the region-wise performance under horticulture sector.

The difference in expenditure on horticulture between South India and West and Central India was marginal. These two regions accounted for more than 70 per cent of the total expenditure under horticulture sector under RKVY programme. However, as far as the expenditure allocation ratio is concerned, South India performed far better than West and Central India with a ratio of 0.77 in the former compared to 0.60 in the case of latter. Three States, viz., Andhra Pradesh, Karnataka and Tamil Nadu showed high priority towards horticulture while Goa literally did not implement any horticulture projects despite an allocation of Rs. 29.00 crore. Kerala State, although had taken-up 93 projects under horticulture sector and had an allocation Rs. 135.35 crore, but the State spent only half of its allocation amount. Area expansion, development of horticulture farm / facilities, vegetables was the major subsectors of this region. Coconut

development and fruit production projects were other sub-sector of horticulture that was taken-up in South India region, though at a small scale.

West and Central India had performed reasonably better under horticulture. The States contributing for its performance and having higher priority towards horticulture were: Maharashtra, Madhya Pradesh and Rajasthan. The pattern of expenditure in this region also remained similar to South India. However, floriculture and nurseries were attempted in Chhattisgarh in addition to other sub-sectors.

Operation of National Horticultural Mission as separate programmes in East and North East India and North and North Western India might be the reason for low preference to horticulture sector under RKVY programme in these two regions. However, heavy allocation of Rs. 1223.02 crores in Punjab in the North and North Western India for vegetables under horticulture was undoubtedly a colossal waste as it could use only Rs. 13.26 crores, i.e., utilization ratio of only 0.01. At the overall, expenditure allocation ratio in the horticulture sector was observed as 0.77 in the Southern Region, 0.60 in the West and Central Region, 0.43 in the East and North-east Region and only 0.16 in the West and North West Region.

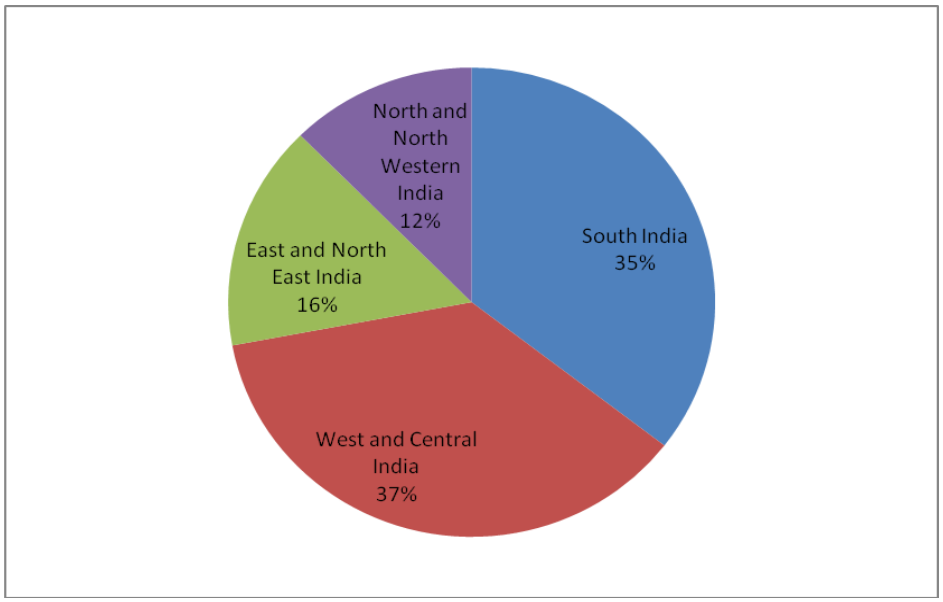


Figure 2.4: Region Wise Expenditure in Horticulture Sector under RKVY during 11th FYP

2.2.4. Animal Husbandry

This sector had implemented highest numbers of projects and programmes among the 20 sectors, i.e., 1255 projects. Among top five sectors, animal husbandry was second from the bottom (above horticulture) in terms of expenditure allocation ratio at 0.57. With respect to expenditure, animal husbandry spent Rs. 2258.13 crores and it was short by Rs. 4.00 crore only when

compared with horticulture sector. Out of 13 subsectors under animal husbandry, infrastructure, animal health, breeds improvement and feed and Fodder remained the main focused sub-sectors. These subsectors together spent more than 75 per cent of animal husbandry expenditure. Region-wise performance under animal husbandry is given in Table 2.7 and Figure 2.5.

Like in the case of horticulture sector, South India and West and Central India performed better in animal husbandry sector also. They together covered nearly 65 per cent of the total expenditure. However, South India had higher expenditure allocation ratio of 0.73 compared to West and Central India which had ratio of only 0.51. This may be due to higher allocation (almost 1.5 times) to West and Central India as compared to South India. Despite higher allocation in the West and Central India, both the regions had more or less same proportion of expenditure under animal husbandry sector. Comparing the expenditure allocation ratio, even North and North Western India observed higher expenditure allocation ratio (0.58) than West Central India.

In the southern region, Goa had negligible expenditure on animal husbandry sector. Among the remaining four States, Andhra Pradesh spent nearly half of the total expenditure in that region (Rs. 346.50 crore) while remaining amount, more or less, was equally shared by Karnataka, Kerala and Tamil Nadu. Most of the expenditure was incurred on animal health, feed and fodder, breed improvement and infrastructure sub-sector in this region. Extension, training and poultry sub-sectors also absorbed some expenditure on animal husbandry sector in this region. The sub-sectors covered in West and Central India was same as in the Southern region. Chhattisgarh State had attained an expenditure allocation ratio of 1.36 in infrastructure sub-sector under animal husbandry sector. Among the other four States of West and Central India, except Rajasthan, expenditure allocation ratio ranged from 0.74 to 0.80 in the case of infrastructure sub-sector of animal husbandry. However, it appears that the overall allocation in Maharashtra and Rajasthan was more than what was their absorption capacity since they had abysmally low over all expenditure allocation ratios of 0.34 and 0.26, respectively.

Out of 12 States of East and North East India, West Bengal, Bihar, Assam and Orissa had more than 76 per cent of the total expenditure on animal husbandry. It must be mentioned that Mizoram had a smaller expenditure on animal husbandry but it managed to spend the entire allocation of Rs. 15.94 crore mainly on miscellaneous sub-sectors of animal husbandry.

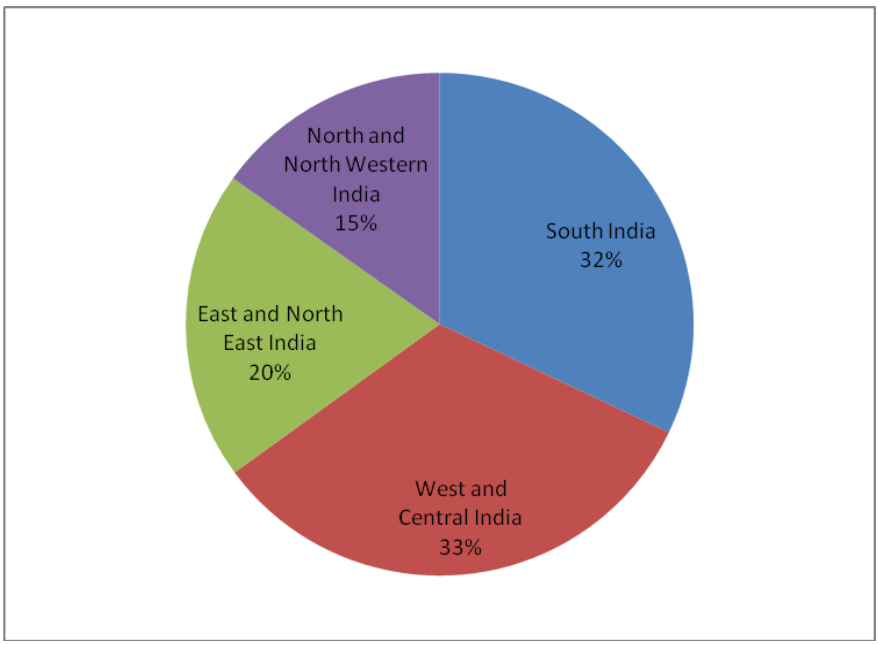


Figure 2.5: Region Wise Expenditure in Animal Husbandry Sector under RKVY during 11th FYP

2.2.5. Farm Mechanization

Machine and equipment assistance was the only sub-sector of farm mechanization which received the highest priority among 10 sub-sectors of farm mechanization. All the regions, except North and North Western India had implemented this sub-sector and spent high proportion of their total expenditure on this sub-sector. An amount of Rs. 1814.35 crore was utilized for this sub-sector under RKVY programme, which is 81.26 per cent of the total expenditure of Rs. 2232.90 crore under farm mechanisation sector. Out of the total an expenditure of Rs. 200.44 was utilized for custom hiring. Table 2.8 and Figure 2.6 present the region-wise performance of farm mechanization sector.

It may be seen that all the regions had attained comparatively higher expenditure allocation ratio in farm mechanization sector. Although, the amount of allocation and expenditure on farm mechanization was lowest in the North and North Western India, but it had highest expenditure allocation ratio of 0.87. The region might have sought allocation after proper planning as the ratio achieved in this sector by the North and North Western India was the highest among all the above discussed activities. Not only within North and North West, but at a glance on the expenditure allocation ratio among all the above discussed five sectors, North and North Western India achieved highest expenditure allocation ratio among all the regions. Only in crop development, the West and Central India achieved expenditure allocation ratio of 0.84.

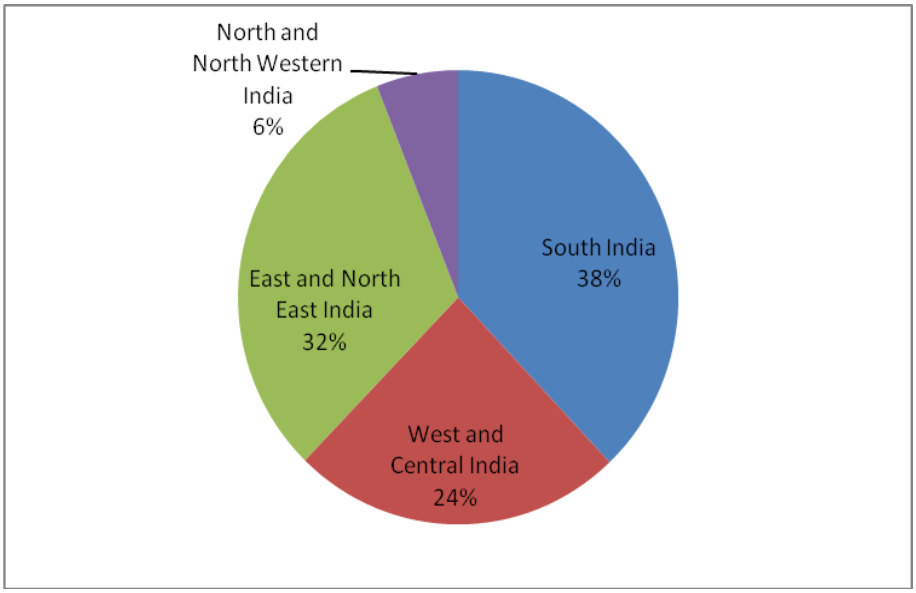


Figure 2.6: Region-Wise Expenditure in Farm Mechanization Sector under RKVY during 11th FYP

2.3. Sector Wise Size of the Projects Based on Expenditure

Taking a glance on the size of the projects taken up under the RKVY programme, the average allocation per RKVY project was Rs. 5.24 crores and the average expenditure per project was Rs. 3.18 crore. Across sectors, the average allocation value per project ranged from Rs. 1.46 crore in sericulture sector to 14.65 crores in micro and minor irrigation sector. Likewise, the average expenditure in the main sectors varied between Rs. 0.90 crore to Rs. 9.92 crore. At micro-level, there were several individual RKVY projects like animal health, feed and fodder (sub-sectors of animal husbandry) had an allocation amount as low as few thousand Rupees. On the other extreme, there were few projects that had allocation of Rs. hundreds of crores as in the case of watershed conservation, watershed development (sub-sector of natural resource management) and few sub-sectors of IPM sector. Similarly, a glance on the expenditure also showed amount between few thousands of Rupees in research oriented sectors to few hundred crores Rupees in natural resource management sector.

In view of these wide variations in allocation and expenditure, all the projects were grouped into four categories based on total expenditure under the programme. The details are presented in Table 2.9 and Figure 2.7 as percentage of each sector to total.

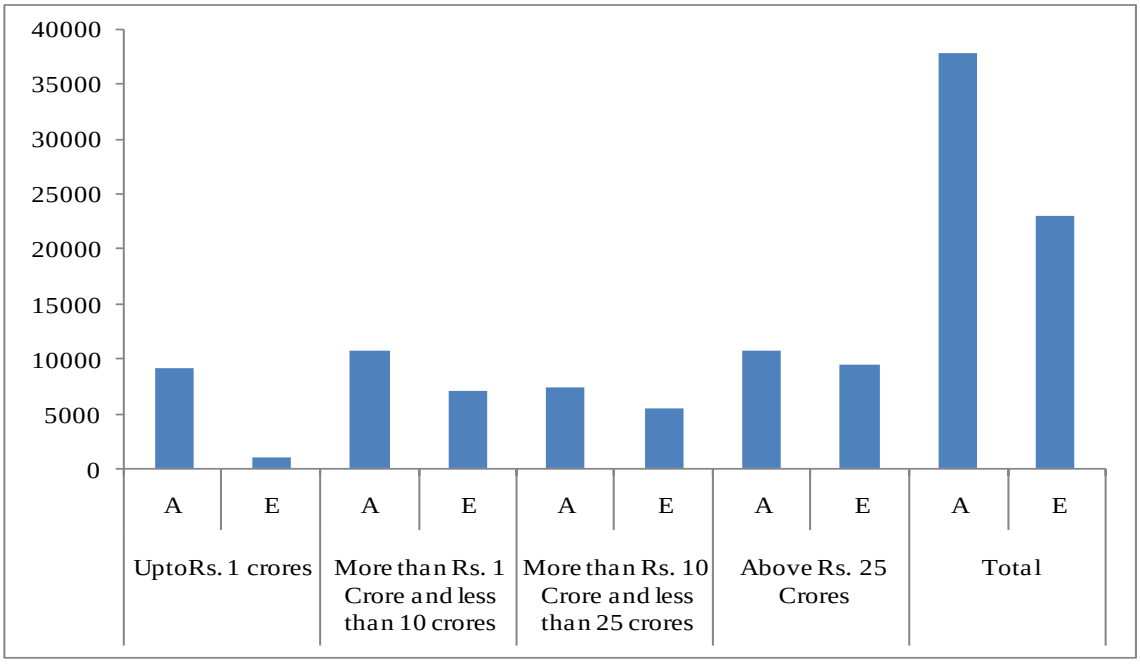


Figure 2.7: Size Wise Classification of Projects according to their Expenditure under RKVY during 11th FYP

From Table 2.9 it may be inferred that fund absorption capacity was high for those projects which had more than Rs. 25 crores of expenditure per project. It is evident from the statistics in the table that expenditure allocation ratio was directly proportional to the quantum of expenditure incurred on projects. Another factor that mattered for fund utilization capability was, number of project implemented in each group. The expenditure allocation ratio showed an inverse relation with numbers of projects implemented. It was observed that the projects with less than Rupees one crore expenditure had lowest expenditure allocation ratio and this category had highest number of projects implemented. The projects of above Rs. 25 crores expenditure had highest expenditure allocation ratio and they were lowest with respect to number of projects. This is further substantiated by the fact that expenditure allocation ratio of projects in the group of 'above Rs. 25 crores expenditure' was eight times higher than projects of 'less than Rs. 1 crore expenditure' group.

At the end of 11th Five Year Plan period Rs. 14889.13 crore remained un-utilized under RKVY out of Rs. 37919.61 crores of allocation that was around 40 per cent of the total allocated amount. Nearly 55 per cent of this un-utilized was accounted by projects of less than Rs. 1 crore and the rest was shared among remaining three categories, viz., Rs. 1 to 10 crore, Rs. 10 to 25 crore and above Rs. 25 crore which occupied 24.87 per cent, 12.37 per cent and 8.14 per cent share of the unutilized amount, respectively.

Out of 20 main sectors, 13 sectors had shown an expenditure allocation ratio of more than 0.80 in the projects involving more than Rs. 25 crores expenditure. Crop development and

horticulture sectors had expenditure allocation ratio more than one, i.e., 1.10 and 1.18, respectively. Region-wise classification of projects is provided in Table 2.10.

All regions mostly followed the same pattern as discussed above. From the above discussion, it appears that RKVY implementers had more inclination towards bigger projects of more than Rs. 25 crore worth of each project value. Possibly, there were several administrative and technical reasons which might emerge after our discussions with the RKVY implementing agencies and other concerned departments during our primary field survey. For the moment, it may be assumedthat few numbers of bigger projects could be implemented more efficiently than too many numbers of smaller projects.

2.4. Status Wise Classification of Projects under RKVY

By the end of 11th Five Year Plan, only 3542 projects / programmes had seen completion out of 7234 projects initiated under RKVY scheme from the year of its inception in 2007-08 to 2011- 12, that is only less than half of the total projects initiated. Among the incomplete projects, 376 were either not implemented or were abandoned. Thus, nearly 45 per cent of the RKVY projects, i.e., 3316 numbers remained ongoing although they were supposed to be completed by the end of 11th Five Year Plan. The completion status of the RKVY projects is presented in Table 2.11 and Figure 2.8.

The abandoned projects included 12 State Flagship projects coming under animal husbandry, horticulture, farm mechanization, marketing and post harvesting management, fisheries and organic farming sectors. These sectors also had few of the 11 ‘not implemented’ projects. Micro and minor irrigation and integrated pest management were the other two sectors which contained ‘not implemented’ projects. A couple of National Flagship projects belonging to water conservation structures and watershed development sub-sectors of natural resource management were not implemented.

The modified and on-going projects hardly utilized its allocation amount of Rs. 12.20 crores meant for crop development, fertilizers and INM and seeds. It is likely that the implementing agencies needed some drastic modifications in the projects to suit their local situations. Since, no fund was utilized for these 11 projects; they have to be treated as not implemented projects. Further details pertaining to sector-wise projects abandoned, not implemented, on-going / in-progress and completed / substantially completed is indicated in Table 2.11a and Table 2.11b

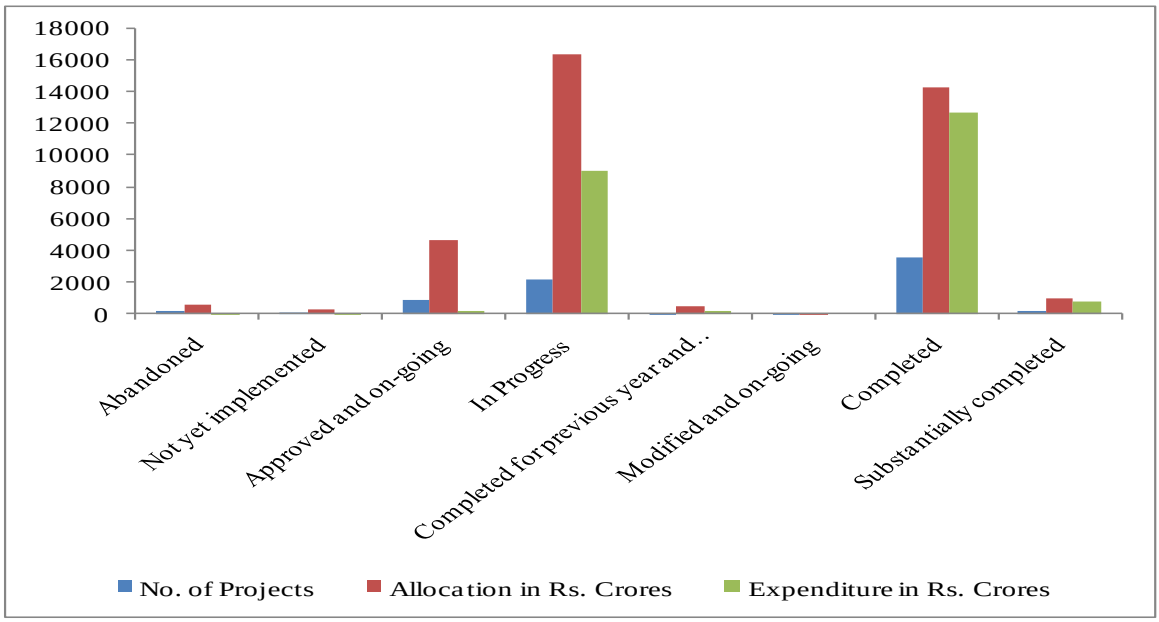


Figure 2.8: Status Wise Classification of Projects under RKVY during 11th FYP

The projects were abandoned invariably in all the sectors. Animal husbandry, horticulture, and extension sectors topped the list of abandoned projects in terms of numbers. These three sectors with 50, 38 and 21 number of projects in that order accounted for nearly 44 per cent of the 249 abandoned projects. The sectors considered as top five sectors, based on expenditure, had nearly 50 per cent of the abandoned projects and 54 per cent of not implemented projects. Animal husbandry and horticulture sectors had high proportion of abandoned and not implemented projects. These two sectors also recorded high percentage of completed and substantially completed projects.

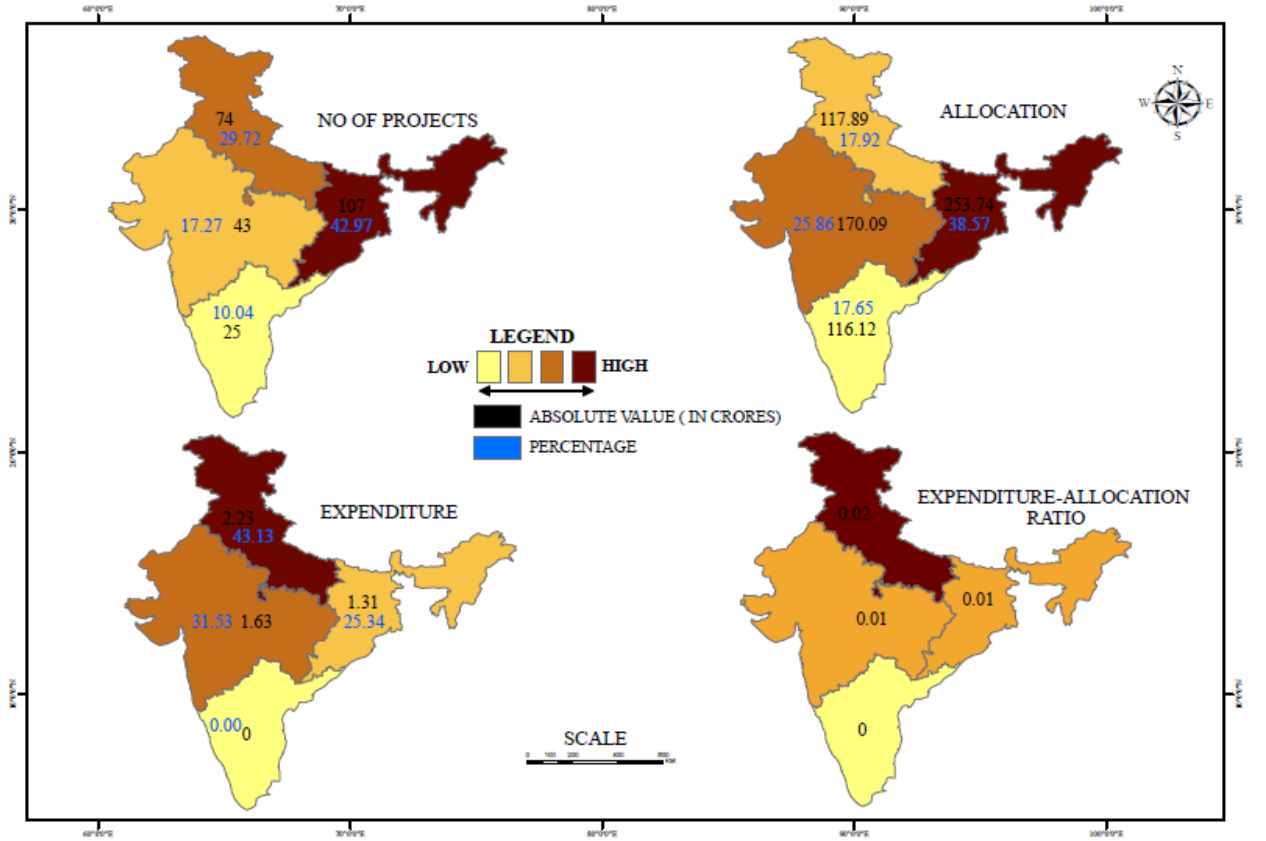
While animal husbandry and horticulture sector were dropped without incurring any expenditure, extension was abandoned after spending Rs. 1.93 crores amounting to 37.40 per cent of the total expenditure on abandoned projects. The remaining 62.40 per cent of total expenditure of Rs. 5.17 crores towards abandoned projects was on marketing and post harvest management, fisheries and non-farm sectors.

The expenditure on abandoned projects could have been ignored on the assumption that efforts were made to implement and then they were dropped due to some extraordinary reasons or circumstances. Ironically, seven of the eight abandoned projects had completely utilized the allocated budget. In fact, few projects had even overstretched the budget allocation. Out of these 7 projects two projects, viz., infrastructure/ponds of fisheries (subsector of fisheries) and settingup and strengthening marketing infrastructure (subsector of marketing and post harvest management) had an E:A ratio 2.00 and 1.21, respectively. The reasons need to be ascertained.

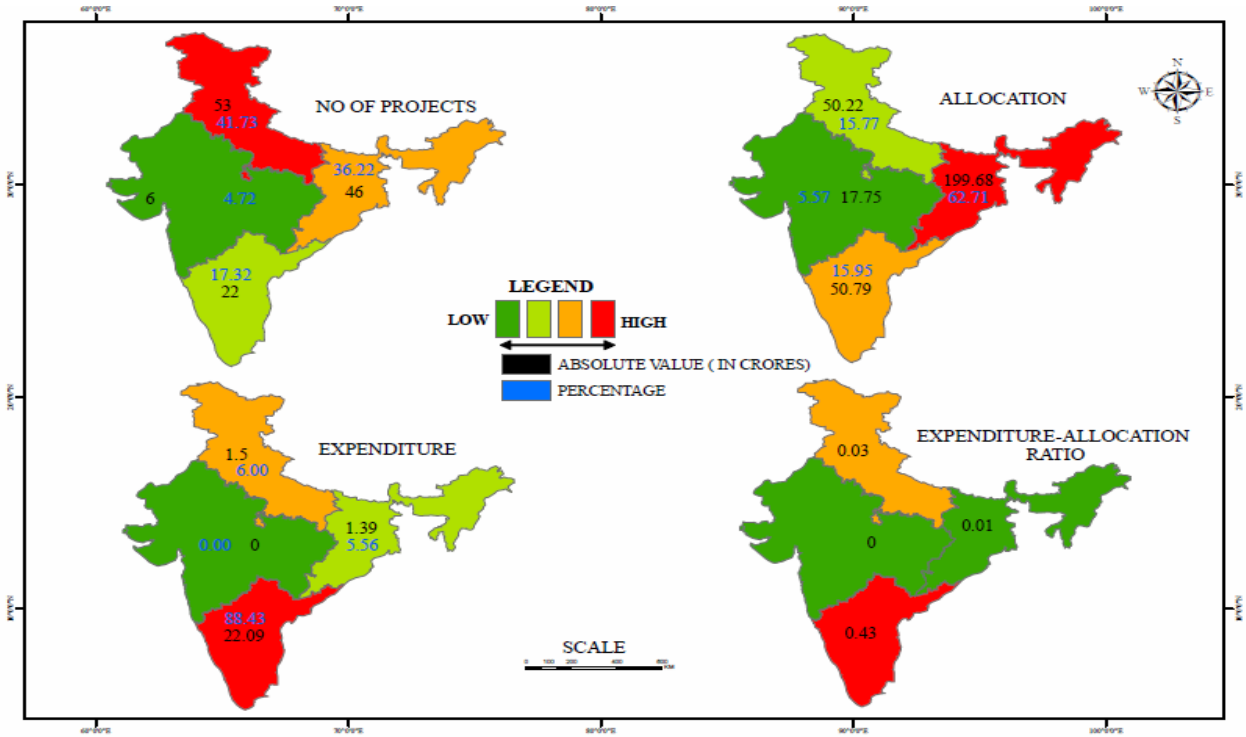
In the case of not implemented projects, all the projects were implemented in cooperatives and cooperation, non-farm activities and sericulture sectors although these sectors included abandoned projects. The not implemented projects also had expenditure of Rs. 24.99 crore spent on animal husbandry, horticulture, micro / minor irrigation, dairy development, research and organic farming projects. Almost all the expenditure, i.e., Rs. 22.09 crore was spent on organic farming before deciding it to keep out of implementation. Two projects under nursery and greenhouses sub sector of horticulture and one project of farm pond, a sub sector of micro / minor irrigation had shown expenditure equal to the allocation.

Projects of group 'in progress' were distributed in all the 20 sectors without exception. Out of 3125 projects which were in progress status, 578 projects had utilized all its allocated budget of Rs. 2154.03 crore. Out of the 3542 numbers of completed projects, only about 66 per cent (2380 numbers) of projects had used the entire allocation of Rs. 7563.64 crore. The remaining 1162 number of projects (33 per cent of completed projects) used only 76 per cent of budget allocated to them, i.e., Rs. 6769.81 crore. Thereby, there was an unspent amount of Rs. 1630.52 crore out of the budget allocated to projects that were completed by the end of 11th Five Year Plan under RKVY scheme.

Across the regions, East and North East India and North and North West India regions had highest proportion of abandoned and not implemented projects. Large number of completed and substantially completed projects was seen in East and North East India, West and Central India had highest number of ongoing or in-progress projects. The region-wise details on status of projects are given in Table 2.11c. Map 2.2 and Map 2.3 are also given for more visual clarity.



Map 2.2:Region-Wise Abandoned Projects under RKVY during 11th FYP



Map 2.3:Region-Wise 'Not Implemented' Projects under RKVY during 11th FYP

2.5. Infrastructure and Flagship Projects

The RKVY planned to address some problems of farming community like lack of cold storage facilities, difficult and untimely availability of transportation, proper marketing facilities to profitably sell agricultural produce, etc. The benefits of these projects will be enjoyed by group of farmers at village or district level rather than individual farmer. These types of projects were termed as infrastructure projects.

Infrastructure development for agriculture is the most thrust areas of RKVY programme in the country. For this purpose, an amount of Rs. 9582.06 crore was made available for 1584 infrastructure and asset creation projects. Out of this, Rs. 6725.41 crore was spent during the 11th Plan through RKVY budget. In addition to infrastructure projects, States took-up some projects which were special in nature. They were termed as Flagship projects. The projects may be special to that State or to the nation itself. The projects which were of State importance were called as State flagship projects and projects of national importance were called as National Flagship projects. An amount of Rs. 2536.07 crore was spent on 482 State Flagship projects from an allocation Rs. 3181.82 crore. For implementing of 84 National Flagship projects Rs. 2064.50 crore was allocated, out of which Rs. 1529.25 crore was utilized. Table 2.12 provides details of Infrastructure and Flagship projects. Projects which are reflected by the ratio are shown in Table 2.12. It leads to inference that infrastructure or asset creation projects were accorded relatively more importance than non-infrastructure projects. The importance was still higher when the infrastructure projects happened to be State Flagship projects. However, implementation of infrastructure and non-infrastructure projects that had National Flagship nature, by and large, had equal importance.

With the above facts, it may be noted that only 65 per cent (1027 numbers) out of 1584 infrastructure projects taken-up for implementation were completed. Another 42 projects were under substantially completed status. There were 35 incomplete projects in the category of infrastructure projects of State Flagship nature. The infrastructure project with National Flagship recorded 90 per cent completion rate. The details of sector-wise infrastructure projects are shown in Table 2.13.

All the 20 sectors had infrastructure projects and State Flagship projects. The National Flagship projects were not found in fertilizers and INM, non-farm and sericulture sectors. However, crop development had only one non-infrastructural National Flagship project, i.e., incentivizing paddy cultivation through SHGs in Southern region of Goa State. Hence, crop cultivation did not have any infrastructure oriented National Flagship programme. Five sectors which occupied top position according to expenditure had 36.80 per cent of the total infrastructure projects taken-up under RKVY scheme. Majority of these projects were normal in nature. These top five sectors had an allocation of Rs. 5148.85 crore to implement 583 infrastructure projects. The remaining 15 sectors had to cover 1.71 times more numbers of infrastructure projects, i.e., 1001 with only

86.10 per cent (Rs. 4433.21 crore) of fund allocated to top five sectors**.** Despite this, the expenditure allocation ratio of top five sectors remained higher at 0.72 as compared to other sectors.

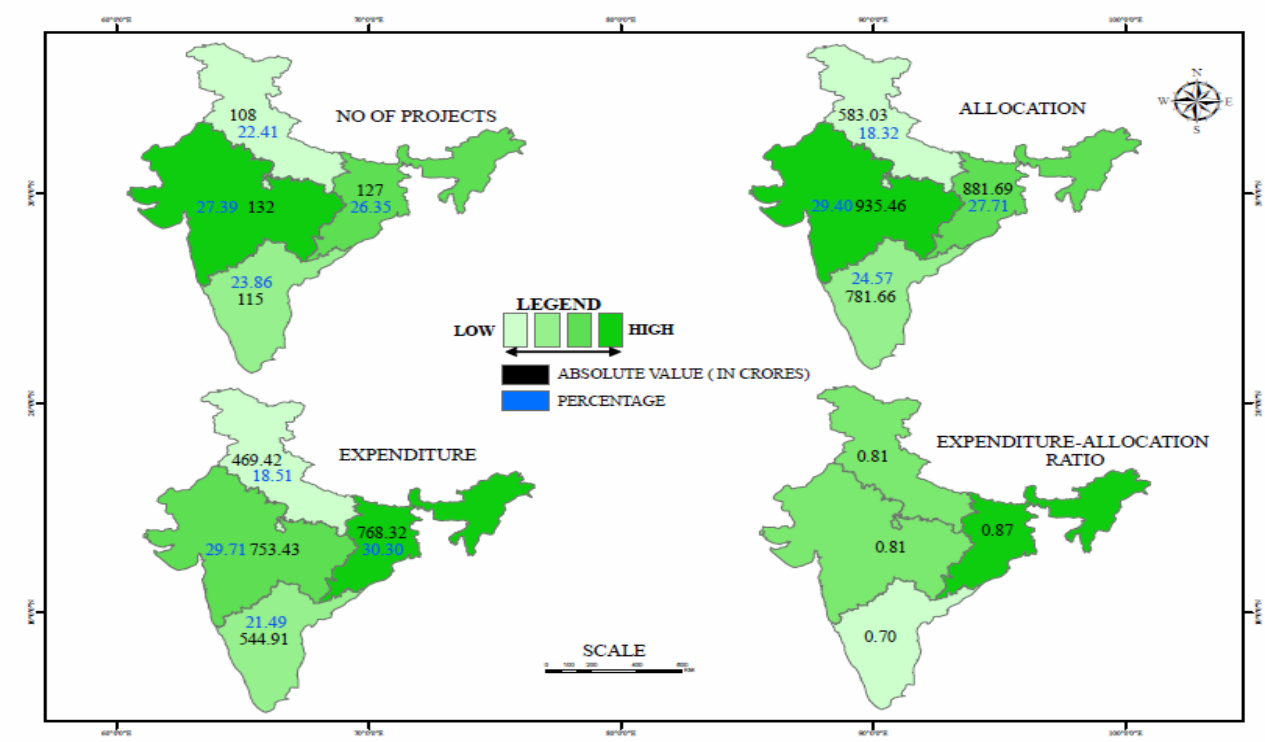
As far as Flagship, infrastructure and non-infrastructure projects are concerned, the top five sectors had almost half (49.79 per cent) of the 482 State Flagship projects and 28.56 per cent of National Flagship projects implemented all over the country. Share of animal husbandry and horticulture sectors in implementing number of State Flagship projects was highly conspicuous. Animal husbandry had 18.26 and horticulture had 15.98 proportions of the total State Flagship projects. In fact, these two sectors implemented highest number of projects as compared to any of the 20 sectors of RKVY programme. More than 60 per cent of the National Flagship projects were in natural resource management (25.00 per cent, fisheries (13.10 per cent), agricultural mechanization (11.90 per cent) and seed (10.71 per cent).

The details pertaining to sector-wise, Flagship wise infrastructure and non-infrastructure are shown in Tables 2.13a, 2.13b, and 2.13c. In addition to tables State Flagship programmes are given in the Map 2.4 and National flagship programmes are given in the Map 2.5. Details of infrastructure projects are given in Map 2.6 for more clarity.

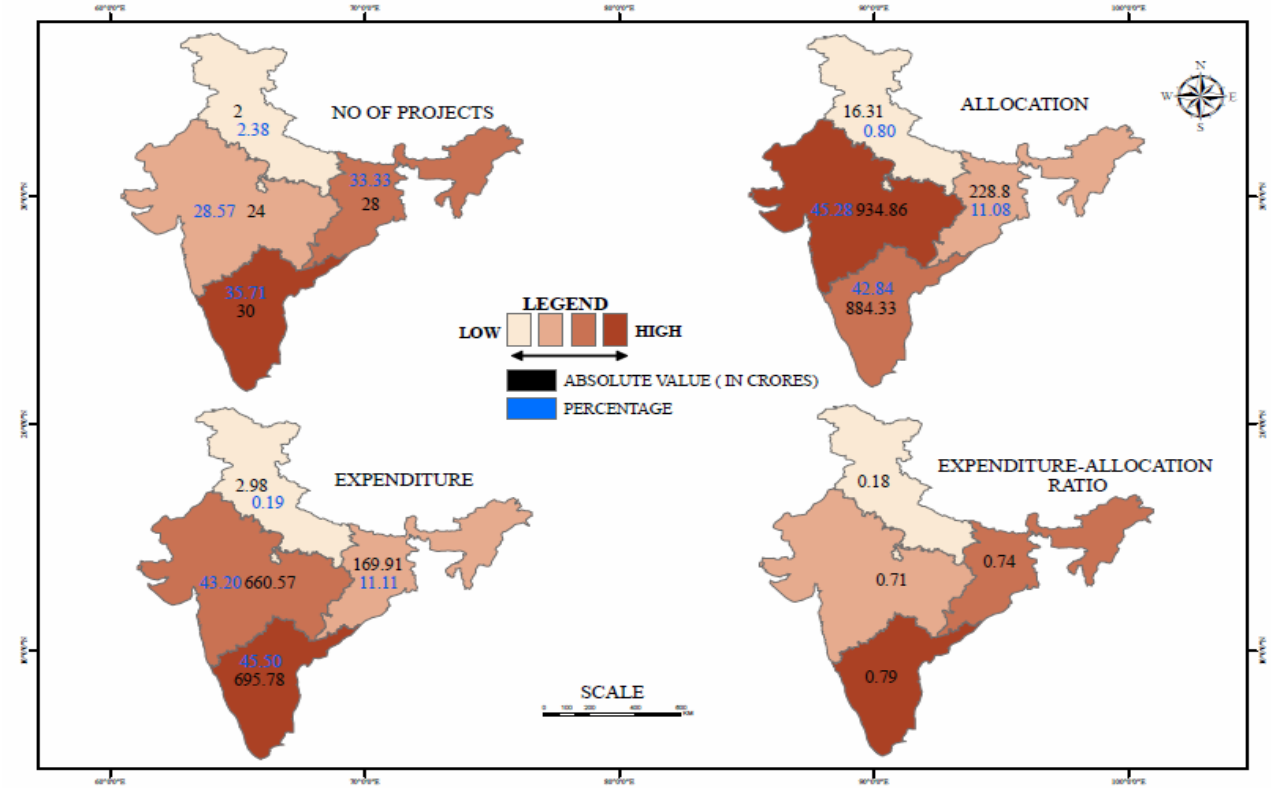
The performance of all the regions was impressive as measured by their total expenditure allocation ratio. The ratio was much higher than all India ratio of 0.61 in all the regions. In spite of highest total E:A ratio at 0.88, North and North West India could not be assessed as best performer with respect to implementation of infrastructure projects. First of all, it implemented lowest number of (only 115) infrastructure projects. Not only it was just lowest, the next higher performance by East and North East implemented 231 infrastructure projects that were two times more than the North and North West region. Further, the latter had implemented only 8 State Flagship projects and did not implement any National Flagship projects. Out of the 8 infrastructure projects, 5 were in Uttar Pradesh. Punjab and Himachal Pradesh of this region did not have any infrastructure flagship projects. Proper planning should have been done before taking allocations by this region for infrastructure projects. Agriculture Mechanisation, Dairy Development and Natural Resource Management were the sectors chosen by North and North West region for infrastructure projects (Table 2.14).

The second highest total E:A ratio of 0.86 was in East and North East India. Complete utilization of allocation in State and National Flagship projects was seen only in this region. However, 5 out of 12 States covered in this region did not have any infrastructure projects. Only two States, viz., Arunachal Pradesh and Orissa had National Flagship infrastructure projects in fisheries, marketing and horticulture sectors. The budget was also low and naturally it could manage to utilize entire allocated funds. Out of the 22 Flagship projects, 18 were taken-up in Orissa State alone.East and North East India had completed all Flagship infrastructure projects implemented and also had utilized entire budget allocation.

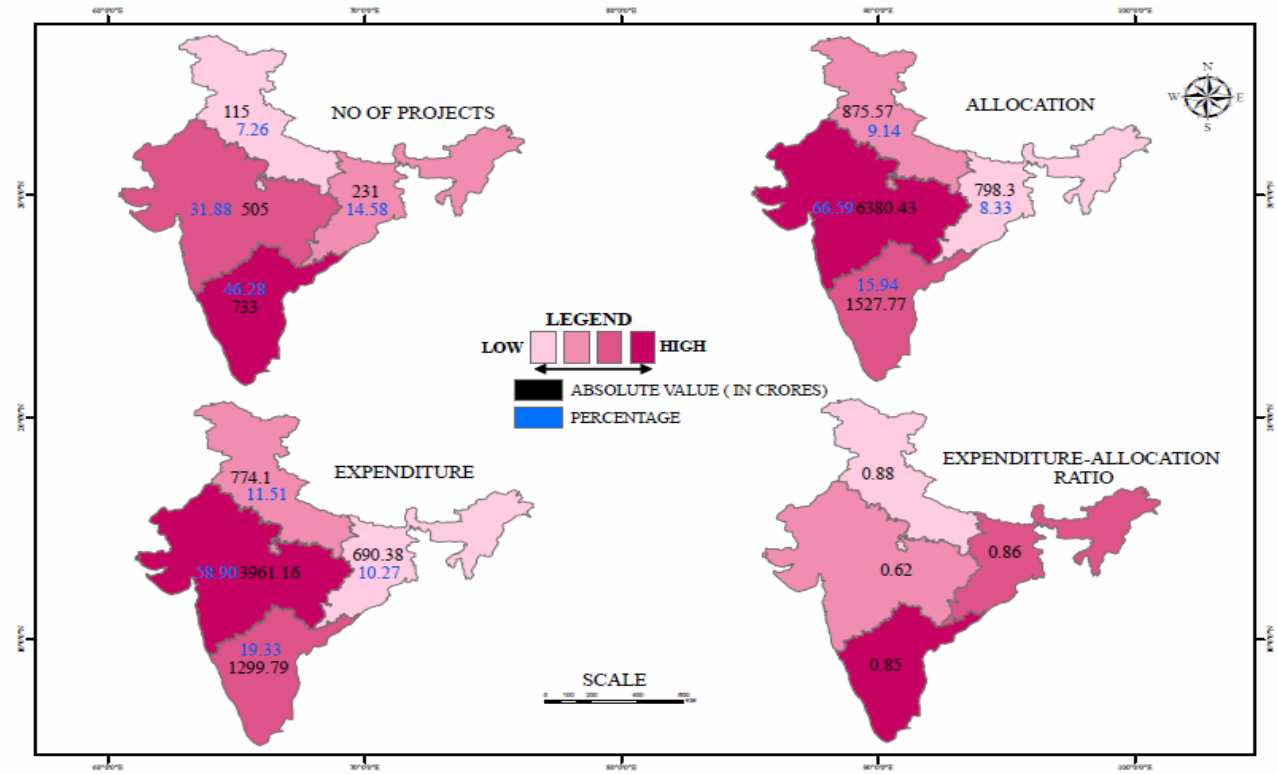
South India region stood third as per the E:A ratio of infrastructure projects is concerned. All the five States of this region had implemented infrastructure projects. Kerala accounted for more than 63 per cent (473 projects) of the total infrastructure projects implemented in this region. However, allocation of Rs. 383.65 crore to Kerala State for infrastructure projects was just Rs. 49 crore more than allocation to Karnataka, which had implemented 69 infrastructure projects. Thus, in comparison to number of projects implemented by Karnataka State, the budget allocation to Kerala State was much smaller. Still, the E:A ratio of Kerala (0.85) under infrastructure remained less than 0.89 attained by Karnataka State. There were 45 State and 13 National Flagship infrastructure projects in south India region. While Goa did not have any Flagship projects, Tamil Nadu had only 4 National Flagship projects and had no State Flagship projects. Kerala had completed all the 4 National Flagship infrastructure projects it had implemented. Almost every sector had infrastructure projects in this region.



Map 2.4:Region-Wise Infrastructure and Non-Infrastructure State Flagship Projects under RKVY during 11th FYP



Map 2.5: Region-Wise Infrastructure and Non-Infrastructure National Flagship Projects under RKVY during 11th FYP



Map 2.6:Region-Wise Infrastructure Projects under RKVY during 11th FYP

West and Central India region was the poor performer based on E:A ration of infrastructure projects. The ratio of 0.62 was much lower than all the other three regions. The reason for the same as it appears was excessive allocation of budget for this region**.** Out of the total budget allocation of Rs. 9582.05 crore for infrastructure projects, West and Central India alone was allocated more than two-third, but the region implemented not even 1/3rd of the infrastructure projects implemented all over the country. This excess allocation was only into two States, namely, Maharashtra and Rajasthan. But for these two States, West and Central India would have also achieved the E:A ratio of more than 0.8, i.e., at par with the other regions. Out of 90 State Flagship projects implemented in this region, 82 projects were located in Gujarat State alone. Only Gujarat and Maharashtra States implemented National Flagship projects. Again, out of 21 National Flagship projects, 12 were implemented in Gujarat. In this region also almost all the sectors had infrastructure projects.

2.6. Special Programmes

The special schemes were not a part of RKVY scheme in the beginning. Later, nine Special Programme/Schemes under RKVY were implemented as sub-schemes in the 11th Plan starting from 2010-11. The special programmes retained flexibility and authority with States. It is not clear whether these new schemes were provided with additional allocation. Over the years the allocation to these schemes was increasing denying larger outlays available for States under the programme. The data available indicated that about 20 per cent of overall RKVY fund was earmarked to special schemes. In the last two years it has exceeded 30 per cent of the total allocations. (Anonymous, 2013).

The name of the special schemes are: The Vegetable Initiative for Urban Cluster, Programme of Integrated Development of 60,999 Pulse Villages in rain fed Area, Extending Green Revolution to Eastern India, Special Programme on Oil Palm Area Expansion (OPAE), rain fed Area Development Programme (RADP), Accelerated Fodder Development Programme (AFDP), Initiative for Nutritional Security through Intensive Millets Promotion (INSIMP), Vidarbha Intensive Irrigation Development Programme (VIIDP) and Saffron Mission.

TABLES

Table 2.1: Discrepancies and Variations in Data collected from RDMIS Website

Data Source	No. of Projects	Allocation in Rs. crores	Release in Rs. crores	Expenditure in Rs. crores	State wise	Sector wise	Year wise
Circulars, Letters and Agenda@	N.A.	22874.14	22295.03	22072.38	A	N.A.	A
Consolidated	5768	39594.52	N.A.	N.A.	A	A.	A
Project-wise	7234	37919.42	N.A.	23030.52	A	A	NA

Note: 1.N.A. = Not Available; A = Available

@ State-wise allocation, release and expenditure data is provided in Appendix Table 2.1

Table 2.2: Sector-Wise Allocation and Expenditure incurred under RKVY during 11th FYP

Sector	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio	Expenditure per project in Rs. crores
Crop Development	520 (7.19)	4243.51 (11.19)	3201.47 (13.9)	0.75	6.16
Micro/Minor Irrigation	312 (4.31)	4572.21 (12.06)	3096.09 (13.44)	0.68	9.92
Horticulture	967 (13.36)	4967.64 (13.1)	2262.23 (9.82)	0.46	2.34
Animal Husbandry	1255 (17.35)	3941.08 (10.39)	2258.13 (9.8)	0.57	1.80
Agriculture Mechanization	324 (4.48)	3331.67 (8.79)	2232.9 (9.7)	0.67	6.89
Seed	363 (5.02)	2696.24 (7.11)	1878.81 (8.16)	0.70	5.18
Innovative Programmes	182 (2.52)	1888.18 (4.98)	1237.84 (5.37)	0.66	6.80
NRM	284 (3.93)	2167.05 (5.71)	1171.95 (5.09)	0.54	4.13
Marketing & PHM	359 (4.96)	1640.67 (4.33)	1050.97 (4.56)	0.64	2.93
Extension	392 (5.42)	1655.24 (4.37)	858.32 (3.73)	0.52	2.19
Fisheries	681 (9.41)	1268.33 (3.34)	764.32 (3.32)	0.60	1.12
Dairy Development	310 (4.29)	1498.01 (3.95)	716.14 (3.11)	0.48	2.31
Research	497 (6.87)	927.14 (2.45)	557.73 (2.42)	0.60	1.12
Organic Farming & Bio Fertilizer	187 (2.58)	781.77 (2.06)	501.18 (2.18)	0.64	2.68
Fertilizers& INM	146 (2.02)	777.80 (2.05)	492.89 (2.14)	0.63	3.38
Cooperatives &Cooperation	96 (1.33)	517.29 (1.36)	273.23 (1.19)	0.53	2.85
IPM	121 (1.67)	561.53 (1.48)	179.63 (0.78)	0.32	1.48
Non Farm Activities	105 (1.45)	227.35 (0.6)	141.76 (0.62)	0.62	1.35
Sericulture	96 (1.33)	140.49 (0.37)	86.31 (0.37)	0.61	0.90
IT	37 (0.51)	116.45 (0.31)	68.57 (0.3)	0.59	1.85
Total	**7234 (100)**	**37919.65 (100)**	**23030.47 (100)**	**0.61**	**3.18**

Note: 1.Figures in the parenthesis indicates percentage to total; E:A ratio- Expenditure Allocation ratio
2. NRM-Natural Resource Management; PHM-Post Harvest Management; INM-Integrated Nutrient Management; IPM- Integrated Pest Management and IT- Information Technology

Table 2.3: Region-Wise Allocation and Expenditure under RKVY during 11th FYP

Region	No. of Projects	Allocation Rs. crores	Expenditure Rs. crores	E:A Ratio
South India	1911 (26.42)	8117.75 (21.41)	5867.31 (25.48)	0.72
West and Central India	1689 (23.35)	13983.89 (36.89)	8376.40 (36.38)	0.60
East and North East India	2236 (30.90)	9098.08 (23.98)	5182.66 (22.49)	0.57
North and North Western India	1398 (19.33)	6719.88 (17.72)	3604.08 (15.65)	0.54
Total	**7234 (100.00)**	**37919.60 (100.00)**	**23030.45 (100.00)**	**0.61**

Note: Figures in the parenthesis indicates percentage to total; E:A ratio- Expenditure Allocation ratio

Table 2.4: Region-Wise Allocation and Expenditure under Crop Development

Region	No. of Projects	Allocation Rs. Crores	Expenditure Rs. Crores	E:A Ratio
South India	169 (32.50)	808.29 (19.05)	624.83 (19.52)	0.77
West and Central India	89 (17.12)	1354.29 (31.91)	1137.22 (35.52)	0.84
East and North East India	185 (35.58)	1737.41 (40.94)	1211.44 (37.84)	0.70
North and North Western India	77 (14.81)	343.52 (8.10)	227.99 (7.12)	0.66
Total	**520 (100.00)**	**4243.51 (100.00)**	**3201.47 (100.00)**	**0.75**

Note: Figures in the parenthesis indicates percentage to total

Table 2.5: Region-Wise Allocation and Expenditure under Micro and Minor Irrigation

Region	No. of Projects	Allocation Rs. crores	Expenditure Rs. crores	E:A Ratio
South India	50 (16.03)	185.53 (4.06)	97.13 (3.14)	0.52
West and Central India	93 (29.81)	2703.33 (59.13)	1877.20 (60.63)	0.69
East and North East India	78 (25.00)	554.73 (12.13)	346.55 (11.19)	0.62
North and North Western India	91 (29.17)	1128.62 (24.68)	775.20 (25.04)	0.69
Total	**312 (100.00)**	**4572.21 (100.00)**	**3096.09 (100.00)**	**0.68**

Note: Figures in the parenthesis indicates percentage to total

Table 2.6: Region-Wise Allocationand Expenditure under Horticulture Sector

Region	No. of Projects	Allocation Rs. crore	Expenditure Rs. crore	E:A Ratio
South India	184 (19.03)	1048.62 (21.11)	802.60 (35.48)	0.77
West and Central India	211 (21.82)	1382.45 (27.83)	827.16 (36.56)	0.60
East and North East India	312 (32.26)	818.37 (16.47)	352.17 (15.57)	0.43
North and North Western India	260 (26.89)	1718.19 (34.59)	280.30 (12.39)	0.16
Total	**967 (100.00)**	**4967.64 (100.00)**	**2262.23 (100.00)**	**0.46**

Note: Figures in the parenthesis indicates percentage to total

Table 2.7: Region-Wise Allocation and Expenditure under Animal Husbandry Sector

Region	No. of Projects	Allocation Rs. crores	Expenditure Rs. crores	E:A Ratio
South India	334 (26.61)	993.42 (25.21)	724.41 (32.08)	0.73
West and Central India	296 (23.59)	1457.55 (36.98)	742.57 (32.88)	0.51
East and North East India	357 (28.45)	898.14 (22.79)	449.34 (19.90)	0.50
North and North Western India	268 (21.35)	591.97 (15.02)	341.81 (15.14)	0.58
Total	**1255 (100.00)**	**3941.08 (100.00)**	**2258.13 (100.00)**	**0.57**

Note: Figures in the parenthesis indicates percentage to total

Table 2.8: Region-Wise Allocation and Expenditure under Farm Mechanization Sector

Region	No. of Projects	Allocation Rs. crores	Expenditure Rs. crores	E:A Ratio
South India	90 (27.78)	1257.34 (37.74)	847.48 (37.95)	0.67
West and Central India	79 (24.38)	830.29 (24.92)	542.21 (24.28)	0.65
East and North East India	97 (29.94)	1089.88 (32.71)	709.37 (31.78)	0.65
North and North Western India	58 (17.90)	154.16 (4.63)	133.84 (5.99)	0.87
Total	**324 (100.0)**	**3331.67 (100.00)**	**2232.90 (100.00)**	**0.67**

Note: Figures in the parenthesis indicates percentage to total

Table 2.9: Sectors Classification of Projects according to their Expenditure (in percent to total)

Sector	UptoRs. 1 crores			More than Rs. 1 Crore and less than 10 crores			More than Rs. 10 Crore and less than 25 crores			Above Rs. 25 Crores			Total		
	A	**E**	**E/A**	**A**	**E**	**E/A**	**A**	**E**	**E/A**	**A**	**E**	**E/A**	**A**	**E**	**E/A**
Crop Development	7.70	5.88	0.08	8.31	8.58	0.68	12.82	12.12	0.71	15.94	19.73	1.10	11.19	13.90	0.75
Micro and Minor Irrigation	3.68	3.45	0.10	4.95	3.95	0.52	12.34	9.43	0.57	26.15	23.87	0.81	12.06	13.44	0.68
Horticulture	22.63	13.86	0.07	13.05	11.33	0.57	13.68	13.51	0.74	4.61	6.13	1.18	13.10	9.82	0.46
Animal Husbandry	12.63	17.12	0.15	14.16	16.86	0.78	9.66	11.58	0.90	5.22	2.78	0.47	10.39	9.80	0.57
Agriculture Mechanisation	5.81	4.14	0.08	5.45	4.65	0.56	5.28	5.99	0.85	17.08	16.17	0.84	8.79	9.70	0.67
Seed	4.44	3.81	0.09	5.78	6.30	0.71	9.96	11.02	0.83	8.76	8.33	0.84	7.11	8.16	0.70
Innovative Programmes	3.29	1.87	0.06	2.42	2.36	0.64	5.40	3.57	0.50	8.70	9.03	0.92	4.98	5.37	0.66
NRM	3.05	3.92	0.14	9.93	5.65	0.37	6.54	7.27	0.83	3.20	3.53	0.98	5.71	5.09	0.54
Marketing and PHM	4.27	4.85	0.13	6.58	6.88	0.69	2.93	3.70	0.95	3.08	3.32	0.96	4.33	4.56	0.64
Extension	7.84	6.29	0.09	3.86	4.72	0.80	3.97	4.36	0.82	2.18	2.35	0.96	4.37	3.73	0.52
Fisheries	5.04	12.41	0.27	6.01	7.35	0.80	2.22	2.23	0.75	0.00	0.00	0.00	3.34	3.32	0.60
Dairy Development	5.61	3.92	0.08	5.61	5.64	0.66	4.38	4.52	0.77	0.58	0.33	0.51	3.95	3.11	0.48
Research	3.86	6.70	0.19	4.06	5.19	0.84	1.88	2.28	0.91	0.00	0.00	0.00	2.45	2.42	0.60
Organic Farming / Bio Fertilizer	1.51	2.98	0.22	3.46	2.98	0.56	1.33	1.99	1.12	1.64	1.61	0.87	2.06	2.18	0.64
Fertilisers And INM	1.50	1.59	0.12	2.19	2.74	0.82	2.25	1.53	0.51	2.25	2.11	0.83	2.05	2.14	0.63
Cooperatives and Cooperation	1.26	1.73	0.15	1.10	0.99	0.59	3.53	2.93	0.62	0.23	0.26	1.00	1.36	1.19	0.53
IPM	3.76	2.18	0.06	1.32	1.52	0.75	1.04	0.92	0.66	0.00	0.00	0.00	1.48	0.78	0.32
Non Farm Activities	0.96	1.34	0.15	0.75	1.00	0.87	0.23	0.29	0.94	0.40	0.45	1.00	0.60	0.62	0.62
Sericulture	0.63	1.53	0.27	0.67	0.85	0.83	0.15	0.20	1.00	0.00	0.00	0.00	0.37	0.37	0.61
IT	0.54	0.44	0.09	0.34	0.47	0.91	0.42	0.56	1.00	0.00	0.00	0.00	0.31	0.30	0.59
Grand total	**9144.47 (100.00)**	**1008.49 (100.00)**	**0.11**	**10719.93 (100.00)**	**7020.66 (100.00)**	**0.65**	**7357.14 (100.00)**	**5515.13 (100.00)**	**0.75**	**10698.07 (100.00)**	**9486.20 (100.00)**	**0.89**	**37919.61 (100.00)**	**23030.48 (100.00)**	**0.61**

Note: A: Allocation; E: Expenditure;

Table 2.10: Region-Wise Classification of Projects based on Expenditure during 11th FYP

Region	Per project value	No. of Projects	Allocation Rs. Crores	Expenditure Rs. Crores	E:A Ratio
South India	Less than Rs 1. crore	1234 (64.57)	1358.09 (16.73)	269.37 (4.59)	0.20
	Between Rs. 1 to 10 Crore	533 (27.90)	2329.70 (28.70)	1697.49 (28.93)	0.73
	Between Rs. 10 to 25 Crore	92 (4.81)	1846.26 (22.74)	1410.27 (24.04)	0.76
	Above Rs. 25 Crore	52 (2.72)	2583.70 (31.83)	2490.22 (42.44)	0.96
	Total	**1911 (100.00)**	**8117.76 (100.00)**	**5867.35 (100.00)**	**0.72**
West and central India	Less than Rs 1. crores	835 (49.44)	2735.21 (19.56)	210.63 (2.51)	0.08
	Between Rs. 1 to 10 Crores	657 (38.90)	4045.47 (28.93)	2255.96 (26.93)	0.56
	Between Rs. 10 to 25 Crores	137 (8.11)	2788.54 (19.94)	2128.92 (25.42)	0.76
	Above Rs. 25 Crores	60 (3.55)	4414.66 (31.57)	3780.88 (45.14)	0.86
	Total	**1689** (100.00)	**13983.88** (100.00)	**8376.39** (100.00)	**0.60**
East and North East India	Less than Rs 1. crores	1486 (66.46)	2774.46 (30.49)	314.85 (6.08)	0.11
	Between Rs. 1 Crore to 10 Crores	646 (28.89)	2717.14 (29.86)	1914.13 (36.93)	0.70
	Between Rs. 10 Crores to 25 Crores	66 (2.95)	1351.20 (14.85)	976.42 (18.84)	0.72
	Above Rs. 25 Crores	38 (1.70)	2255.29 (24.79)	1977.27 (38.15)	0.88
	Total	**2236** (100.00)	**9098.09** (100.00)	**5182.66** (100.00)	**0.57**
North and North Western India	Less than Rs 1. crores	923 (66.02)	2276.72 (33.88)	213.64 (5.93)	0.09
	Between Rs. 1 Crore to 10 Crores	382 (27.33)	1627.60 (24.23)	1153.09 (31.99)	0.71
	Between Rs. 10 Crores to 25 Crores	67 (4.79)	1371.13 (20.40)	999.53 (27.73)	0.73
	Above Rs. 25 Crores	26 (1.86)	1444.43 (21.49)	1237.82 (34.35)	0.86
	Total	**1398** (100.00)	**6719.88** (100.00)	**3604.08** (100.00)	**0.54**
Total	Less than Rs 1. crores	4478 (61.90)	9144.48 (24.12)	1008.49 (4.38)	0.11
	Between Rs. 1 Crore to 10 Crores	2218 (30.67)	10719.92 (28.27)	7020.66 (30.48)	0.65
	Between Rs. 10 Crores to 25 Crores	362 (5.00)	7357.13 (19.40)	5515.14 (23.95)	0.75
	Above Rs. 25 Crores	176 (2.43)	10698.08 (28.21)	9486.19 (41.19)	0.89
	Total	**7234** (100.00)	**37919.61** (100.00)	**23030.48** (100.00)	**0.61**

Note: Figures in the parenthesis indicates percentage to total

Table 2.11: Status-Wise Classification of Projects under RKVY during 11th FYP

Status	No. of Projects	Allocation Rs. Crores	Expenditure Rs. Crores	E:A Ratio
Abandoned	249 (3.44)	657.84 (1.73)	5.17 (0.02)	0.01
Not implemented	127 (1.76)	318.44 (0.84)	24.98 (0.11)	0.08
Approved and on-going	868 (12.00)	4696.38 (12.39)	208.13 (0.90)	0.04
In Progress	2197 (30.37)	16369.42 (43.17)	9092.02 (39.48)	0.56
Completed for previous year and going on for current year	49 (0.68)	476.54 (1.26)	195.25 (0.85)	0.41
Modified and on-going	11 (0.15)	12.20 (0.03)	0.00 (0.00)	0.00
Completed	3542 (48.96)	14333.44 (37.80)	12702.92 (55.16)	0.89
Substantially completed	191 (2.64)	1055.34 (2.78)	802.02 (3.48)	0.76
Grand Total	**7234 (100.00)**	**37919.60 (100.00)**	**23030.49 (100.00)**	**0.61**

Note: Figures in the parenthesis indicates percentage to total

Table 2.11a: Sector-Wise Abandoned and Not Implemented Projects

Sectors	Abandoned				Not implemented			
	No. of Projects	Allocation Rs. Crores	Expenditure Rs. Crores	E:A Ratio	No. of Projects	Allocation Rs. Crores	Expenditure Rs. Crores	E:A Ratio
Crop Development	14 (5.62)	32.03 (4.87)	0 (0)	0.00	9 (7.09)	19.78 (6.21)	0 (0)	0.00
Micro/Minor Irrigation	14 (5.62)	31.76 (4.83)	0 (0)	0.00	5 (3.94)	11.49 (3.61)	0.78 (3.12)	1.00
Horticulture	38 (15.27)	69.07 (10.49)	0 (0)	0.00	16 (12.61)	111.94 (35.14)	0.62 (2.48)	2.00
Animal Husbandry	50 (20.1)	144.27 (21.92)	0 (0)	0.00	38 (29.92)	39.59 (12.43)	0.51 (2.04)	3.00
Agriculture Mechanisation	8 (3.21)	25.73 (3.91)	0 (0)	0.00	1 (0.79)	0.24 (0.08)	0 (0)	4.00
Seed	12 (4.82)	29.66 (4.51)	0 (0)	0.00	3 (2.36)	7.15 (2.25)	0 (0)	5.00
Innovative Programmes	8 (3.21)	11.39 (1.73)	0 (0)	0.00	5 (3.94)	25.79 (8.1)	0 (0)	6.00
NRM	4 (1.61)	29.22 (4.44)	0 (0)	0.00	5 (3.94)	15.64 (4.91)	0 (0)	7.00
Marketing & PHM	18 (7.23)	31.9 (4.85)	1.13 (21.9)	0.04	3 (2.36)	10.72 (3.37)	0 (0)	8.00
Extension	21 (8.43)	77.92 (11.85)	1.93 (37.4)	0.02	3 (2.36)	7.10 (2.23)	0 (0)	9.00
Fisheries	18 (7.23)	37.41 (5.69)	1.10 (21.32)	0.03	10 (7.87)	11.61 (3.65)	0 (0)	10.00
Dairy Development	2 (0.8)	13.6 (2.07)	0 (0)	0.00	6 (4.72)	35.19 (11.05)	0.90 (3.6)	11.00
Research	3 (1.2)	2.03 (0.31)	0 (0)	0.00	15 (11.81)	10.41 (3.27)	0.09 (0.36)	12.00
Organic Farming & Bio Fertiliser	5 (2.01)	28.53 (4.34)	0 (0)	0.00	2 (1.57)	10.27 (3.22)	22.09 (88.4)	13.00
Fertilisers& INM	7 (2.81)	25.52 (3.88)	0 (0)	0.00	2 (1.57)	1.06 (0.33)	0 (0)	14.00
Cooperatives &Cooperation	3 (1.2)	4.98 (0.76)	0 (0)	0.00	0 (0)	0 (0)	0 (0)	15.00
IPM	8 (3.21)	17.00 (2.58)	0 (0)	0.00	3 (2.36)	0.42 (0.13)	0 (0)	16.00
Non Farm Activities	8 (3.21)	15.98 (2.43)	1.00 (19.38)	0.06	0 (0)	0 (0)	0 (0)	17.00
Sericulture	6 (2.41)	20.89 (3.18)	0 (0)	0.00	0 (0)	0 (0)	0 (0)	18.00
IT	2 (0.8)	8.94 (1.36)	0 (0)	0.00	1 (0.79)	0.06 (0.02)	0 (0)	19.00
Total	**249 (100)**	**657.83 (100)**	**5.16 (100)**	**0.01**	**127 (100)**	**318.46 (100)**	**24.99 (100)**	**0.08**

Note: 1.Figures in the parenthesis indicates percentage to total
2. NRM-Natural Resource Management; PHM-Post Harvest Management; INM-Integrated Nutrient Management; IPM- Integrated Pest Management and IT- Information Technology

Table 2.11b: Sector-Wise Projects On-Going / In-Progress and Completed under RKVY during 11th FYP

Sectors	On-going / in progress				Completed and substantially completed			
	No. of Projects	Allocation Rs. Crores	Expenditure Rs. Crores	E:A Ratio	No. of Projects	Allocation Rs. Crores	Expenditure Rs. Crores	E:A Ratio
Crop Development	255 (8.16)	2398.78 (11.13)	1719.01 (18.1)	0.72	242 (6.48)	1792.93 (11.65)	1482.46 (10.98)	0.83
Micro/Minor Irrigation	159 (5.09)	2809.37 (13.03)	1450.39 (15.28)	0.52	134 (3.59)	1719.58 (11.17)	1644.92 (12.18)	0.96
Horticulture	419 (13.41)	3405.27 (15.8)	1015.01 (10.69)	0.30	494 (13.25)	1381.35 (8.98)	1246.6 (9.23)	0.90
Animal Husbandry	526 (16.83)	2200.42 (10.21)	1042.32 (10.98)	0.47	641 (17.17)	1556.8 (10.13)	1215.30 (9.00)	0.78
Agriculture Mechanisation	159 (5.09)	1662.96 (7.72)	673.22 (7.09)	0.40	156 (4.18)	1642.73 (10.68)	1559.69 (11.55)	0.95
Seed	147 (4.7)	1209.33 (5.61)	618.71 (6.52)	0.51	201 (5.38)	1450.10 (9.42)	1260.10 (9.33)	0.87
Innovative Programmes	89 (2.85)	841.30 (3.9)	319.77 (3.37)	0.38	80 (2.14)	1009.70 (6.56)	918.07 (6.8)	0.91
NRM	110 (3.52)	1307.73 (6.07)	417.64 (4.4)	0.32	165 (4.42)	814.47 (5.29)	754.31 (5.59)	0.93
Marketing and PHM	144 (4.61)	919.64 (4.27)	454.32 (4.78)	0.49	194 (5.2)	678.42 (4.41)	595.52 (4.41)	0.88
Extension	170 (5.44)	955.92 (4.43)	352.24 (3.71)	0.37	198 (5.3)	614.31 (3.99)	504.15 (3.73)	0.82
Fisheries	211 (6.75)	655.98 (3.04)	222.21 (2.34)	0.34	442 (11.84)	563.33 (3.66)	541.01 (4.01)	0.96
Dairy Development	146 (4.67)	1060.83 (4.92)	381.22 (4.01)	0.36	156 (4.18)	388.39 (2.52)	334.01 (2.47)	0.86
Research	253 (8.1)	510.67 (2.37)	203.55 (2.14)	0.40	226 (6.05)	404.04 (2.63)	354.09 (2.62)	0.88
Organic Farming / Bio Fertiliser	75 (2.4)	318.02 (1.48)	129.07 (1.36)	0.41	105 (2.81)	424.94 (2.76)	350.02 (2.59)	0.82
Fertilisers and INM	55 (1.76)	410.38 (1.9)	198.39 (2.09)	0.48	82 (2.2)	340.84 (2.21)	294.51 (2.18)	0.86
Cooperatives and Cooperation	47 (1.5)	234.85 (1.09)	90.66 (0.95)	0.39	46 (1.23)	277.46 (1.8)	182.56 (1.35)	0.66
IPM	48 (1.54)	393.42 (1.83)	82.87 (0.87)	0.21	62 (1.66)	150.69 (0.98)	96.76 (0.72)	0.64
NFA	45 (1.44)	140.15 (0.65)	72.68 (0.77)	0.52	52 (1.39)	71.22 (0.46)	68.07 (0.5)	0.96
Sericulture	45 (1.44)	65.57 (0.3)	36.82 (0.39)	0.56	45 (1.21)	54.03 (0.35)	49.49 (0.37)	0.92
IT	22 (0.7)	53.97 (0.25)	15.29 (0.16)	0.28	12 (0.32)	53.48 (0.35)	53.28 (0.39)	1.00
Total	**3125 (100)**	**21554.56 (100)**	**9495.39 (100)**	**0.44**	**3733 (100)**	**15388.81 (100)**	**13504.92 (100)**	**0.88**

Note: 1.Figures in the parenthesis indicates percentage to total

2. NRM-Natural Resource Management; PHM-Post Harvest Management; INM-Integrated Nutrient Management; IPM- Integrated Pest Management and IT- Information Technology

3. on-going / in progress = Approved and on- going + in progress + completed for previous year and on-going for current year + modified and on going

Table 2.11c: Region-Wise Status of the Projects under RKVY during 11th FYP

Regions	Status	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio
South India	Abandoned	25 (10.04)	116.12 (17.65)	0 (0)	0
	Not t implemented	22 (17.32)	50.79 (15.95)	22.09 (88.43)	0.43
	Completed and substantially completed	985 (26.39)	3564.57 (23.16)	3219.61 (23.84)	0.9
	On-going // in progress	879 (28.13)	4386.27 (20.35)	2625.64 (27.65)	0.6
West and Central India	Abandoned	43 (17.27)	170.09 (25.86)	1.63 (31.53)	0.01
	Not implemented	6 (4.72)	17.75 (5.57)	0 (0)	0
	Completed and substantially completed	755 (20.23)	4251.08 (27.62)	3732.85 (27.64)	0.88
	On-going // in progress	885 (28.32)	9544.95 (44.28)	4641.91 (48.89)	0.49
East and North East India	Abandoned	107 (42.97)	253.74 (38.57)	1.31 (25.34)	0.01
	Not implemented	46 (36.22)	199.68 (62.71)	1.39 (5.56)	0.01
	Completed and substantially completed	1348 (36.11)	4864.09 (31.61)	4174.85 (30.91)	0.86
	On-going / in progress	735 (23.52)	3780.59 (17.54)	1005.12 (10.59)	0.27
North and North Western India	Abandoned	74 (29.72)	117.89 (17.92)	2.23 (43.13)	0.02
	Not implemented	53 (41.73)	50.22 (15.77)	1.50 (6.00)	0.03
	Completed and substantially completed	645 (17.28)	2709.04 (17.6)	2377.63 (17.61)	0.88
	On-going// in progress	626 (20.03)	3842.73 (17.83)	1222.73 (12.88)	0.32
All India	Abandoned	249 (100)	657.84 (100)	5.17 (100)	0.01
	Not implemented	127 (100)	318.44 (100)	24.98 (100)	0.08
	Completed and substantially completed	3733 (100)	15388.78 (100)	13504.94 (100)	0.88
	On-going // in progress	3125 (100)	21554.54 (100)	9495.40 (100)	0.44

Note: 1.Figures in the parenthesis indicates percentage to total
2. On-going / in progress = Approved and on- going + in progress + completed for previous year and on-going for current year + modified and on going

Table 2.12: Details of Infrastructure and Non- Infrastructure Flagship Projects under RKVY during 11th FYP

Flagship Projects	Infrastructure / Non-infrastructure Projects	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio
Normal	Infrastructure	1382 (87.25)	7124.59 (74.35)	4745.07 (70.55)	0.67
	Non-Infrastructure	5286 (93.56)	25548.67 (90.16)	14220.08 (87.21)	0.56
	Total Normal	**6668 (92.18)**	**32673.26 (86.16)**	**18965.15 (82.35)**	**0.58**
State	Infrastructure	165 (10.42)	1350.10 (14.09)	1167.61 (17.36)	0.86
	Non-Infrastructure	317 (5.61)	1831.72 (6.46)	1368.46 (8.39)	0.75
	Total State Flagship	**482 (6.66)**	**3181.82 (8.39)**	**2536.07 (11.01)**	**0.80**
National	Infrastructure	37 (2.34)	1107.37 (11.56)	812.72 (12.08)	0.73
	Non-Infrastructure	47 (0.83)	957.13 (3.38)	716.53 (4.39)	0.75
	Total National Flagship	**84 (1.16)**	**2064.50 (5.44)**	**1529.25 (6.64)**	**0.74**
Total	Infrastructure	1584 (21.90)	9582.06 (25.27)	6725.40 (29.20)	0.70
	Non-Infrastructure	5650 (78.10)	28337.52 (74.73)	16305.07 (70.80)	0.58
	Grand Total	**7234 (100)**	**37919.58 (100)**	**23030.47 (100.00)**	**0.61**

Note: Figures in the parenthesis indicates percentage to total

Table 2.13: Details of Sector-Wise Infrastructure Projects under RKVY during 11th FYP

Sectors	No. of Projects	Allocation Rs. crores	Expenditure Rs. crores	E:A Ratio
Crop Development	45 (2.84)	137.50 (1.43)	115.35 (1.72)	0.84
Micro/Minor Irrigation	112 (7.07)	2853.24 (29.78)	2139.45 (31.82)	0.75
Horticulture	121 (7.64)	481.64 (5.03)	331.61 (4.93)	0.69
Animal Husbandry	227 (14.33)	1003.32 (10.47)	568.79 (8.46)	0.57
Agriculture Mechanisation	78 (4.92)	673.15 (7.03)	533.22 (7.93)	0.79
Seed	89 (5.62)	483.64 (5.05)	407.08 (6.05)	0.84
Innovative Programmes	33 (2.08)	268.01 (2.8)	196.69 (2.92)	0.73
NRM	96 (6.06)	988.08 (10.3)	569.05 (8.46)	0.58
Marketing & PHM	124 (7.83)	693.31 (7.24)	554.31 (8.24)	0.80
Extension	61 (3.85)	234.39 (2.45)	209.27 (3.11)	0.89
Fisheries	173 (10.93)	317.48 (3.31)	210.01 (3.12)	0.66
Dairy Development	101 (6.38)	640.51 (6.68)	296.82 (4.41)	0.46
Research	184 (11.62)	269.82 (2.82)	237.81 (3.54)	0.88
Organic Farming & Bio Fertiliser	41 (2.59)	75.03 (0.78)	32.28 (0.48)	0.43
Fertilisers & INM	31 (1.96)	142.07 (1.48)	102.89 (1.53)	0.72
Cooperatives &Cooperation	11 (0.69)	177.75 (1.86)	112.33 (1.67)	0.63
IPM	20 (1.26)	46.98 (0.49)	32.90 (0.49)	0.70
Non Farm Activities	20 (1.26)	36.72 (0.38)	18.73 (0.28)	0.51
Sericulture	11 (0.69)	39.72 (0.41)	38.37 (0.57)	0.97
IT	6 (0.38)	19.70 (0.21)	18.45 (0.27)	0.94
Total	**1584 (100.00)**	**9582.06 (100.00)**	**6725.41 (100.00)**	**0.70**

Note: Figures in the parenthesis indicates percentage to total

NRM-Natural Resource Management; PHM-Post Harvest Management; INM-Integrated Nutrient Management; IPM- Integrated Pest Management and IT- Information Technology

Table 2.13a: State Flagship Infrastructure and Non-Infrastructure Projects under RKVY during 11th FYP

Sectors	State flagship infrastructure projects				State flagship non- infrastructure projects			
	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio
Crop Development	9 (5.45)	49.95 (3.7)	39.96 (3.42)	0.80	17 (5.36)	98.49 (5.38)	74.38 (5.44)	0.76
Micro/Minor Irrigation	6 (3.64)	491.03 (36.37)	430.84 (36.89)	0.88	12 (3.79)	69.86 (3.81)	13.46 (0.98)	0.19
Horticulture	13 (7.88)	45.95 (3.4)	48.66 (4.17)	1.06	64 (20.18)	257.48 (14.07)	167.58 (12.24)	0.65
Animal Husbandry	27 (16.37)	124.61 (9.23)	111.72 (9.57)	0.90	61 (19.24)	198.36 (10.83)	137.89 (10.08)	0.70
Agriculture Mechanisation	8 (4.85)	80.85 (5.99)	67.03 (5.74)	0.83	23 (7.26)	289.62 (15.81)	265.99 (19.44)	0.92
Seed	12 (7.27)	17.56 (1.3)	17.2 (1.47)	0.98	14 (4.42)	151.24 (8.26)	117.24 (8.57)	0.78
Innovative Programmes	4 (2.42)	27.28 (2.02)	14.31 (1.23)	0.52	8 (2.52)	60.51 (3.3)	59.27 (4.33)	0.98
NRM	15 (9.09)	187.27 (13.87)	155.03 (13.28)	0.83	12 (3.79)	113.19 (6.18)	97.78 (7.15)	0.86
Marketing & PHM	7 (4.24)	31.75 (2.35)	27.45 (2.35)	0.86	16 (5.05)	55.31 (3.02)	33.54 (2.45)	0.61
Extension	7 (4.24)	60.08 (4.45)	59.78 (5.12)	1.00	21 (6.62)	147.76 (8.07)	121.79 (8.9)	0.82
Fisheries	12 (7.27)	24.23 (1.79)	24.23 (2.08)	1.00	11 (3.47)	42.4 (2.31)	39.3 (2.87)	0.93
Dairy Development	13 (7.88)	85.57 (6.34)	85.57 (7.33)	1.00	6 (1.89)	49.5 (2.7)	26.15 (1.91)	0.53
Research	12 (7.27)	55.04 (4.08)	53.38 (4.57)	0.97	9 (2.84)	18.56 (1.01)	17.72 (1.29)	0.95
Organic Farming & Bio Fertiliser	6 (3.64)	14.63 (1.08)	8.13 (0.7)	0.56	20 (6.31)	137.42 (7.5)	98.44 (7.19)	0.72
Fertilisers & INM	2 (1.21)	6.39 (0.47)	6.39 (0.55)	1.00	4 (1.26)	23.78 (1.3)	17.83 (1.3)	0.75
Cooperatives &Cooperation	1 (0.61)	6.6 (0.49)	0 (0)	0.00	2 (0.63)	4.06 (0.22)	4.06 (0.3)	1.00
IPM	7 (4.24)	19.53 (1.45)	11.14 (0.95)	0.57	12 (3.79)	74.95 (4.09)	52.16 (3.81)	0.70
Non Farm Activities	3 (1.82)	21.55 (1.6)	6.64 (0.57)	0.31	4 (1.26)	18.35 (1)	3 (0.22)	0.16
Sericulture	1 (0.61)	0.23 (0.02)	0.15 (0.01)	0.65	0 (0)	0 (0)	0 (0)	0.00
IT	0 (0)	0 (0)	0 (0)	0.00	1 (0.32)	20.88 (1.14)	20.88 (1.53)	1.00
Total	**165 (100)**	**1350.1 (100)**	**1167.61 (100)**	**0.86**	**317 (100)**	**1831.72 (100)**	**1368.46 (100)**	**0.75**

Note: Figures in the parenthesis indicates percentage to total
NRM-Natural Resource Management; PHM-Post Harvest Management; INM-Integrated Nutrient Management;
IPM- Integrated Pest Management and IT- Information Technology

Table 2.13b: National Flagship Infrastructure and Non-Infrastructure Projects under RKVYduring 11th FYP

Sectors	National flagship infrastructure projects				National flagship non- infrastructure projects			
	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio
Crop Development	0 (0)	0 (0)	0 (0)	0.00	1 (2.13)	0.31 (0.03)	0.19 (0.03)	0.61
Micro/Minor Irrigation	4 (10.81)	466.4 (42.12)	364.17 (44.81)	0.78	0 (0)	0 (0)	0 (0)	0.00
Horticulture	2 (5.41)	22.14 (2)	26.38 (3.25)	1.19	3 (6.38)	101.99 (10.66)	65.52 (9.14)	0.64
Animal Husbandry	1 (2.7)	204 (18.41)	35.55 (4.37)	0.17	3 (6.38)	64.36 (6.72)	83.42 (11.64)	1.30
Agriculture Mechanisation	4 (10.81)	32.53 (2.94)	31.53 (3.88)	0.97	6 (12.77)	192.98 (20.16)	124.75 (17.41)	0.65
Seed	1 (2.7)	43.63 (3.94)	40.42 (4.97)	0.93	8 (17.02)	444.3 (46.43)	361.63 (50.47)	0.81
Innovative Programmes	3 (8.11)	86.11 (7.78)	69.21 (8.52)	0.80	3 (6.38)	29.97 (3.13)	29.97 (4.18)	1.00
NRM	10 (27.03)	132.88 (12)	130.84 (16.1)	0.98	11 (23.4)	76.64 (8.01)	30.03 (4.19)	0.39
Marketing & PHM	5 (13.51)	80.4 (7.26)	78.84 (9.7)	0.98	0 (0)	0 (0)	0 (0)	0.00
Extension	1 (2.7)	25 (2.26)	25 (3.08)	1.00	0 (0)	0(0)	0(0)	0.00
Fisheries	4 (10.82)	3.45 (0.31)	3.45 (0.42)	1.00	7 (14.89)	9.81 (1.02)	6.48 (0.9)	0.66
Dairy Development	0 (0)	0 (0)	0 (0)	0.00	1 (2.13)	20 (2.09)	6.5 (0.91)	0.33
Research	1 (2.7)	5 (0.45)	1.5 (0.18)	0.30	0 (0)	0 (0)	0 (0)	0.00
Organic Farming & Bio Fertiliser	0 (0)	0 (0)	0 (0)	0.00	2 (4.26)	11.71 (1.22)	2.98 (0.42)	0.25
Fertilisers & INM	0(0)	0(0)	0(0)	0.00	0(0)	0(0)	0(0)	0.00
Cooperatives &Cooperation	0 (0)	0 (0)	0 (0)	0.00	1 (2.13)	0.06 (0.01)	0.06 (0.01)	1.00
IPM	1 (2.7)	5.83 (0.53)	5.83 (0.72)	1.00	0 (0)	0 (0)	0 (0)	0.00
Non Farm Activities	0 (0)	0 (0)	0 (0)	0.00	0 (0)	0 (0)	0 (0)	0.00
Sericulture	0 (0)	0 (0)	0 (0)	0.00	0 (0)	0 (0)	0 (0)	0.00
IT	0 (0)	0 (0)	0 (0)	0.00	1 (2.13)	5 (0.52)	5 (0.7)	1.00
Total	**37(100)**	**1107.37(100)**	**812.72(100)**	**0.73**	**47(100)**	**957.13(100)**	**716.53(100)**	**0.75**

Note: Figures in the parenthesis indicates percentage to total
NRM-Natural Resource Management; PHM-Post Harvest Management; INM-Integrated Nutrient Management; IPM- Integrated Pest Management and IT- Information Technology

Table 2.13c: Overall Infrastructure and Non-Infrastructure Projects under RKVY during 11th FYP

Sectors	Total infrastructure projects				Total non- infrastructure projects			
	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio
Crop Development	45 (2.84)	137.5 (1.43)	115.35 (1.72)	0.84	474 (8.4)	4105.7 (14.41)	3085.92 (18.82)	0.75
Micro/Minor Irrigation	112 (7.07)	2853.24 (29.78)	2139.46 (31.82)	0.75	204 (3.62)	2185.37 (7.67)	1320.8 (8.05)	0.60
Horticulture	121 (7.64)	481.64 (5.03)	331.6 (4.93)	0.69	845 (14.97)	4406.14 (15.47)	1891.48 (11.53)	0.43
Animal Husbandry	227 (14.33)	1003.32 (10.47)	568.79 (8.46)	0.57	1026 (18.19)	3077.4 (10.8)	1641.47 (10.01)	0.53
Agriculture Mechanisation	78 (4.92)	673.15 (7.03)	533.22 (7.93)	0.79	244 (4.33)	2498.06 (8.77)	1606.47 (9.79)	0.64
Seed	89 (5.62)	483.64 (5.05)	407.08 (6.05)	0.84	267 (4.73)	1811.93 (6.36)	1150.52 (7.01)	0.63
Innovative Programmes	33 (2.08)	268.01 (2.8)	196.69 (2.92)	0.73	149 (2.64)	1676.3 (5.88)	1080.39 (6.59)	0.64
NRM	96 (6.06)	988.07 (10.3)	569.05 (8.46)	0.58	187 (3.32)	1235.2 (4.34)	703.7(4.29)	0.57
Marketing & PHM	124 (7.83)	693.31 (7.24)	554.31 (8.24)	0.80	240 (4.26)	1027.76 (3.61)	575.5 (3.51)	0.56
Extension	61 (3.85)	234.39 (2.45)	209.27 (3.11)	0.89	332 (5.89)	1445.85 (5.08)	674.05 (4.11)	0.47
Fisheries	173 (10.93)	317.49 (3.31)	210.02 (3.12)	0.66	505 (8.95)	944.48 (3.32)	551.28 (3.36)	0.58
Dairy Development	101 (6.38)	640.51 (6.68)	296.82 (4.41)	0.46	208 (3.69)	837.5 (2.94)	412.82 (2.52)	0.49
Research	184 (11.62)	269.82 (2.82)	237.81 (3.54)	0.88	314 (5.57)	662.32 (2.32)	321.42 (1.96)	0.49
Organic Farming & Bio Fertiliser	41 (2.59)	75.03 (0.78)	32.28 (0.48)	0.43	144 (2.55)	695.03 (2.44)	465.93 (2.84)	0.67
Fertilisers & INM	31 (1.96)	142.07 (1.48)	102.88 (1.53)	0.72	115 (2.04)	635.72 (2.23)	390.01 (2.38)	0.61
Cooperatives &Cooperation	11 (0.69)	177.75 (1.86)	112.33 (1.67)	0.63	84 (1.49)	339.48 (1.19)	160.84 (0.98)	0.47
IPM	20 (1.26)	46.98 (0.49)	32.9 (0.49)	0.70	102 (1.81)	520.38 (1.83)	152.56 (0.93)	0.29
Non Farm Activities	20 (1.26)	36.72 (0.38)	18.72 (0.28)	0.51	85 (1.51)	190.63 (0.67)	123.03 (0.75)	0.65
Sericulture	11 (0.69)	39.72 (0.41)	38.37 (0.57)	0.97	85 (1.51)	100.77 (0.35)	47.95 (0.29)	0.48
IT	6 (0.38)	19.7 (0.21)	18.45 (0.27)	0.94	30 (0.53)	91.74 (0.32)	45.12 (0.28)	0.49
Total	**1584 (100)**	**9582.06 (100)**	**6725.4 (100)**	**0.70**	**5640 (100)**	**28487.76 (100)**	**16401.26 (100)**	**0.58**

Note: Figures in the parenthesis indicates percentage to total
NRM-Natural Resource Management; PHM-Post Harvest Management; INM-Integrated Nutrient Management; IPM- Integrated Pest Management and IT- Information Technology

Table 2.14: Region-Wise Infrastructure Projects under RKVY during 11th FYP

Region	Flagship type	No. of Projects	Allocation in Rs. Crores	Expenditure in Rs. Crores	E:A Ratio
1	2	3	4	5	9
South India	Normal	675 (48.84)	1052.74 (14.78)	879.12 (18.53)	0.84
	State Flagship	45 (27.27)	286.49 (21.22)	252.50 (21.63)	0.88
	National Flagship	13 (35.14)	188.54 (17.03)	168.17 (20.69)	0.89
	TOTAL	**733 (46.28)**	**1527.77 (15.94)**	**1299.79 (19.33)**	**0.85**
West and central India	Normal	394 (28.51)	4722.14 (66.28)	2719.49 (57.31)	0.58
	State Flagship	90 (54.55)	745.58 (55.22)	603.25 (51.67)	0.81
	National Flagship	21 (56.76)	912.71 (82.42)	638.42 (78.56)	0.70
	TOTAL	**505 (31.88)**	**6380.43 (66.59)**	**3961.16 (58.90)**	**0.62**
East and North East India	Normal	206 (14.91)	576.94 (8.10)	471.79 (9.94)	0.82
	State Flagship	22 (13.33)	215.24 (15.94)	212.47 (18.20)	0.99
	National Flagship	3 (8.11)	6.11 (0.55)	6.11 (0.75)	1.00
	TOTAL	**231 (14.58)**	**798.29 (8.33)**	**690.37 (10.27)**	**0.86**
North and and North west India	Normal	107 (7.74)	772.77 (10.85)	674.69 (14.22)	0.87
	State Flagship	8 (4.85)	102.79 (7.61)	99.39 (8.51)	0.97
	National Flagship	0 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00
	TOTAL	**115 (7.26)**	**875.56 (9.14)**	**774.08 (11.51)**	**0.88**
All India	Normal	1382 (100.00)	7124.59 (100.00)	4745.09 (100.00)	0.67
	State Flagship	165 (100.00)	1350.10 (100.00)	1167.61 (100.00)	0.86
	National Flagship	37 (100.00)	1107.36 (100.00)	812.70 (100.00)	0.73
	TOTAL	**1584 (100.00)**	**9582.05 (100.00)**	**6725.40 (100.00)**	**0.70**

Note: Figures in the parenthesis indicates percentage to total

CHAPTER III

Assessment of Agricultural Performance during the Recent Planned Period

3.1. Introduction

This chapter focuses on the performance of agriculture and allied sectors during the 9th, 10th and 11th Five Year Plans (FYP). The analysis of this chapter is presented in five distinct sections. The first section analyses the growth of the agricultural sector in relation to the total economy and the economic shifts experienced in India from the liberalization of the economy in the early 1990's. The second section discusses Gross Capital Formation (GCF) and Investment share in relation to GCF/Investment in the overall economy. This section also discusses total outlays of the State s and how expenditure has changed with the advent of the RKVY program. The third section discusses area, production and yield of principal crops in India, and how cropping patterns have changed from the 10th Plan to the 11th Plan with the advent of RKVY initiatives. There is also a discussion on the increase of intensive agriculture and overall fertilizer usage especially in comparison to changes in irrigation practices. The fourth section analyses the performance of agriculture by regions. The effect RKVY programme has had on high value agriculture production and its effects on poverty are also discussed under this section. There is also discussion on unique traits in the regional rural expenditure. The fifth and final section examines the correlation between year-wise per cent changes in RKVY expenditure and year-wise percent change in investment, irrigation, fertilizer use, area, production and yield of food grain and area and production of horticultural crops.

3.2. Growth of Agriculture and Allied Sectors in India from 1997-2012

Discussing the agriculture performance of India during the 9th, 10th and 11th Plan is to witness the structural shift the country has undergone away from its agrarian roots and towards manufacturing and service based economy due to the liberalization of the Indian economy in the 1990's. The immediate aftermath of a newly modernized Indian economy sees a distinct pattern of volatile growth in Indian agriculture. Figure 3.1 and Table 3.1 depict the growth rate of the Indian economy, the agricultural sector and allied sectors at constant 2004-05 prices.

The Figure 3.1 clearly depicts the large booms and busts experienced in the agriculture sector growth in comparison to the relatively linear pattern of increasing growth rate experienced in the overall economy. The data for the years 2002-03 and 2003-04 are illustrative examples of this phenomena, where we see huge losses (-8.1 per cent) and subsequent large gains (10.8 per cent) in the following year. In the case of the overall economy, there has been a much smoother growth pattern with 4.0 per cent growth rate in 2002-03 to 8.1 per cent in 2003-04. It is apparent

that the volatility of Indian agriculture is perhaps due to the inherent volatility of monsoon seasons.

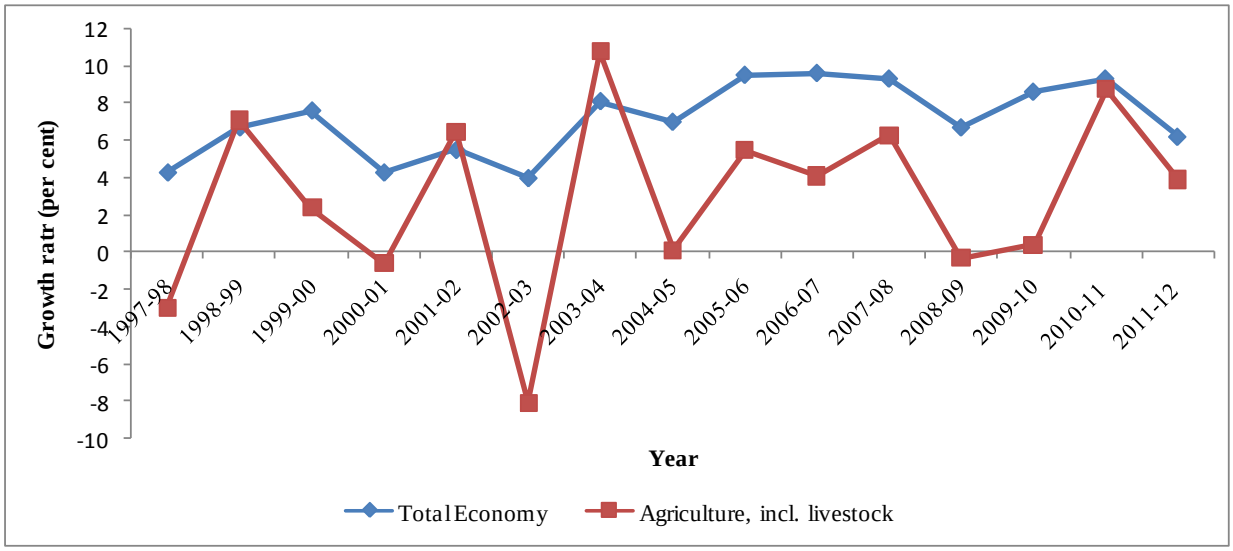


Figure 3.1: Growth Rate of Total Economy and Agriculture Sector

Besides the larger volatility in agriculture growth rates during the Plan period, we see a constant decrease in contribution of agriculture sector to the total GDP during the last three Five Year Plans. The GDP share of the sector has declined from 19.7 per cent in 9th Plan to 16.0 per cent in 10th Plan and further to 12.9 per cent in the 11th Plan (Table 3.2). Even the year-wise contribution to GDP has a relatively linear trend, with the year ending of 11th Plan (2011-12) recording the lowest during the last three plans. It is not so surprising to see some of the volatility experienced in the agricultural sector playing out against a background of structural change in the overall economy.

Against this backdrop of volatility, the RKVY project was initiated in the 11th Plan (2007) in order to achieve an overall growth rate of 4 per cent in the agricultural sector. Referring to Table 1, we can see the final average agricultural growth rate for the years 2007-2012 is 3.8 per cent, just under the targeted growth rate of the RKVY project. However, individual years witnessed extreme high growth rates (6.3 per cent and 8.8 per cent growth in 2007-08 and 2010-11, respectively) and extreme lows as well (-0.03 per cent and 0.4 per cent growth in 2008-09 and 2009-10, respectively). As such, it is hard to argue that the RKVY project has in anyway smoothened out the previous years of volatility in the agriculture sector.

Expenditures through RKVY have had an extremely large effect on the total expenditure on almost all facets of the agriculture sector. Figure 3.2 describes the per cent change of investment from 10th Plan to the 11th Plan (when RKVY was put into effect). Here we see that historical issues in the agriculture sector are being targeted (such as post harvest loss and water

scarcity/irrigation etc.). Even so the most sectors have had over 50 per cent increases in investment compared to the 10th Plan.

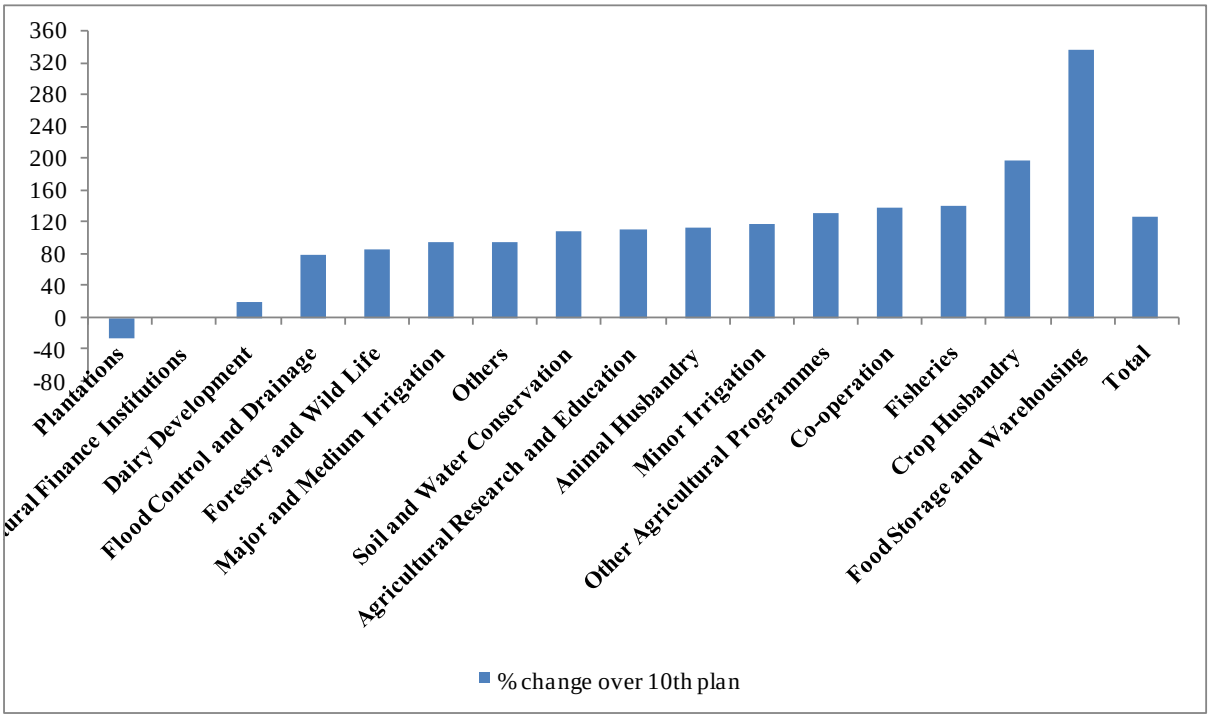


Figure 3.2: Per cent Change in Expenditure over 10th Plan by Sector

3.3. Public and Private Investment in the Agricultural Sector

One of the prime reasons for the low growth of agriculture sector has been low public investment in the sector. This can be understood by analyzing the pattern of public and private sectors investment in agriculture. Figure 3.3 and Table 3.3 and 3.4 show the percentage share of public and private investment in Gross Capital Formation (GCF) in both the agriculture and fishery sector.

Here, we see that the private sector makes up much of the overall contribution of GCF in the agriculture sector, at a rate that averages around 80 percentile marks. Conversely, Government investment accounts for 18-20 per cent of GCF in agriculture from 1997-2012. RKVY was initiated in the 11th Plan (2007-2012) and Government investment over the first four years averaged at 17.7 per cent (18.3 per cent including livestock) which is commensurate with previous plan's average percentage share. However, looking at GCF share between public and private sectors does not describe shift taking place away from agriculture to other sectors. Table 3.5 depicts the share of GCF/Investment of the agriculture sector to total economy GCF/Investment.

We can clearly see that total growth in GCF/Investment to GDP in the economy has outpaced GCF/Investment to GDP in agriculture and allied sectors. This is expected within a paradigm of India as a changing economy, where investment into other sectors of the economy provides higher returns for both public and private investors. Interestingly, during the 11th Plan, average GCF/Investment in the total economy was more than double the share of GCF/Investment in the agriculture sectors but the difference between the agriculture sector and the total economy has shrunk in comparison to the average GCF/Investment ratio of the 9th and 10th Plans.

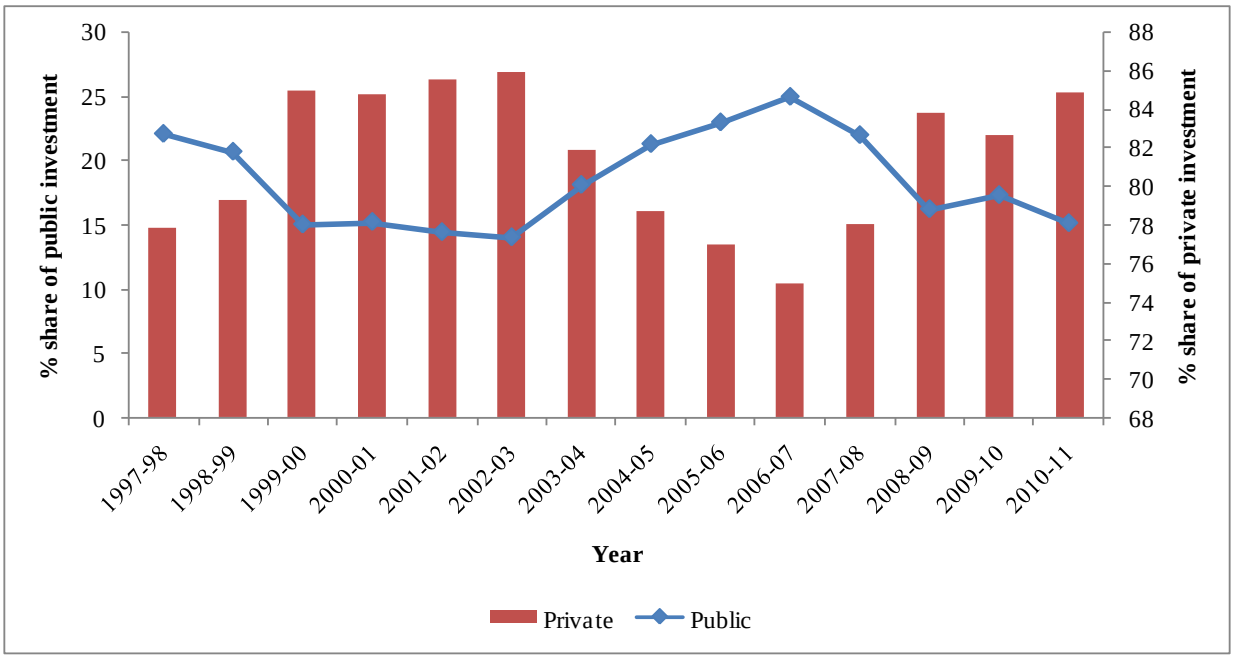


Figure 3.3: Per cent Share of Public and Private Expenditure of GCF

It is likely that this reduction in the GCF/Investment gap between agriculture sector and the total economy seen in the 11th Plan is due to the advent of the RKVY program. While its gains aren't shown in Table 3.3, we can see that for the years 2008-2012, GCF/Investment in agriculture has increased substantially during the period of investment of RKVY. We can see the effect of increased public investment in Table 3.5 & Figure 3.4 which shows the total outlay of State Government expenditure in the agriculture sector. The State expenditure on agriculture sector programs has increased significantly during the 11th Plan compared to 9th and 10th plan; from the first year of RKVY (2007) see increases in public GCF funding increased from 22987 crores to 23255 crores. Similarly, private funding for GCF in agriculture increases from 69070 crores to 82484 crores during the same period. Throughout the 11th year plan, there is a clear trend of overall increased spending in the agriculture sector GCF (although much of total cost is born by the private sector). However, the overall Government contribution to GCF (from both State and Central Government expenditure) might be higher than the reported figures. This is because of the incentivized structure of RKVY funding where increased State expenditure in agriculture means more funds through the RKVY program. As such increases in RKVY spending in GCF

are necessarily mirrored with increases in State expenditure on agriculture programs (including State based GCF initiatives). Figure 3.5(below) shows the per cent change per year of the 11th Plan in GCF, while Table 3.6provides the GCF investment percentages used to create the graph.

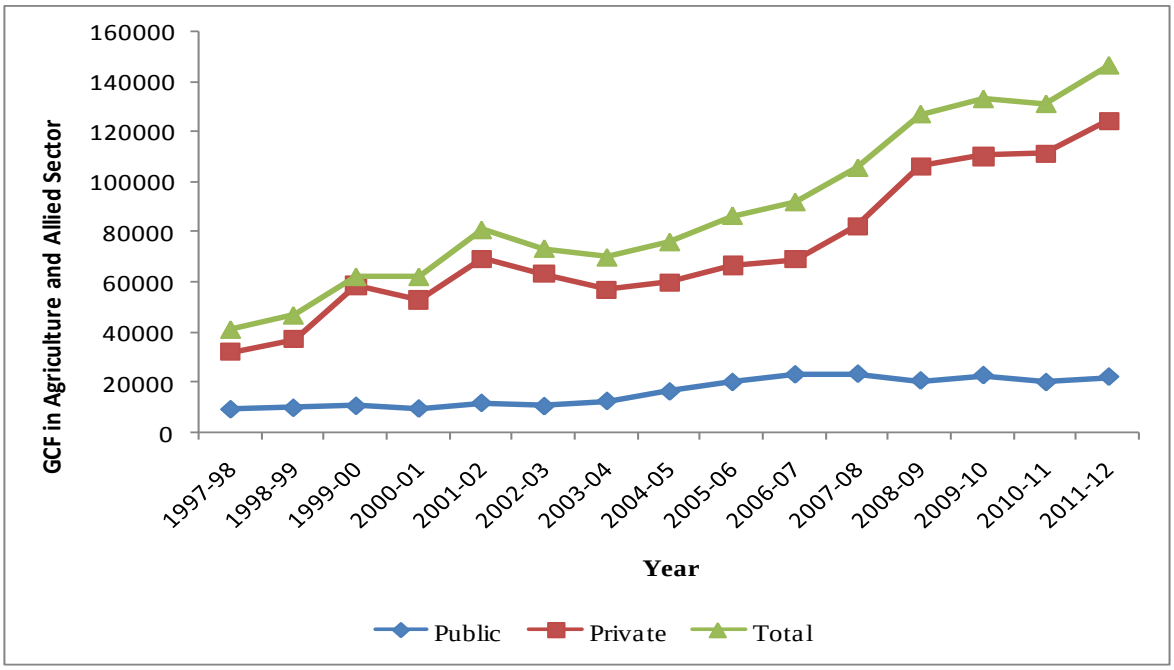


Figure 3.4: GCF in Agriculture and Allied Sector at 2004-05 Prices

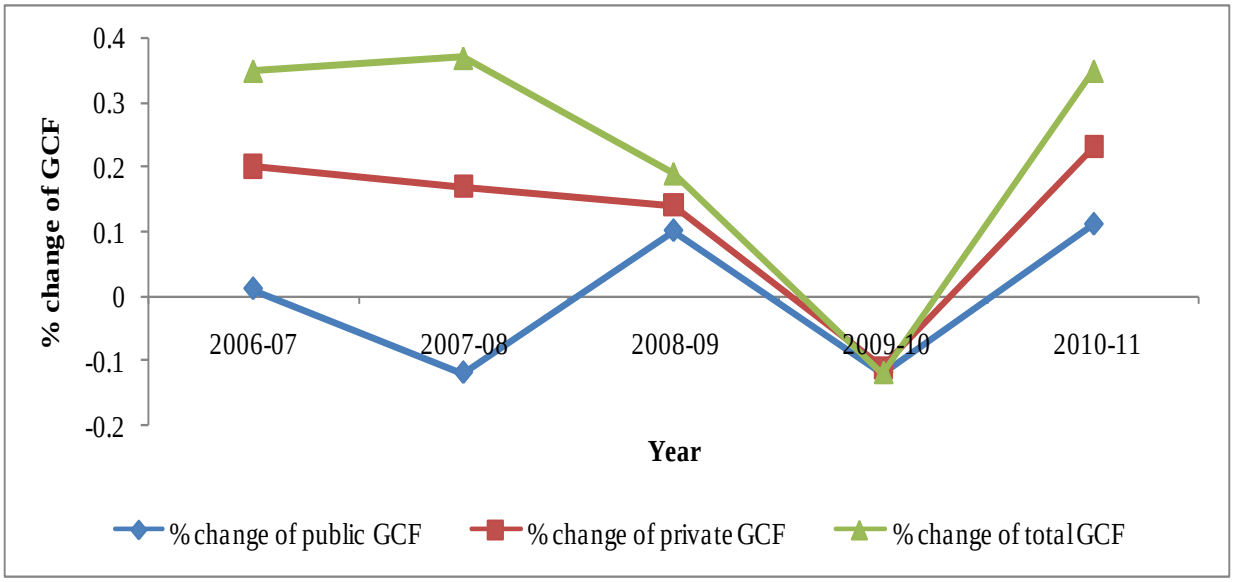


Figure 3.5: Per cent Change in GCF Expenditure during 11thPlan

It is somewhat incongruous to see increase in expenditure in the agriculture sector not necessarily mirrored in the GCF/Investment tables, but it is important to recall that RKVY programs focus on much more than just capital formation. There are programs that introduce efficient farming, water conservation and market accessibility which are perhaps not captured in the GCF data but are shown in the total outlay table. One should also bear in mind the large gains in GCF growth thanks to the private sector. It is very likely that the targeted nature of RKVY has perhaps induced private firms to enter the agriculture sector. Considering that, much of RKVY infrastructure investment occurred during the first two years of 11th Plan, it is obvious that there is some contribution of RKVY funds for the upward trend in private investment during the first two years as well.

3.4. Area, Production and Yield of Principal Crops in India

As mentioned in the previous section, RKVY programs have had an effect on many facets of agricultural production. We can see the benefits of RKVY initiative in the 11th Plan in comparison to the 10th Plan in Table 3.7. From the 10th Plan to the 11th Plan, several encouraging trends are apparent from Table 3.7. The most widespread of these is the transition from low value crops to high value crops. There is substantial increase in the growth of production in rice (1.25 per cent to 2.48 per cent), wheat (1.11 per cent to 4.42 per cent) and maize (4.02 per cent to 8.72 per cent) reduced rates of production in grains such as jowar and bajra (-0.89 per cent to -2.93 per cent and 17.12 per cent to 7.40 per cent, respectively). We also see that there is large increases in small millets production growth rate (-2.49 per cent to 12.76 per cent) which have the added benefit of high nutritional content at low cultivation costs.

Outside of food grains, the increase in productivity of high value cash crops is also apparent, with notable increases in groundnut (3.61 per cent to 15.75 per cent) and sesame (3.64 per cent to 8.52 per cent) both of which have specialized RKVY research programs attached to them. There is also increase in production of crops such as tur which have regenerative properties to the soil when planted between the k*harif* and r*abi* growing seasons (specifically aiding in renewing nitrogen content in the soil).

There are broad trends of decreasing area coupled with increasing yields per hectare, a sign of intensive agriculture practices being implemented in previously inefficient production centers. Much of this is due to higher fertilizer usage, as shown in Table 3.8 and Figure 3.6 below.

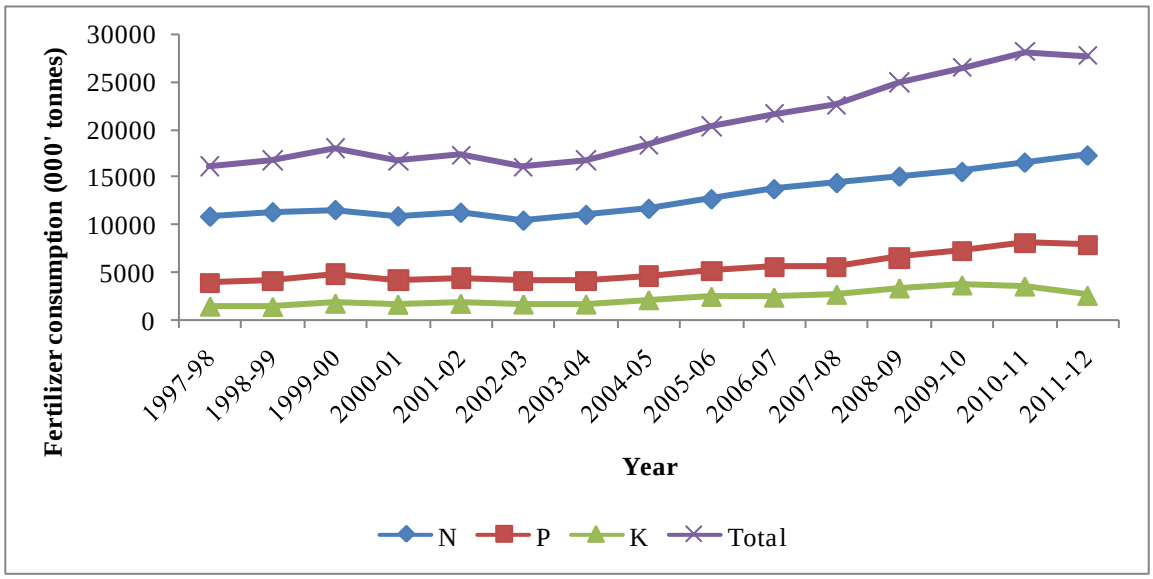


Figure 3.6: Growth of Fertilizer (Total and by Nutrient)

There have been large year on year increases in fertilizer usage, particularly since 2003, which continued through the 11th Plan and under the auspices of RKVY projects relating to fertilizer use and education and INM. Much of the increase was centered on fertilizers that replenish nitrogen in the soil, which also commensurate with RKVY soil amelioration programs in State s such as Andhra Pradesh and Maharashtra. However, there is some concern like overuse of chemical fertilizers can lead to poor soil quality in the future. There were some projects detailed with the use of organic fertilizers (animal bi-products primarily) which can rejuvenate soils and a result, the anticipated gains could perhaps reduce overall reliance on chemical fertilizers.

We can see the importance of fertilizer to productivity in Indian agriculture in Table 3.9, which depicts the trend of input use in the agriculture sector, specifically in terms of irrigated area. Per cent net irrigated to net sown area and irrigation intensity hasn't changed drastically from the 10th Plan to the 11th Plan, but there were large gains in fertilizer per hectare and in net irrigated area. The largest share of investment under RKVY was in the micro/minor irrigation sector and as such it is not surprising to see large gains in net irrigated area.

3.5. Region-Wise Breakdown of Agriculture Sector Performance

In Appendix Table sections we can see large increase in the overall State budget from the 10th Plan to the 11th Plan while per cent expenditure share of State budget has remained constant, which infers higher general spending on agriculture initiatives. Due to the incentivized format of RKVY funding, the actual public expenditure on agriculture could be quite higher than the reported figures. Interesting traits among all the individual States RKVY projects are increase in investment in livestock and animal husbandry in general. Figure 3.7 shows the stark increase in animal products, particularly in meat production thanks to RKVY livestock initiatives. Meat

production alone grew by a massive 74.2 per cent during the first year of RKVY (2007-08). The overall average for the RKVY period of 11th Plan was 23.6 per cent, a significant increase in comparison to the 10th Plan's average of 3.9 per cent.

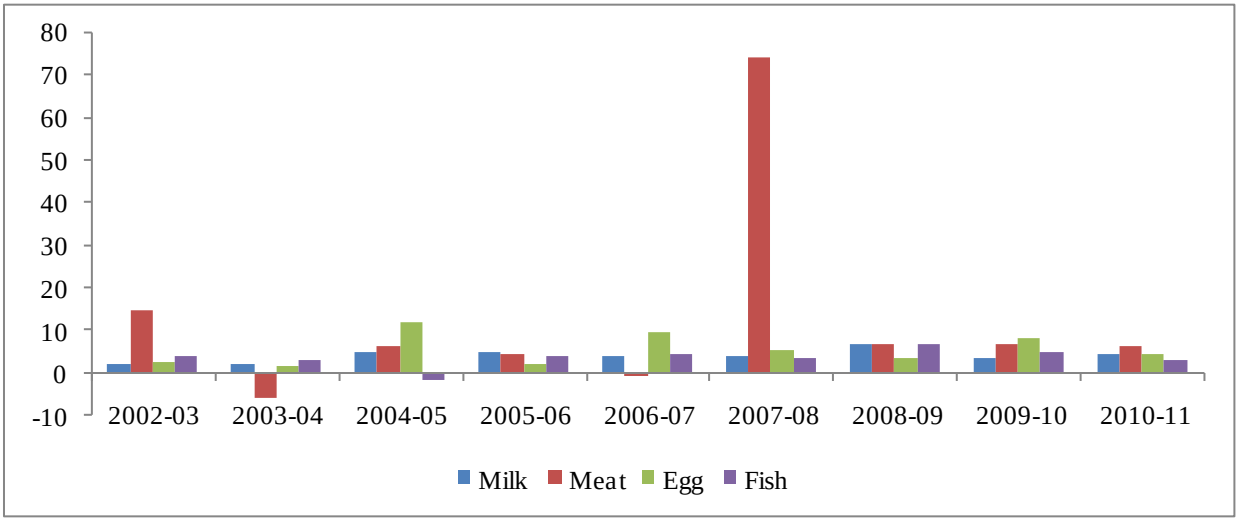


Figure 3.7: Percentage Change in Growth of Animal Products from 10th Plan to First 4 Years of 11th Plan

Perhaps the largest benefit realized by farmers in rural areas was access to high value animal products. States such as Haryana witnessed an increase of 594.88 per cent in meat production (Appendix Table 3.1A) which bodes well for the reduction of poverty in rural India. Considering the large increase in expenditure on livestock has been throughout the lifespan of RKVY (see animal husbandry increases in Figure 3.2), there is an expectation that overall rural poverty has decreased during the 11th Plan period. Table 3.11 provides the change in rural and urban poverty from previous years. One can see the sharp decline in rural poverty from 2004-05 to 2011-12 (which is almost double the previous rate of poverty reduction) can be directly attributed to increase of production in high value products in the form of animal production and the transition towards more marketable grains and cash crops (see section 3.4).

There are also interesting threads that are region specific. For example, RKVY spending has overall been dominated by irrigation programs in all the regions except the South (Appendix Tables 3.1 to 3.4). This is particularly strange considering the general lack of irrigation found in Tamil Nadu, Andhra Pradesh and especially Karnataka. Most of the RKVY responses to drought management were through seed projects (in Andhra Pradesh) or innovative water conservation farming programs (in Tamil Nadu) and the same were also in Karnataka but on a very small scale. Discussion with the Ministry of Agriculture in Karnataka suggested that outside funding and development into irrigation (through the World Bank) were the reasons as to why RKVY funds appropriated to Southern States were not heavily allocated to irrigation

programs/infrastructure. These sorts of regional differences were the major delineating factors when comparing agriculture performance by regions.

The overall GSDP at all India went from 7.61 per cent in 10th FYP to 8.63 per cent in 11th FYP. The agriculture GSDP of all India also grew up from 2.38 in 10th FYP to 3.66 per cent in 11th FYP. The increase in overall and agriculture GSDP is seen all the regions except for West and Central India. However it is interesting to note that even after decline West and Central India the growth rate remained highest among all the regions as could be seen from Appendix Table 3.5. However, the percentage agricultural expenditure from State s' budget increased marginally at all India level from 17.62 per cent in 10th FYP to 18.44 per cent in 11th FYP. Similarly the percentage of agriculture expenditure to agriculture GSDP has gone up. The percentage of net irrigated to net sown area, cropping intensity and irrigation intensity all showed upward trend from 10th FYP to 11th FYP at all India level and at regional level. The irrigation projects are yielding results.

3.6. Correlation between RKVY Expenditure and Investment, Inputs, Production and Productivity

In an endeavour to find out some quantifiable indicators of RKVY programme this exercise was attempted. Table 3.12 provides the year-wise change in the RKVY expenditure compared to investment in agriculture (GCF). Table also provides a correlation coefficient between per cent change in RKVY expenditure and various measures of per cent change in GCF. For example, the correlation coefficient between year-wise per cent change in RKVY expenditure and year-wise per cent change in Public GCF was -0.83, which suggests a strong negative correlation between RKVY spending and public investment. Alternatively, we see a positive correlation between RKVY spending and Private GCF (0.65) indicating that the presence of increased spending in the agriculture sector has induced private firms/entrepreneurs to invest in the agriculture sector as well. In other words, whereas RKVY expenditure crowded out the public investment in agriculture, it supplemented the private investment in agriculture. But the more interesting fact was that the general contribution of Private GCF far outweighed the public sector (see also statistics presented in Table 3.4 and Table 3.5) so the positive correlation seen between RKVY expenditure and Total GCF was positive and significant (0.45) and thereby RKVY at the overall led to positive growth in investment into agriculture sector.

Correlations between RKVY expenditure and Irrigation/Fertilizer are shown in Table 3.13. The correlation coefficient between year-wise per cent change in RKVY expenditure and year-wise per cent change in net irrigated area was positive with a correlation coefficient of 0.79. The high correlation coefficient indicates that RKVY contributed significantly in raising irrigated area at the aggregate and the latter will have far reaching impact on raising agricultural productivity. This was clearly a result of major focus on micro/minor irrigation projects which comprise a significant portion of RKVY's total budget. A similar positive trend was seen between RKVY expenditure and Fertilizer use (kg/ha), which had a correlation coefficient of 0.63. These two

components led to inverse turn in the falling productivity in the Indian agriculture during the 1990s and early 2000s (Kumar, 2013).

Lastly, Table 3.14 provides correlations between RKVY expenditure and area, production and yield of foodgrains and horticulture crops. The trend between year-wise per cent change in RKVY expenditure and area of foodgrains is interesting; since there is hardly any relationship found between expenditure and area (correlation coefficient was equal to 0.01). This is indicative of the trend of increasing intensive agriculture seen throughout the 11th Plan whereby production increase was led by increasing yield rates alone. Both the year-wise per cent change in production and yield of foodgrains had positive correlation with the year-wise per cent change in RKVY expenditure. The correlation coefficients were 0.24 and 0.17, respectively, which although were insignificant but the positive sign indicates that rising RKVY expenditure led positive increase in yield rate as well production of foodgrains. However, RKVY expenditure was on sectors related to overall production and yield (such as the seed sector or innovative programmes) which eventually have positive impact on these two indicators in the long run. Similarly, the impact of irrigation and fertilizer might also have some lag effect and thereby the total impact may be visible in the coming future. In contrast to foodgrains, there was a negative relationship between year-wise per cent change in RKVY expenditure and area and production in horticulture. The correlation coefficients were -0.27 for area and -0.13 for production. This negative trend is expected due to two reasons. First, there was lower amount of RKVY spent in the horticulture sector as compared to other agriculture sectors such as crop sector and livestock. Second, the horticulture sector, especially the fruit sector belongs to perennial crops that take much longer time in translating investment into increased production due to long gestation period.

TABLES

Table 3.1: Plan-Wise Growth Rates at 2004-2005 Prices

(Per cent)

Year	Five year plan	Total Economy	Agriculture, incl. livestock	Fishing
1997-98	Ninth Plan (1997-02)	4.3	-3.0	1.7
1998-99		6.7	7.1	-5
1999-00		7.6	2.4	7
2000-01		4.3	-0.6	4.7
2001-02		5.5	6.5	5
Average		**5.7**	**2.5**	**2.7**
2002-03	Tenth Plan (2002-07)	4	-8.1	4.1
2003-04		8.1	10.8	3.6
2004-05		7	0.1	-2
2005-06		9.5	5.5	5.9
2006-07		9.6	4.1	6.6
Average		**7.6**	**2.5**	**3.6**
2007-08	Eleventh Plan (2007-12)	9.3	6.3	5.8
2008-09		6.7	-0.3	2.7
2009-10		8.6	0.4	3.2
2010-11		9.3	8.8	5.4
2011-12		6.2	3.9	1.8
Average		**8**	**3.8**	**3.8**

Source: Central Statistics Office, National Accounts Division.

Table 3.2: Plan-Wise GDP Share of Total Economy at 2004-2005 Prices

(Per cent)

Year	Five Year Plan	Agriculture, incl. livestock	Fishing
1997-98	Ninth Plan (1997-2002)	20.6	1.2
1998-99		20.7	1
1999-00		19.7	1
2000-01		18.8	1
2001-02		18.9	1
Average		**19.7**	**1.1**
2002-03	Tenth Plan (2002-07)	16.7	1
2003-04		17.1	1
2004-05		16	0.9
2005-06		15.5	0.9
2006-07		14.7	0.9
Average		**16**	**0.9**
2007-08	Eleventh Plan (2007-12)	14.3	0.8
2008-09		13.4	0.8
2009-10		12.3	0.8
2010-11		12.3	0.7
2011-12		12	0.7
Average		**12.9**	**0.8**

Source: Central Statistics Office, National Accounts Division

Table 3.3: Plan-Wise and Year-Wise Share ofPublic &Private Sector in Gross Capital Formation (GCF) at 2004-2005 Prices

(Per cent)

Plan Period	Year	Share of Public & Private GCF in GCF of Agriculture & Allied Sectors		Share of Public & Private GCF in GCF of Agriculture Sector incl. livestock		Share of Public & Private GCF in GCF of Fishing Sector	
		Public	**Private**	**Public**	**Private**	**Public**	**Private**
Ninth Plan (1997-02)	1997-98	22.1	77.9	21.2	78.8	0.1	99.9
	1998-99	20.7	79.3	19.8	80.2	0.3	99.7
	1999-00	15	85	14.6	85.4	-0.1	100.1
	2000-01	15.2	84.8	14.8	85.2	0	100
	2001-02	14.4	85.6	14.3	85.7	0	100
Average		**17.5**	**82.5**	**16.9**	**83.1**	**0.1**	**99.9**
Tenth Plan (2002-07)	2002-03	14	86	14.2	85.8	0	100
	2003-04	18.1	81.9	17.6	82.4	0	100
	2004-05	21.3	78.7	22.1	77.9	0	100
	2005-06	23	77	23.8	76.2	0	100
	2006-07	25	75	25.9	74.1	0	100
Average		**20.3**	**79.7**	**20.7**	**79.3**	**0**	**100**
Eleventh Plan (2007-12)	2007-08	22	78	22.9	77.1	0	100
	2008-09	16.2	83.8	16.6	83.4	0	100
	2009-10	17.3	82.7	18	82	0	100
	2010-11	15.1	84.9	15.7	84.3	0	100
	2011-12	NA	NA	NA	NA	NA	NA
Average (first four years)		**17.7**	**82.3**	**18.3**	**81.7**	**0**	**100**

Source: Central Statistics Office, National Accounts Division
Note: NA-Not-Available

Table 3.4: Plan-Wise and Year-Wise Share of GCF/Investment

(Per cent)

Plan Period	Year	Share of GCF in Agriculture & AlliedSectors to GCF in the total Economy			Share of Agriculture & Allied Sectors GCF to GDP in Agriculture & Allied Sectors	Share of GCF in total Economy to GDP in total Economy
		Public	**Private**	**Total**		
Ninth Plan (1997-02)	1997-98	5.8	8.8	7.9	8.6	26.8
	1998-99	5.7	9.8	8.5	9.2	26.4
	1999-00	5.4	12.6	10.5	13.1	29.1
	2000-01	5.1	12.4	10.2	11.9	26
	2001-02	6	14.3	11.9	14.6	27.5
Average		**5.6**	**11.6**	**9.8**	**11.5**	**27.1**
Tenth Plan (2002-07)	2002-03	5.7	12.2	10.5	14.2	27.2
	2003-04	6.3	10	9	12.4	27.8
	2004-05	6.7	7.3	7.2	13.5	35.8
	2005-06	7.1	7	7	14.6	38
	2006-07	7.1	6.4	6.6	14.9	39.3
Average		**6.6**	**8.6**	**8.1**	**13.9**	**33.6**
Eleventh Plan (2007-12)	2007-08	6.1	6.5	6.4	16.1	42.5
	2008-09	4.8	9.3	8.1	19.4	37.8
	2009-10	5.1	7.8	7.1	19.8	40.8
	2010-11	4.5	8.1	7.2	20.1	40.4
	2011-12	NA	NA	NA	NA	NA
Average		**5.1**	**7.9**	**7.2**	**18.8**	**40.4**

Source: Central Statistics Office, National Accounts Division

Table 3.5: GCF, Year-Wise Investment and Per Cent Share of GDP

Year	GDP from Agriculture & Allied Sectors at 2004-05 prices (Rs crore)	GCF in Agriculture & Allied Sectors at 2004-05 prices (Rs crore)			GCF in Agriculture & Allied Sectors as % of GDP from Agriculture & Allied Sectors		
		Public	Private	Total	Public	Private	Total
1997-98	478933	9100	32089	41188	1.9	6.7	8.6
1998-99	509203	9675	37172	46847	1.9	7.3	9.2
1999-00	522795	10456	58553	62213	2	11.2	11.9
2000-01	522755	9410	52798	62208	1.8	10.1	11.9
2001-02	554157	11637	69270	80907	2.1	12.5	14.6
2002-03	517559	10351	63142	73493	2	12.2	14.2
2003-04	564391	12417	57003	69984	2.2	10.1	12.4
2004-05	565426	16187	59909	76096	2.9	10.6	13.5
2005-06	594487	19940	66664	86604	3.4	11.2	14.6
2006-07	619190	22987	69070	92057	3.7	11.2	14.9
2007-08	655080	23255	82484	105741	3.5	12.6	16.1
2008-09	655689	20572	106555	127127	3.1	16.3	19.4
2009-10	660987	22693	110469	133162	3.4	16.7	20.1
2010-11	713477	19918	111306	131224	2.8	15.6	18.4
2011-12	739495	22095	124483	146578	3	16.8	19.8

Source: Central Statistics Office, National Accounts Division

Table 3.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector in India

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	28188.2 (17.3)	83745.9 (22.5)	197.1
2	Soil and Water Conservation	6667.6 (4.1)	13984.7 (3.8)	109.7
3	Animal Husbandry	12663.9 (7.8)	27189.8 (7.4)	114.7
4	Dairy Development	5455.4 (3.4)	6598.2 (1.8)	20.9
5	Fisheries	2955.8 (1.9)	7149 (2)	141.9
6	Forestry and Wild Life	23181.4 (14.3)	43219.5 (11.7)	86.4
7	Plantations	82.6 (0.1)	61.5 (0.1)	-25.6
8	Food Storage and Warehousing	7192.2 (4.5)	31427.8 (8.5)	337.0
9	Agricultural Research and Education	7874.3 (4.9)	16694.4 (4.5)	112.0
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	12793.7 (7.9)	30475 (8.2)	138.2
12	Other Agricultural Programmes	727.9 (0.5)	1685.5 (0.5)	131.6
13	Major and Medium Irrigation	39373.4 (24.2)	76715.9 (20.7)	94.8
14	Minor Irrigation	11258.1 (7)	24617.5 (6.7)	118.7
15	Flood Control and Drainage	2625.6 (1.7)	4727.9 (1.3)	80.1
16	Others	2026.8 (1.3)	3953.2 (1.1)	95.1
	Total	**163066.4 (100)**	**372245.2 (100)**	**128.3**

Source: State Finances, RBI

***Note:** The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others

Figures in the parenthesis are percentage to the respective total

Table 3.7: All India Average Annual Growth Rates of Area, Production and Yield of Principal Crops

(Per cent)

Crops	10th Plan (2002-03 to 2006-07)			11th Plan (2007-08 to 2011-12)		
	Area	Production	Yield	Area	Production	Yield
Rice	-0.39	1.25	1.17	0.16	2.48	2.23
Wheat	1.3	1.11	-0.32	1.34	4.42	3.05
Jowar	-2.84	-0.89	2.07	-5.5	-2.93	3.09
Bajra	1.67	17.12	7.28	-1.55	7.4	8.36
Maize	3.77	4.02	-0.15	1.99	8.72	6.46
Ragi	-5.52	-2.67	0.4	0.95	8.86	6.9
Small Millets	-5.03	-2.49	2.32	-4.78	12.76	17.6
Barley	-0.28	-1.21	-0.9	0.79	6.19	4.29
Coarse Cereals	-0.26	2.55	1.75	-1.63	5.67	7.3
Total Cereals	0.07	1.21	0.74	-0.04	3.61	3.59
Gram	3.6	4.7	0.28	2.36	4.34	1.91
Tur	1.38	1.06	-0.41	3.28	4.83	1.33
Total Pulses	1.31	2.66	0.65	1.61	4.41	2.66
Total Foodgrains	0.29	1.29	0.59	0.24	3.65	3.35
Sugarcane	3.98	4.9	0.66	0.24	0.79	0.48
Groundnut	-1.65	3.61	4.32	-0.69	15.75	13.65
Sesame	0.98	3.64	0.51	2.57	8.52	5.4
R&M	7.32	11.55	3.24	-1.63	0.05	1.18
Sunflower	14.04	13.83	0.37	-18.96	-14.98	5.82
Soyabean	5.8	12.26	6.18	4.14	7.82	3.88
Total Nine Oilseeds	3.55	7.99	3.53	0.02	5.67	5.36
Cotton	0.57	20.01	19.4	5.97	10.46	3.93
Jute	-1.82	-0.38	1.49	0.48	1.57	0.9
Mesta	-3.85	-2.44	1.45	-5.56	-5.43	-0.26
Jute & Mesta	-2.15	-0.58	1.45	-0.42	0.94	-0.26

Source: Directorate of Economics & Statistics, Ministry of Agriculture.

Table 3.8: All-India Consumption of Fertilizer in terms of Nutrients (N, P & K)

(000' tonnes)

Year	N	P	K	Total
1997-98	10901.8	3913.6	1372.5	16187.9
1998-99	11353.8	4112.2	1331.5	16797.5
1999-00	11592.7	4798.3	1678.7	18069.7
2000-01	10920.2	4214.6	1567.5	16702.3
2001-02	11310.2	4382.4	1667.1	17359.7
2002-03	10474.1	4018.8	1601.2	16094.1
2003-04	11077	4124.3	1597.9	16799.1
2004-05	11713.9	4623.8	2060.6	18398.3
2005-06	12723.3	5203.7	2413.3	20340.3
2006-07	13772.9	5543.3	2334.8	21651
2007-08	14419.1	5514.7	2636.3	22570.1
2008-09	15090.5	6506.2	3312.6	24909.3
2009-10	15580	7274	3632.4	26486.4
2010-11	16558.2	8049.7	3514.3	28122.2
2011-12	17300.3	7914.3	2525.5	27740

Source: Department of Agriculture & Cooperation

Table 3.9: Trend in Input Use in India

Year	Net irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation Intensity (%)	Fertilizer consumption (Kg/ha of GCA)
2002-03	538.84	40.84	135.58	84.80
2003-04	570.46	40.54	136.81	88.19
2004-05	592.18	42.11	136.92	94.52
2005-06	608.31	43.09	138.55	104.5
2006-07	627.44	44.87	138.27	112.69
10th Plan Average	**587.4**	**42.3**	**137.2**	**96.94**
2007-08	632.9	44.88	139.14	115.27
2008-09	637.4	44.92	139.47	127.21
2009-10	632.6	45.45	134.52	135.27
2010-11	636.0	44.92	140.50	146.32
2011-12	636.0	44.92	140.50	144.33
11th Plan Average	**635.0**	**45.0**	**138.8**	**133.68**

Source: Directorate of Economics and Statistics, GOI

Table 3.10: Growth in Milk, Meat, Egg and Fish for 10th and 11thYear Plan

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	2.08	15.04	2.82	4.09
2003-04	2.23	-5.92	1.46	3.22
2004-05	5.00	6.30	11.87	-1.48
2005-06	4.95	4.48	2.29	4.23
2006-07	3.92	-0.35	9.58	4.53
10th plan	**3.64**	**3.91**	**5.60**	**2.92**
2007-08	3.94	74.15	5.73	3.75
2008-09	7.00	6.76	3.73	6.87
2009-10	3.78	6.68	8.47	5.01
2010-11	4.66	6.64	4.58	2.91
2011-12*	-	-	-	5.29
11th plan	**4.85**	**23.56**	**5.62**	**4.77**

Source: BAHS, www.Indiastat.com

Note: * For Milk, Meat and Egg 2011-12 data are not available

Table 3.11: Poverty Ratio in India

Year	Rural	Urban	Total
1993-94	50.1	31.8	45.3
2004-05	41.8	25.7	37.2
Points decline	8.3	6.1	8.1
2011-12	25.7	13.7	21.9
Points decline	16.1	12	15.3

Source:http://planningcommission.nic.in/news/pre_pov2307.pdf

Table 3.12: Correlation between Per Cent Change in RKVY Expenditure and Investment

Year	% Change Total RKVY Expenditure	Public GCF % Change	Private GCF % Change	Total GCF % Change
Change over 2006-07	1	0.01	0.19	0.15
Change over 2007-08	1.31	-0.12	0.29	0.2
Change over 2008-09	0.3	0.1	0.04	0.05
Change over 2009-10	0.79	-0.12	0.01	-0.01
Change over 2010-11	0.11	0.11	0.12	0.12
Correlation Coefficient	-	-0.83	0.65	0.45

Table 3.13: Correlation between Per Cent Change in RKVY Expenditure and Irrigation / Fertilizer

Year	% Change Total RKVY Expenditure	% Change of Net Irrigated Area	% Change of Fertilizer
Change over 2006-07	1	0.01	0.02
Change over 2007-08	1.31	0.01	0.1
Change over 2008-09	0.3	-0.01	0.06
Change over 2009-10	0.79	0.01	0.08
Change over 2010-11	0.11	0	-0.01
Correlation Coefficient	-	0.79	0.63

Table 3.14: Correlation between RKVY Expenditure and Area, Production and Yield of Food Grains and Horticulture

Year	% Change Total RKVY Expenditure	% Change Area Lakh Ha (Foodgrains)	% Change Production '000 Tonnes (Foodgrains)	% Change Yield Kg/Ha (Foodgrains)	% Area Lakh Ha (Horticulture)	% Change Production '000 Tonnes (Horticulture)
Change over 2006-07	1	0	0.06	0.06	0.04	0.1
Change over 2007-08	1.31	0.03	0.02	0.03	0.02	0.02
Change over 2008-09	0.3	-0.06	-0.07	-0.06	0.01	0.04
Change over 2009-10	0.79	0.07	0.12	0.07	0.05	0.08
Change over 2010-11	0.11	0.08	0.06	0.08	0.06	0.07
Correlation Coefficient	-	0.01	0.24	0.17	-0.27	-0.13

4.1 HARYANA

4.1.1. Background Information

Haryana is a State in northern India. The State is bound by Punjab in the west, Uttar Pradesh in the east, Himachal Pradesh in the north and Rajasthan in the south. Its eastern border also touches Uttaranchal and Uttar Pradesh. The State also surrounds Delhi from the northern, western and southern side. The range of Aravalli hills outlines the southern boundary and the natural borders are provided by the Shivalik hills in the north-east, river Yamuna in the east and river Ghaggar in the west. The Yamuna-Ghaggar plains form the largest part of the State. Haryana is the twentieth largest State of India with an area of 44212 Sq km with just 1.37 per cent of the total geographical area. According to the Census of India 2011, total population of the State was 2,53,53,081 persons that is 2.1 per cent of population of India. The population density in the State (478 per sq km) was more than the density of population in the country (324 per sq km).

Haryana is one of the most agrarian States in India. Haryana is famous for wheat and basmati rice production and the State has excelled in milk production. The share of agriculture in the State GSDP has declined from 21.6 percent in 2006-07 (the end of 10th Five Year Plan) to 16.7 per cent in 2011-12 (the end of 11th Five Year Plan). Peculiarly, the share of manufacturing sector has also declined from 32.1 percent to 28.7 per cent during the same time period whereas services sector share has increased from 46.6 per cent at the end of 10th Plan to 54.6 per cent at the end of 11th Plan (Table 4.1.7). The Gross State Domestic Product in 2011-12 was Rs. 3,07,606 crore (Economic Survey of Haryana, 2012-13). The contribution of primary, secondary and tertiary sectors was Rs. 65,192 crore (Agriculture and Allied Sectors), Rs. 86,752 crore (Industry Sector) and Rs. 1,55,661 crore (Service Sector), respectively. The annual average growth rate in agriculture sector has been fluctuating in Haryana where it touched 4 per cent growth rate in 2003-04 but declined to less than 1 per cent in the succeeding year. Nonetheless, the annual average growth in agriculture sector in Haryana hardly touched double digit during the 10th Five Year Plan except the terminal year of 10th Plan.

With an anxiety of slow growth of agriculture and allied sectors, the RKVY was implemented in 2006-07 in the country. RKVY aimed at achieving 4 per cent annual growth in the agriculture sector during the 11th Five Year Plan (2007-12). Table 8 depicts the annual average growth rate of agriculture and allied sector in Haryana**.** Over the years, the annual growth rate remained fluctuating even after implementation of RKVY. The overall 10th Plan period growth rate in agriculture in Haryana averaged at 4.5 per cent partly because of very high 14.2 per cent per annum growth rate in the year 2006-07. During the 11th Plan period the five year average growth rate per annum was recorded at 3.9 per cent that was less than the 10th Plan average. The agriculture sector has always been the leading sector in Haryana beginning from the Green Revolution days. However, productivity of main crops like rice and wheat which were the

harbinger of green revolution started stagnating in the 1990s. The RKVY programme along with many other such Central and State Sponsored programmes like Food Security Mission, ISOPOM, Macro Management, etc., were started to revive the agriculture sector in general and productivity of crop and non-crop sectors in particular in different States and country as a whole.

4.1.2. Distribution of Allocation and Expenditure across Sectors

This section mainly focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector. It is expected that the allocation and expenditure would move in the same direction. Nonetheless, that may not be true, but for present evaluation we shall focus our concentration on the expenditure actually incurred. We also look at the allocation data and the ratio of expenditure to allocation to point out whether there was any diversion taking place in the priorities set initially.

Data in Table 4.1.1 and Figure 4.1 presents the numbers of projects undertaken under RKVY, their amount of allocation and expenditure, expenditure incurred per project and expenditure allocation ratio. With respect to expenditure across sectors, six major sectors, viz., micro/minor irrigation, animal husbandry, seed, agricultural mechanization, fertilizer-INM and crop development contributed 85 per cent of the total expenditure and remaining ten sectors, including horticulture, marketing and PHM, fisheries, organic farming, dairy development etc., utilized around15 per cent of the total expenditure in the State. Further, expenditure incurred per project was highest in micro/minor irrigation sector with Rs. 11.3 crore per project and it was lowest for extension sector with an amount of only Rs. 0.2 crore per project. Micro irrigation, animal husbandry, seed, agriculture mechanization and crop development had per project expenditure more than the State average. If one looks at allocation as compared to expenditure, two sectors, namely, integrated pest management and dairy development were kept in high priority as much higher allocation was done to these two sectors compared to what was spent during the execution period of RKVY. The statistics in the table shows that expenditure- allocation ratio was more than one only in the case of agriculture mechanization. The overall ratio was 0.7 in Haryana, indicating that out of total allocated amount under RKVY; Only 73 percent was actually spent. The ratio was closer to one in fisheries, organic farming and bio-fertilizer, seed and marketing and post-harvest management. On the other hand, less than half of the total allocated amount was spent in integrated pest management, dairy development, innovating programme and natural resource management.

4.1.3. Sector-Wise Size of the Projects based on the Expenditure

Table 4.1.2 presents the numbers and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY per project have been divided into Rs. 0-1 crore, Rs. 1-10 crore, Rs. 10-25 crore and above Rs. 25 crore. Out of the total expenditure, 42 per

cent of the projects incurred only 5 per cent of the expenditure at the bottom spending less than Rs. 1 crore amounts on each project. On the other extreme, around 9 per cent of the projects incurred around 38 per cent amount having each project between Rs. 10 to 25 crore and only 1 percent of projects spent around 19 per cent of the total amount spending above Rs. 25 crore on each project. Only minor irrigation projects (11 projects) spent around 51 per cent under the last category of above Rs. 25 crore value of each project. In the category of Rs. 10-25 crore, the highest percentage of amount was spent in the projects under animal husbandry, followed by horticulture and agriculture mechanization. Between Rs.1-10 crore projects, highest percentage of amount spent was under fisheries, followed by marketing and post-harvest management, fertilizers and INM, natural resource management and organic farming. Innovative programmes and training and capacity building and extension had the entire project that spent less than Rs. 1 crore on each project. Integrated pest management also had 55 per cent of their total expenditure incurred on project that had less than Rs. 1 crore values.

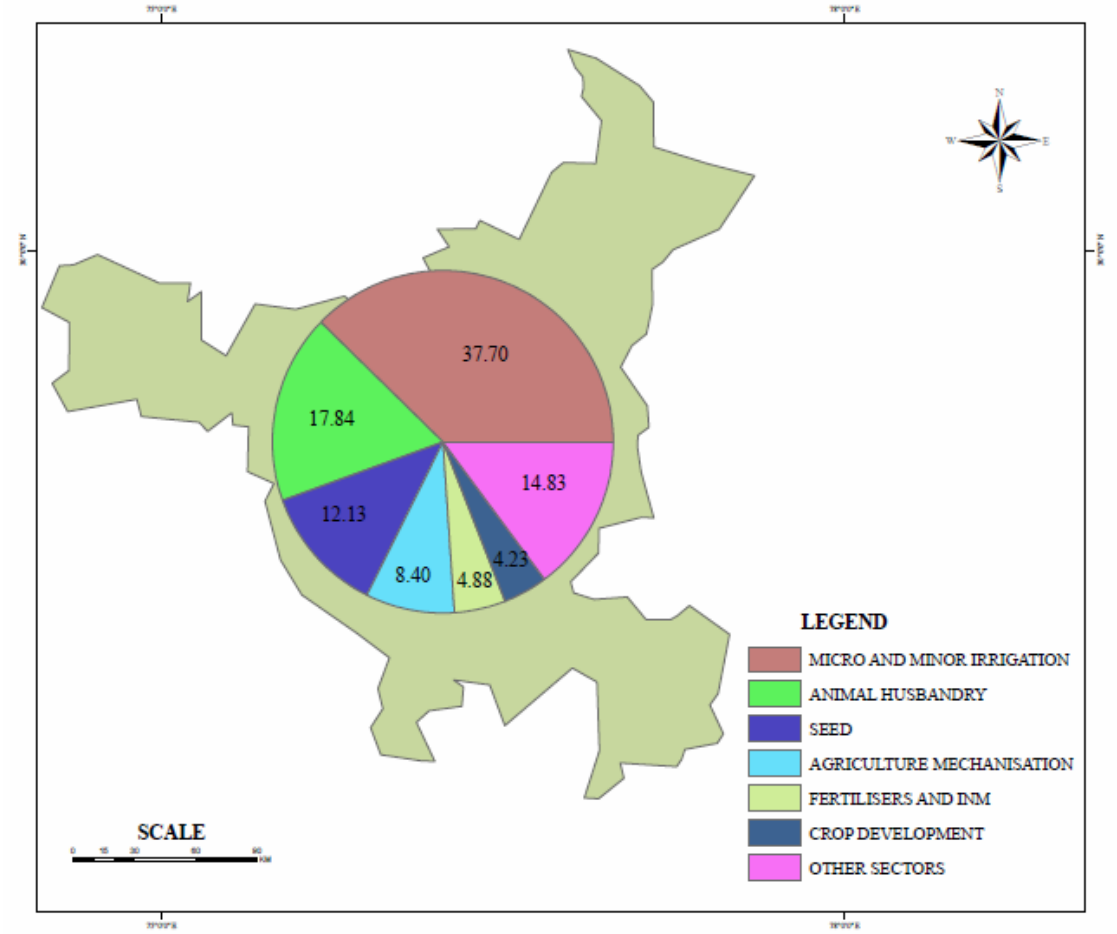


Figure 4.1: Share of Expenditure across Sectors

Note: Minor sectors includes Dairy development, Horticulture, Marketing and post-harvest management, Fisheries, Extension, Innovative programmes/ training/ capacity building/ others, Integrated pest management, Natural resource management, Organic farming / bio fertilizer and Research (agri/horti/animal husbandry/ etc.)

4.1.4. Sector-Wise Expenditure according to Status

The status-wise expenditure on completed and ongoing projects is presented in Table 4.1.3. Out of total expenditure incurred, more than 90 per cent was spent on projects completed or substantially completed and less 10 per cent was spent on projects either abandoned or projects in progress and ongoing. Animal husbandry, horticulture, marketing and post-harvest management, integrated pest management, dairy development and innovative programmes spent whole amount on completed and substantially completed projects. On the other hand research, extension and natural resource management spent least percentage of total expenditure on completed and substantially completed projects.

The micro/minor irrigation sector spent the highest amount of Rs. 182.2 crore followed by animal husbandry and seed with Rs. 96.2crore and Rs. 64.5 crore, respectively on the completed and substantially completed projects. Organic farming/ bio fertilizers and agricultural mechanization sectors had Rs. 0.1 crore and Rs. 0.4 crore for the projects in progress that was the least amount to be spent in the respective sectors. Micro irrigation, fertilizer and INM and research in their respective categories had the highest amount yet to be spent on the ongoing projects for the 11th Five Year Plan.

4.1.5. Sector and Sub Sector Wise Distribution of Projects by Nature

Table 4.1.4 presents sector and sub-sector-wise expenditure on Infrastructure and non-infrastructure projects of the nature ofnormal, National and State Flagship programmes in Haryana. Out of the total expenditure of Rs. 539.7 crore under RKVY scheme in Haryana, about 42 per cent was spent on development of infrastructure in agriculture and allied activities and remaining 58 per cent was spent on non-infrastructural activities. It is to be noted that there was no National Sponsored Flagship Programme undertaken in Haryana under the programme of RKVY.Infrastructure expenditure of normal and State flagship projects accounted for 34.1 per cent and 7.8 per cent of the total expenditure, respectively. Conversely, non-infrastructure expenditure of normal and State flagship accounted for 54 per cent and 4.1 per cent of the total expenditure, respectively. The total expenditure incurred on infrastructure assets projects was Rs. 226.2 crore. Looking at infrastructure spending sector wise, micro/minor irrigation accounted for highest share of Rs. 113.8 crore followed by agriculture mechanisation accounting for Rs. 31 crore, animal husbandry accounting for Rs.21.7 crore, seed (Rs. 14 crore), marketing and post-harvest management (Rs. 10.9 crore) and crop development, Rs. 10.1 crore of the total expenditure under RKVY projects in Haryana. Within the sub-sectors, pump sets (diesel/electric) contributed Rs. 70.9 crores to the total expenditure, followed by farm water management (Rs. 62.1 crore) andsprinkler and drip irrigation Rs. 53.3 crore. State flagship programme was mainly concentrated on micro/minor irrigation (pump sets (diesel/electric)), animal husbandry (breeding improvement) and seed (seed distribution).

4.1.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 4.1 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Haryana as provided in the website. Our purpose here to verify whether the stated targets set at the beginning of the project have been achieved or not subject to information provided by the State Government on the website. Under micro irrigation, the expected output was to create 87 thousand hectares of irrigation by creating minor irrigation sources like drip and sprinkler irrigation with the intended goal of reducing cost of cultivation and achieving efficient water management. Information on the extent of stated target achievement was not provided by the State Government. The other works taken up under micro irrigation in order to increase crop production and reduce cost of cultivation were laying underground pipeline, purchasing drainage machinery and installation of shallow tube wells. As per the information provided on the website, most of the stated objectives were achieved under micro irrigation projects. The major achievements were, 2606 sprinklers were installed and 300 acres of land was reclaimed from water logging.

Under animal husbandry, the major components covered were reproductive health management, genetic improvement of cattle and buffaloes through artificial insemination, capacity building of the farmers through organizing trainings, supply of minikit tools, mobile veterinary services, strengthening of fodder seed farms and construction of modern animal shed. The expected output was bringing unproductive animals into production, increase milk productivity, provide quality breeding services and treatment of infertility health management within the villages, make provision of better quality green fodder at the farm, and provide veterinary health care and creating scientific management of dairy units. The major output of the programme was creation of 439 A.I (Artificial Insemination) centres, 42738 insemination centres, 730 Gopal training centres and 4173 germplasm calves centres where doorstep A.I. services were made available to 500 villages.

In the seeds sector, the main components covered were improved hybrid seed of vegetables, seed replacement of sugarcane, purchasing of seed potato grading line, strengthening the seed processing plants, setting seed testing labs, treatment and distribution of certified seed and strengthening of seed farms. The intended objective was to increase crop production by enhancing seed replacement and by provision of certified quality seeds and control seed borne diseases. The major output of the projects was creation of 10000 seed sample centres and 6 seed processing plants were strengthened.

The main components of mechanization project were resource conservation technology like laser land levelling, promotion of new farm implements, supply of income generating farm tools, providing cotton seed drill machines and farm implements for the horticultural crops. The objective of the programme was to save water, increase productivity, timely sowing and

harvesting of crops, increasing the cropping intensity and Reduce drudgery of labour. As getting the output of mechanization may involve time lag, details about the clear output and outcome of the projects undertaken were not yet available. Under fertilizer and integrated nutrient management, the major works taken up related to supply gypsum, strengthening of soil testing laboratories and mitigating sulphur and other micro nutrients deficiency in the soil. The major outcome of the project was up-gradation of four soil testing labs.

4.1.7. An Assessment of RKVY Performance in the State and Concluding Remarks

In Haryana, RKVY project comprises of 16 sectors which includes 68 sub sectors. Out of the 16 sectors, six sectors absorbed 85.2 per cent of the expenditure. Among the major sectors, micro/minor irrigation utilized the major funds, followed by animal husbandry, seed, agriculture mechanization, fertilisers and INM and crop development. In order to develop the infrastructure and assets in the agriculture and allied sectors, the State under RKVY allocated significant share of funds (42 per cent of the total expenditure) to infrastructure projects. Besides, 11.8 per cent of total expenditure share was spent on the State flagship projects on pump sets, breed improvement and seed distribution. The pattern of expenditure incurred also shows the priority areas chosen by the State Government to achieve higher productivity in agriculture and to raise the growth rate of agriculture to help achieve higher growth path for the State economy.

If one looks at the expenditure pattern by sub sectors (Table 4.1.4), it clearly reveals that the State emphasized on farm water management, pump sets, sprinkler and drip irrigation under the head of micro irrigation, animal health, breed improvement, feed and fodder under animal husbandry and among others included, seed certification and distribution, machine and equipment, soil health card and soil testing and vegetable and sugarcane development. If one looks at the agriculture performance in the State one finds the priority areas chosen by the State are more or less justified. The strength of Haryana's agriculture has remained in high irrigation led crop productivity whereby farm water management and tube wells getting highest priority spells the doom caused by excessive use of water in growing paddy and other such crops that has created a problem of fast falling water table in the State. Thereby farm water management and sprinkler and drip irrigation has very high significance in the State. Haryana is also known for milk production and attempts in animal health and breed improvement is a step in the right direction. The other priority areas in seed, mechanization and crop development also indicate the States' objective of increasing crop productivity. However, some priority should have been given to crop diversification, post-harvest management and in the processing sector especially in the perishable crops which is also most important for increasing farmers’ income and bringing more agro based employment.

We try to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor

alone. Table 4.1.5 shows, that although revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 65 per cent in the 11th Plan over 10th Plan, however, percentage of agriculture share in the State budget declined from 16 percent in the 10th Plan to 15.3 per cent during the 11th Plan. Out of total expenditure in agriculture in the State, RKVY shared 3.3 per cent of the total expenditure. Although agriculture share in State total budget declined in the 11th Plan but agriculture expenditure as a percentage of State GSDP increased from 6.4 per cent in the 10th Plan to 8.4 per cent in the 11th Plan, this also suggest that GSDP from other sectors have increased faster than the GSDP from agriculture in the State from 10th to 11thPlan. Looking at sub sector budgetary expenditure (Table 4.1.6), the highest percentage change over the previous plan happened in cooperation, crop and animal husbandry, fisheries, agriculture research and education and major and medium irrigation, some of these also received prime priority under RKVY.

We have already stated that agricultural GSDP grew at a rate of 4.5 per cent in the 10th Plan that declined to 3.9 per cent in the 11th Plan in the State. There was no significant increase in the gross cropped area as well cropping intensity during the above mentioned period (Table 4.1.8). However, land productivity per hectare in value terms increased from Rs 62 thousand in the 10th Plan to approximately Rs 76 thousand in the 11th Plan, a part of that may be due to inflation factor. Although a lot of work on irrigation projects was taken up, especially in the micro irrigation, the net and gross irrigated area remained almost at the level where it was in the previous Plan period. There was marginal increase in irrigation intensity from 181.5 during the 10th Plan to 188.1 at the end of 11th Plan (Table 4.1.9). The growth rate in area, yield and production was also a mixed bundle where production growth increased in wheat and pulses but declined in rice, coarse cereals, oilseeds, cotton and sugarcane (Table 4.1.10). Average annual growth of livestock and fishery production in the State remained significant as meat production jumped especially in the year 2007-08 thereby raising the overall increase in meat production during the 1th Plan period by almost 600 per cent while fisheries production increased by 12.6 per cent and milk production increased by 4 per cent per annum during the above mentioned period.

To conclude, the information displayed on the RKVY website proclaims having achieved most of the output and outcome stated for the RKVY programme. However, on the cross checking, the performance of agriculture in the State does not portray a very rosy picture, as in most of the indicators, the performance of agriculture has remained only moderate.

TABLES

Table 4.1.1: Sector-wise Allocation and Expenditure under RKVY during the 11th Five Year Plan

Sectors	No. of project	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio	Expenditure per Project (Rs. crore)
1	**2**	**3**	**4**	**5**	**6**
Micro/Minor Irrigation	18 (22)	262.6 (35.6)	203.4 (37.7)	0.8	11.3
Animal Husbandry	24 (31)	136.6 (18.6)	96.2 (17.9)	0.7	4.0
Seed	15 (17)	73.6 (10)	65.4 (12.2)	0.9	4.4
Agriculture Mechanization	12 (13)	43.8 (6)	45.3 (8.4)	1.0	3.8
Fertilizers & INM	10 (10)	42.9 (5.9)	26.3 (4.9)	0.6	2.6
Crop Development	6 (7)	30.4 (4.2)	22.8 (4.3)	0.7	3.8
Horticulture	14 (18)	31.1 (4.3)	20.8 (3.9)	0.7	1.5
Marketing & PHM	7 (7)	18.6 (2.6)	15.6 (3)	0.8	2.2
Fisheries	6 (6)	12.5 (1.7)	11.8 (2.2)	0.9	2.0
Research	11 (13)	13.3 (1.9)	9.6 (1.8)	0.7	0.9
Organic Farming / Bio Fertilizer	8 (8)	8.7 (1.2)	7.9 (1.5)	0.9	1.0
NRM	5 (5)	11.3 (1.6)	4.4 (0.9)	0.4	0.9
Integrated Pest Management	5 (9)	28.0 (3.9)	3.6 (0.7)	0.1	0.7
Dairy Development	2 (3)	16.4 (2.3)	3.2 (0.7)	0.2	1.6
Innovative Programmes	2 (5)	6.4 (0.9)	1.9 (0.4)	0.3	1.0
Extension	4 (5)	1.0 (0.2)	0.7 (0.2)	0.8	0.2
Grand Total	**149 (179)**	**737.85 (100)**	**539.60 (100)**	**0.7**	**3.6**

Source: www.rkvy.nic.in as on April, 2013;

Note: Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3).

Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis).

INM: Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 4.1.2: SectorClassification of Projectsaccording to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Micro/minor irrigation	16.6	0.5	55.5	13.7	16.6	34.5	11.1	51.1	18(100)	203.4(100)
Animal husbandry	41.6	4.2	37.5	30.3	20.8	65.3	0	0	24(100)	96.2(100)
Seed	20	0.8	66.6	54.2	13.3	44.9	0	0	15(100)	65.7(100)
Agriculture mechanization	25	3.8	58.3	46.4	16.6	49.7	0	0	12(100)	45.3(100)
Fertilizers and INM	20	5.8	80	94.1	0	0	0	0	10(100)	26.4(100)
Crop development	50	8.1	33.3	48.0	16.6	43.8	0	0	6(100)	22.8(100)
Horticulture	71.4	19	21.4	23.3	7.1	57.7	0	0	14(100)	20.8(100)
Marketing and post harvest management	14.2	4.7	85.7	95.2	0	0	0	0	7(100)	15.7(100)
Fisheries	0	0	100	100	0	0	0	0	6(100)	11.8(100)
Research (agri/horti/animal husbandry/etc.)	72.7	40.3	27.2	59.6	0	0	0	0	11(100)	9.7(100)
Organic farming / bio fertilizer	75	24.6	25	75.3	0	0	0	0	8(100)	7.9(100)
Natural resource management	40	9.8	60	90.1	0	0	0	0	5(100)	4.4(100)
Integrated pest management	80	55.2	20	44.7	0	0	0	0	5(100)	3.7(100)
Dairy development	50	29.2	50	70.7	0	0	0	0	2(100)	3.3(100)
Innovative programmes/ training/ capacity building/ others	100	100	0	0	0	0	0	0	2(100)	1.9(100)
Extension	100	100	0	0	0	0	0	0	4(100)	0.8(100)
Grand Total	**41.6**	**5.1**	**47.6**	**37.2**	**9.4**	**38.3**	**1.3**	**19.**	**149(100)**	**539.6(100)**

Source:http://rkvy.nic.in/ as on April, 2013;

Note:* indicates the numbers in absolute figures, No.s: Number of projects, Expd: Expenditure;
Figures in the parenthesis are percentage to the respective total

Table 4.1.3: Sector Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/Not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
Micro/Minor Irrigation	3	21.3	16	182.2	3	0.0
Animal Husbandry	0	0.0	24	96.2	7	0.0
Seed	1	1.0	14	64.5	2	0.0
Agriculture Mechanization	1	0.4	11	45.0	1	0.0
Fertilizers & INM	2	7.7	8	18.6	0	0.0
Crop Development	1	0.9	5	21.9	1	0.0
Horticulture	0	0.0	14	20.8	4	0.0
Marketing & PHM	0	0.0	7	15.7	0	0.0
Fisheries	1	1.3	5	10.6	0	0.0
Research	8	6.6	5	3.0	0	0.0
Organic Farming / Bio Fertilizer	1	0.1	7	7.8	0	0.0
NRM	1	1.5	4	2.9	0	0.0
Integrated Pest Management	0	0.0	5	3.7	4	0.0
Dairy Development	1	0.0	2	3.3	0	0.0
Innovative Programmes	0	0.0	3	1.9	2	0.0
Extension	4	0.5	1	0.3	0	0.0
Grand Total	**24**	**41.3**	**131**	**498.3**	**24**	**0.0**

Source: http://rkvy.nic.in/ as on April, 2013

Note: No.: Number of projects

Table 4.1.4: Sector and Sub-Sector Wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		Total		Grand Total
	Infra-structure	Non infra-structure	Infra-structure	Non infra-structure	Infra-structure	Non infra-structure	
Micro/minor irrigation	**35.3**	**44.1**	**20.6**	**0.0**	**56(113.8)**	**44.1(89.7)**	**100(203.5)**
Farm water management	0.0	100.0	0.0	0.0	0(0)	100(62.1)	100(62.1)
Pump sets (diesel/electric)	40.7	0.0	59.3	0.0	100(70.9)	0(0)	100(70.9)
Shallow wells/ dug well	100.0	0.0	0.0	0.0	100(1.2)	0(0)	100(1.2)
Sprinkler and drip irrigation	60.1	39.9	0.0	0.0	60.2(32.1)	39.9(21.3)	100(53.3)
Surface drainage	0.0	100.0	0.0	0.0	0(0)	100(6.4)	100(6.4)
Tube wells	100.0	0.0	0.0	0.0	100(9.7)	0(0)	100(9.7)
Animal husbandry	**22.5**	**64.2**	**0.0**	**13.3**	**22.5(21.7)**	**77.6(74.7)**	**100(96.3)**
Animal health	11.7	88.3	0.0	0.0	11.7(3.2)	88.4(23.9)	100(27)
Breed improvement	19.5	5.8	0.0	74.7	19.5(3.4)	80.6(13.9)	100(17.2)
Extension and training	0.0	100.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Feed and fodder	0.0	100.0	0.0	0.0	0(0)	100(16)	100(16)
Infrastructure	100.0	0.0	0.0	0.0	100(3.7)	0(0)	100(3.7)
Others (animal husbandry)	35.5	64.5	0.0	0.0	35.5(11.6)	64.6(21)	100(32.5)
Seed	**21.2**	**64.9**	**0.0**	**13.8**	**21.3(14)**	**78.8(51.6)**	**100(65.5)**
Others (seed)	76.9	23.1	0.0	0.0	77(10.1)	23.1(3)	100(13.1)
Seed certification	0.0	100.0	0.0	0.0	0(0)	100(24.6)	100(24.6)
Seed distribution	0.0	56.7	0.0	43.3	0(0)	100(21)	100(21)
Seed farm	100.0	0.0	0.0	0.0	100(0.2)	0(0)	100(0.2)
Seed processing centers and storage	100.0	0.0	0.0	0.0	100(2.4)	0(0)	100(2.4)
Seed production	0.0	100.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Seed testing lab	100.0	0.0	0.0	0.0	100(1.3)	0(0)	100(1.3)
Seed treatment	0.0	100.0	0.0	0.0	0(0)	100(2)	100(2)
Agriculture mechanization	**68.4**	**31.6**	**0.0**	**0.0**	**68.4(31)**	**31.7(14.4)**	**100(45.4)**
Machines and equipment assistance	85.6	14.4	0.0	0.0	85.7(17.8)	14.4(3)	100(20.8)
Others (agri. Mechanization)	53.8	46.2	0.0	0.0	53.9(13.2)	46.2(11.4)	100(24.6)

Fertilizers and INM	**17.5**	**82.5**	**0.0**	**0.0**	**17.6(4.7)**	**82.5(21.8)**	**100(26.4)**
Fertilizer labs	0.0	100.0	0.0	0.0	0(0)	100(3)	100(3)
Micro nutrients labs	0.0	100.0	0.0	0.0	0(0)	100(4.2)	100(4.2)
Soil health cards and soil testing	5.2	94.8	0.0	0.0	5.3(0.8)	94.8(14.6)	100(15.4)
Soil testing lab	100.0	0.0	0.0	0.0	100(3.9)	0(0)	100(3.9)
Crop development	**43.9**	**56.1**	**0.0**	**0.0**	**43.9(10.1)**	**56.2(12.8)**	**100(22.9)**
Coarse cereals	0.0	100.0	0.0	0.0	0(0)	100(0.9)	100(0.9)
Guar	0.0	100.0	0.0	0.0	0(0)	100(0.7)	100(0.7)
Others (crop development)	0.0	100.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Sugarcane	47.7	52.3	0.0	0.0	47.8(10.1)	52.3(11)	100(21)
Horticulture	**14.7**	**85.3**	**0.0**	**0.0**	**14.8(3.1)**	**85.3(17.8)**	**100(20.9)**
Chilly	0.0	100.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Development of horticulture farms/ facilities	100.0	0.0	0.0	0.0	100(0.5)	0(0)	100(0.5)
Floriculture	0.0	100.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
Mushroom	54.6	45.4	0.0	0.0	54.6(0.6)	45.5(0.5)	100(1.1)
Others (horticulture)	85.2	14.8	0.0	0.0	85.2(2.1)	14.9(0.4)	100(2.4)
Vegetable	0.0	100.0	0.0	0.0	0(0)	100(14)	100(14)
Vegetable seed distribution	0.0	100.0	0.0	0.0	0(0)	100(2.4)	100(2.4)
Marketing and post-harvest management	**69.4**	**30.6**	**0.0**	**0.0**	**69.4(10.9)**	**30.7(4.8)**	**100(15.7)**
Godowns and warehouses	100.0	0.0	0.0	0.0	100(8.7)	0(0)	100(8.7)
Others (marketing &PHM)	0.0	100.0	0.0	0.0	0(0)	100(1.4)	100(1.4)
Post-harvest management	0.0	100.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Setting up/ strengthening of market infrastructure	100.0	0.0	0.0	0.0	100(2.3)	0(0)	100(2.3)
Warehouses	0.0	100.0	0.0	0.0	0(0)	100(2.7)	100(2.7)
Fisheries	**74.2**	**25.8**	**0.0**	**0.0**	**74.3(8.8)**	**25.8(3.1)**	**100(11.9)**
Farmers fish ponds/ assistance including training	100.0	0.0	0.0	0.0	100(4.7)	0(0)	100(4.7)
Infrastructure/ ponds of fisheries/ dept/ agency	61.5	38.5	0.0	0.0	61.6(2)	38.5(1.3)	100(3.3)
Others (fisheries)	53.7	46.3	0.0	0.0	53.8(2.1)	46.3(1.8)	100(3.9)
Research (agri/horti/animal husbandry /etc.)	**16.9**	**83.1**	**0.0**	**0.0**	**17(1.7)**	**83.1(8.1)**	**100(9.7)**
Agri. facility	6.8	93.2	0.0	0.0	6.9(0.3)	93.2(4.2)	100(4.5)
Others (research-agri, horti& animal husbandry)	25.4	74.6	0.0	0.0	25.4(1.4)	74.7(4)	100(5.3)
Organic farming / bio fertilizer	**17.6**	**82.4**	**0.0**	**0.0**	**17.7(1.4)**	**82.4(6.6)**	**100(8)**
Others (organic farming & bio-fertilizer)	71.4	28.6	0.0	0.0	71.5(0.3)	28.6(0.1)	100(0.4)
Promotion of bio fertilizer	15.1	84.9	0.0	0.0	15.2(1.2)	84.9(6.5)	100(7.6)

Natural resource management	**66.2**	**33.8**	**0.0**	**0.0**	**66.3(3)**	**33.8(1.5)**	**100(4.5)**
Drainage for water logged	100.0	0.0	0.0	0.0	100(2)	0(0)	100(2)
Land reclamation	40.0	60.0	0.0	0.0	40(1)	60(1.5)	100(2.5)
Integrated pest management	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(3.7)**	**100(3.7)**
Pest distribution	0.0	100.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Promotion of IPM	0.0	100.0	0.0	0.0	0(0)	100(1)	100(1)
Seed treatment	0.0	100.0	0.0	0.0	0(0)	100(2.5)	100(2.5)
Dairy development	**70.7**	**29.3**	**0.0**	**0.0**	**70.8(2.4)**	**29.3(1)**	**100(3.3)**
Dairy units to farmers	0.0	100.0	0.0	0.0	0(0)	100(1)	100(1)
Promotion of milk collection centers	100.0	0.0	0.0	0.0	100(2.4)	0(0)	100(2.4)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(2)**	**100(2)**
Innovative programmes	0.0	100.0	0.0	0.0	0(0)	100(1)	100(1)
Others (innovative programmes, training & others)	0.0	100.0	0.0	0.0	0(0)	100(1)	100(1)
Extension	**31.5**	**68.5**	**0.0**	**0.0**	**31.6(0.3)**	**68.5(0.6)**	**100(0.8)**
KVKs / knowledge centers / dissemination	100.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Others (extension)	0.0	100.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
Training/ study tour	0.0	100.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Grand total	**34.1**	**54.0**	**7.8**	**4.1**	**42(226.2)**	**58.1(313.5)**	**100(539.7)**

Source: http://rkvy.nic.in/ as on April, 2013

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 4.1.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri. expenditure
2002-03	959	-192	768	6207	12.4	3.9	
2003-04*	1071	-452	620	6570	9.4	2.9	
2004-05	909	1877	2786	10433	26.7	12.6	
2005-06	993	422	1415	8978	15.8	6.5	
2006-07	1064	455	1519	12273	12.4	6.1	
10th Plan	**4996**	**2111**	**7107**	**44461**	**15.3**	**6.4**	
2007-08	1484	767	2251	12664	17.8	9.1	
2008-09	1267	1017	2285	13909	16.4	8.6	
2009-10	1351	1219	2570	15318	16.8	9.8	**3.3**
2010-11	1416	600	2016	14235	14.2	7.3	
2011-12*	1790	331	2121	17173	12.3	7.1	
11th Plan	**7307**	**3934**	**11242**	**73299**	**15.5**	**8.4**	
% change over 10th plan	**46.3**	**86.4**	**58.2**	**64.9**			

Source: State Finances, RBI

**Note: ***Revised estimates, rest all accounts; Agriculture and allied activities includes Irrigation and flood control

Budgetary expenditure is accounts only developmental expenditure; State budget may or may not include RKVY fund

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 4.1.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	495.5 (6.9)	1701.4 (10.4)	243.4
2	Soil and Water Conservation	165.5 (2.3)	199.1 (1.3)	20.3
3	Animal Husbandry	624.6 (8.7)	1372.8 (8.4)	119.8
4	Dairy Development	16.5 (0.3)	15.7 (0.1)	-4.9
5	Fisheries	52.3 (0.8)	111.3 (0.7)	113.1
6	Forestry and Wild Life	660.2 (9.2)	931 (5.7)	41.0
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	-208 (-14.4)	1708 (10.5)	-264.3
9	Agricultural Research and Education	439.7 (6.1)	861.2 (5.3)	95.9
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	157.1 (2.2)	1013 (6.2)	544.8
12	Other Agricultural Programmes	5.8 (0.1)	7 (0.1)	21.5
13	Major and Medium Irrigation	2168.4 (30)	4002.1 (24.5)	84.6
14	Minor Irrigation	84.8 (1.2)	33 (0.3)	-61.2
15	Flood Control and Drainage	0 (0)	0 (0)	0.0
16	Others	3412.8 (47.2)	4434.6 (27.1)	29.9
	Total	**7243.2 (100)**	**16389.7 (100)**	**126.3**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the Parenthesis indicate percentage to their respective total.

Table 4.1.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin

(At 2004-05 Prices)

(Per cent)

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
I. Primary								
Agriculture	21.9	19.6	20.2	18.6	18.5	16.2	15.8	15.9
Forestry & Logging	1.1	1.0	0.9	0.9	0.8	0.8	0.7	0.7
Fishing	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
Mining & Quarrying	0.2	0.3	0.3	0.3	0.2	0.1	0.0	0.0
Total Primary	23.3	21.1	21.6	19.9	19.7	17.3	16.7	16.7
II. Secondary								
Manufacturing	21.4	21.1	20.6	20.6	19.6	19.4	19.3	18.4
(i) Manu-Registered	14.5	14.5	14.2	14.3	13.6	13.7	13.7	13.1
(ii) Manu-Unregistered	6.8	6.6	6.4	6.3	5.9	5.7	5.5	5.3
Construction	9.7	9.6	9.6	9.0	8.7	8.8	8.7	8.5
Electricity, Gas and Water Supply	1.7	1.7	1.6	1.6	1.6	1.8	1.7	1.7
Total Secondary	32.7	32.3	31.8	31.3	29.9	30.0	29.6	28.7
Industry (Mining & Quarrying + Secondary)	32.9	32.7	32.1	31.6	30.2	30.1	29.7	28.7
Services								
Transport, Storage & Communication	8.1	8.8	8.8	9.2	9.0	8.8	8.7	8.8
Railways	1.2	1.5	1.4	1.7	1.4	1.4	1.1	1.1
Transport other means (Including Storage)	5.6	5.9	6.0	6.1	6.1	6.0	6.0	6.1
Storage	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Communication	1.1	1.3	1.3	1.4	1.5	1.5	1.5	1.5
Trade, Hotels and Restaurants	16.2	16.7	17.1	18.4	19.2	20.7	21.8	22.1
Banking & Insurance	3.2	3.6	4.0	4.4	4.5	4.6	5.3	6.4
Real Estate, Ownership of Dwellings and Business Services	8.8	9.7	9.2	9.4	9.4	9.5	9.4	9.0
Public Administration	2.5	2.5	2.2	2.2	2.6	2.5	2.5	2.4
Other Services	5.3	5.3	5.2	5.2	5.7	6.4	6.0	6.0
Total Services	**44.0**	**46.5**	**46.6**	**48.8**	**50.3**	**52.7**	**53.7**	**54.6**
State Domestic Product	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: www.haryanastat.com

Table 4.1.8: Year over Year Growth in State Agricultural Economy (at 2004-05 Prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-1.1	6.5	34.6	60.3	174.4	57451.5
2003-04	7.7	9.9	35.3	63.9	180.8	60562.9
2004-05	3.4	8.4	35.3	64.3	182.2	62730.4
2005-06	-1.8	9.2	35.7	65.0	182.4	60923.8
2006-07	14.2	11.2	35.6	63.9	179.8	69741.1
10th Plan Average	**4.5**	**9.0**	**35.3**	**63.5**	**179.9**	**62281.9**
2007-08	-0.1	8.4	35.9	64.6	179.7	68961.3
2008-09	7.2	8.2	35.8	64.8	181.3	74307.0
2009-10	-1.4	11.7	35.5	63.5	178.9	73768.2
2010-11	5.2	8.4	35.2	65.1	184.9	78321.3
2011-12	8.5	7.8	35.2	65.1	184.9	84950.4
11th Plan Average	**3.9**	**8.9**	**35.5**	**64.6**	**181.9**	**76061.7**

Source: Directorate of Economics and Statistics, GOI
Note: *land productivity = agricultural GSDP/ha of NSA

Table 4.1.9: Trend in Inputs Use in Haryana

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	29.7	52.0	85.8	175.3	86.2	152.7
2003-04	29.7	53.4	84.0	180.0	83.6	161.7
2004-05	29.5	54.3	83.8	184.0	84.6	155.1
2005-06	29.4	54.5	82.3	185.5	83.7	166.7
2006-07	29.9	54.6	84.1	182.6	85.4	177.2
10th Plan Average	**29.6**	**53.8**	**84.0**	**181.5**	**84.7**	**162.7**
2007-08	30.3	55.5	84.2	183.6	86.0	189.0
2008-09	28.8	55.3	80.5	192.1	85.3	199.6
2009-10	30.7	55.5	86.5	180.7	87.3	209.9
2010-11	28.9	55.4	82.1	192.0	85.2	213.8
2011-12	28.9	55.4	82.1	192.0	85.2	224.9
11th Plan Average	**29.5**	**55.4**	**83.0**	**188.1**	**85.8**	**207.4**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area /Gross sown area*100

Table 4.1.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	0.5	4.6	4.1	3.6	2.5	-0.6
Wheat	0.7	1.4	0.7	1.2	4.9	3.7
Jowar	-2.4	3.8	7.0	-6.4	6.9	14.1
Bajra	1.9	18.1	11.2	-1.1	3.8	4.8
Maize	-4.6	-4.0	-0.3	-8.0	-2.2	5.3
Barley	6.3	8.2	1.2	3.7	5.3	4.1
Coarse Cereals	1.1	14.1	9.7	-1.7	3.7	5.4
Total Cereals	0.6	2.4	1.7	1.3	4.1	2.8
Gram	10.7	14.8	3.7	-2.8	17.5	12.6
Arhar/Tur	21.6	26.8	7.9	-7.4	-7.1	0.3
Other Pulses	7.4	12.1	10.1	-13.4	-12.4	-17.8
Total Pulses	2.0	6.0	2.7	3.1	8.4	1.9
Total Foodgrains	0.6	2.4	1.8	1.3	4.1	2.8
Groundnut	84.0	84.2	1.2	7.8	11.1	3.8
Sesamum	8.3	27.2	8.3	-1.9	2.3	4.2
Rapeseed & Mustard	2.8	1.8	0.7	-1.8	1.9	3.4
Sunflower	63.2	61.6	1.7	-3.0	-2.7	1.6
Total Oilseeds	3.1	2.4	0.7	-2.0	1.2	3.1
Cotton	-2.7	24.0	28.7	4.8	9.7	-15.0
Total Fibers	-2.7	24.0	28.7	-21.2	-20.6	-18.9
Sugarcane	-1.8	1.5	3.6	-5.4	-3.4	2.1

Source*:* Directorate of Economics and Statistics, GOI

Table 4.1.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	2.9	1.6	15.2	1.8
2003-04	1.9	2.3	2.3	11.2
2004-05	0.0	0.0	15.7	7.5
2005-06	1.5	-22.2	2.1	14.6
2006-07	1.3	14.3	161.8	24.6
10th plan	**1.5**	**-0.8**	**39.4**	**11.9**
2007-08	1.4	2323.8	3.6	11.9
2008-09	5.6	18.6	-7.0	13.5
2009-10	4.5	4.8	0.8	31.7
2010-11	4.3	32.4	3.1	-4.2
2011-12*	-	-	-	10.2
11th plan	**4.0**	**594.9**	**0.1**	**12.6**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

4.2 HIMACHAL PRADESH

4.2.1. Background Information

Himachal Pradesh lies in the lap of Himalayas and is located in the northern region of India. It is bordered by Jammu & Kashmir on the north, Punjab on the west and south west, Haryana on the south, Uttarakhand on the south-east and China on the east. It is the 17th largest State in the country, with a total geographical area of 55,673 sq.km (21,495 sq.mt.), that accounts for 1.69 per cent of the country's total geographical area. The economy of Himachal Pradesh is largely agriculture based. However, only around 9.68 per cent of the State's total geographical area is identified as net sown area (NSA) and 17.05 per cent as gross cropped area (GCA). The cropping intensity of the State is estimated at around 176 per cent, indicating that farmers grow less than 2 crops in a year on every piece of land. According to 2011 Census report, the total population of the State was 68.65 lakh that was only 0.57 percent of the total population of the country. Agriculture sector supports more than 93 per cent of the population. The literacy rate in Himachal Pradesh was quite high, 82.8 compared to all India figures of 74 per cent. The population density in Himachal Pradesh was 123 per square km in 2011 as compared to 382 per square km of all India.

The share of primary sector in the GSDP of the State was more than that of all India. The share declined from 23 per cent in the terminal year of the 10th Plan to around 17 per cent in 2011-12 (end of 11th Plan). The share of secondary sector in Himachal Pradesh was fairly higher as compared to the neighbouring States of Punjab and Haryana as well as the average of all India. The share of secondary sector in the State GSDP increased from 40 per cent by the end of 10th Plan by marginally to 41 per cent by the end of 11th Plan, vis-a-vis services sector increased from 37 per cent to 42 per cent during the same time period. Table 4.2.7 depicts the growth rate of agriculture and allied sector in Himachal Pradesh**.** Agricultural growth rate in the State was fluctuating but averaged at 4.2 per cent per annum during the 10th Plan that hovered high and low in the 11th Plan and averaged at half of that of 10th Plan, i.e., only 2.3 per cent per annum. Due to slow growth of agriculture and allied sectors in the country, the RKVY programme was implemented to reinvent growth in agriculture in 2005-06. RKVY aimed at achieving 4 per cent annual growth in the agriculture sector during the 11th plan (2007-12).

4.2.2. Distribution of Allocation and Expenditure across Sectors

This section mainly focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector. It is expected that the allocation and expenditure would move in the same direction. Nonetheless,

that may not be true, but for present evaluation we shall focus our concentration on the expenditure actually incurred. We also look at the allocation data and the ratio of expenditure to allocation to point out whether there was any diversion taking place in the priorities set initially.

Data in Table 4.2.1 and Figure 4.2 present the numbers of projects undertaken under RKVY, their amount of allocation and expenditure, expenditure-allocation ratio and expenditure incurred per project. With respect to expenditure across sectors, seven major sectors (horticulture, organic farming/bio fertilizer, micro/minor irrigation, animal husbandry, crop development, seed and marketing and post-harvest management) contributed more than 80 per cent of the total expenditure(Figure 4.2) and remaining 11 sectors utilized remaining amount. The expenditure per project was less in Himachal Pradesh compared to other neighbouring States. Per project expenditure was highest for organic farming with Rs. 4.9 croreand lowest in the fertiliser and INM spending only Rs. 0.3crore per project.

If one looks at the priorities set during the beginning of the Plan, the difference in allocation and expenditure was only nominal. Only in animal husbandry, agricultural mechanisation and fertilizer and INM where expenditure was far less than the allocation planned. Out of Rs 227 crore of allocation in Himachal Pradesh around Rs. 204 crore was spent by the State Government during the 11th Five Year Plan. Interestingly, expenditure per project in a few lower priority sectors like natural resource management, dairy development, innovative programmes/training/capacity building etc., was found higher when compared with few major priority sectors like, horticulture, animal husbandry and marketing and post-harvest management.

The sectors that had spent 100 per cent of the amount allocated were horticulture, crop development, natural resource management, innovative programmes and training and capacity building, extension and information technology. The sectors where expenditure covered more than 90 per cent of the allocated amount were micro and minor irrigation, organic farming and bio fertilizer, seed, marketing and post-harvest, fisheries, research, integrated pest management and nonfarm activities. The sector that spent the least allocated amount was fertilizer and INM (only 36 per cent of the allocation). At an aggregate out of total allocation under RKVY in Himachal Pradesh is as high as 90 per cent was actually spent. In comparison Punjab spent only 22 per cent and Haryana spent around 73 per cent of the total allocation amount.

4.2.3. Sector-Wise Size of the Projects based on the Expenditure

Table 4.2.2 presents the numbers and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY per project has been divided into Rs. 0-1 crore, Rs. 1-10 crore and Rs. 10-25 crore. Out of the total expenditure, 67 per cent of the projects incurred only 23 per cent of the expenditure at the bottom spending less than Rs. 1 crore amounts

on each project. On the other extreme, less than 2 per cent of the projects incurred around 16 per cent amount having each project between Rs. 10 to 25 crore. In the category of Rs. 10-25 crore, the highest percentage amount was spent in the projects under crop development, followed by organic farming and horticulture. Between Rs.1and10 crore values of each projects, highest percentage amount spent was under innovative programmes which spent the whole amount within this category only, followed by micro irrigation, natural resource management, extension and fisheries. Agriculture mechanisation, fertilizer and INM, information technology, integrated pest management and nonfarm activities had the entire project that spent less than Rs 1 crore on each project.

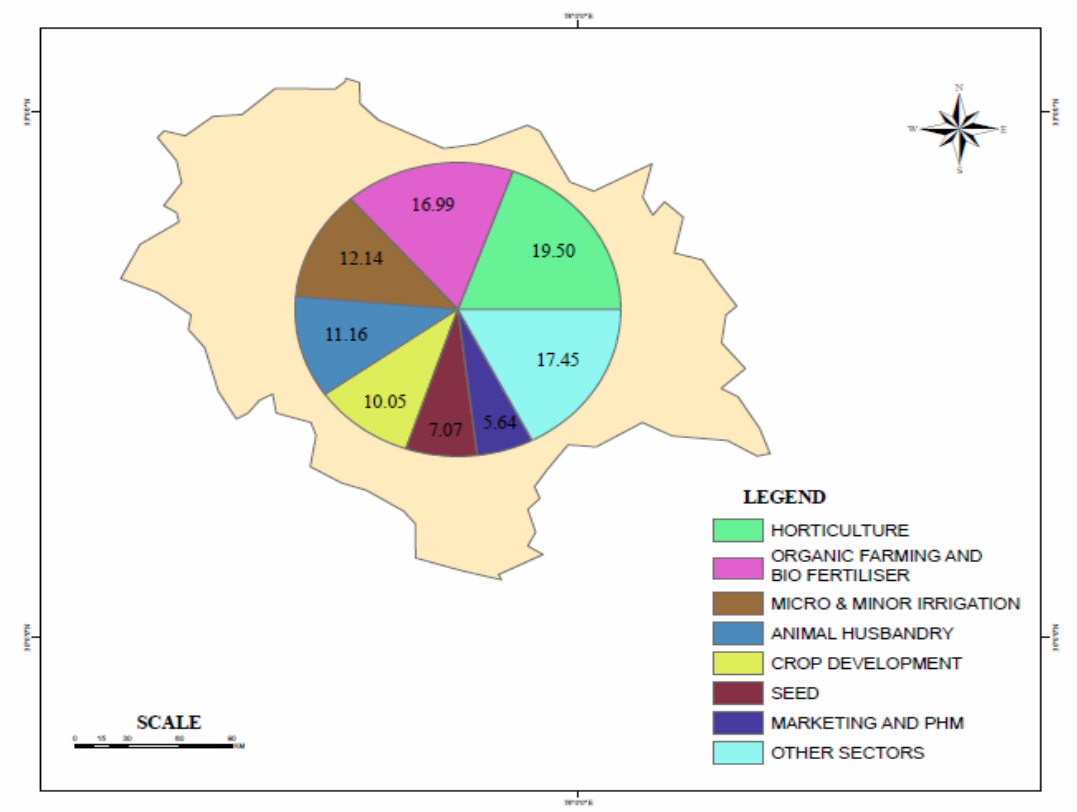


Figure 4.2: Share of Expenditure across Sectors

Note: Other sectors include, Fisheries, Natural resource management, Research (agri/horti/animal husbandry/ etc.), Dairy development, Innovative programmes/ training/ capacity building/ others, Extension, Agriculture mechanization, Integrated pest management, Information technology, Fertilisers and INM and Non-farm activities

4.2.4. Sector-Wise Expenditure according to Status

The status-wise expenditure is presented in Table 4.2.3. It is seen from the table that there is hardly any sector where expenditure has exceeded the allocation except a marginal case of horticulture sector and crop development in Himachal Pradesh. Out of the total amount spent in

Himachal Pradesh, only less than 40 per cent was spent on projects completed or substantially completed and 60 per cent was spent on projects in progress and ongoing while only half a percentage was spent on projects abandoned or not yet implemented. The completed projects belongs to only small sectors like natural resource management, extension and nonfarm activities where total expenditure was spent on the completed projects and no amount was deferred into ongoing projects. On the other extreme, a large amount of expenditure was reported in the ongoing activities in most of the projects like horticulture, organic farming, animal husbandry and crop development and so on. Micro/minor irrigation sector had highest expenditure with respect to completed and substantially completed projects spending a sum of Rs.15.3crore followed by organic farming and bio fertilizer, horticulture and seed sectors with expenditure of Rs.12.7, Rs.12.6 and Rs.11crores, respectively. Fertilizers and INM has least number of completed and substantially completed projects with an expenditure of Rs. 0.1 crores followed by integrated pest management and nonfarm activities with expenditure of Rs. 0.3, and Rs.0.6 crores, respectively. The sector like research, agriculture mechanization and information technology did not complete any project although the projects were meant to be completed in the 11th Plan but they were staggered to 12th Plan. Only fisheries sector had abandoned projects with an expenditure of Rs 1.1 crore.

4.2.5. Sector and Sub Sector Wise Distribution of Projects by Nature

Table 4.2.4 presents sector and sub-sector-wise expenditure on Infrastructure and non-infrastructure projects of normal, National and State Flagship programmes in Himachal Pradesh. Out of the total expenditure of Rs. 204 crore under RKVY scheme in Himachal Pradesh, there was no amount spent on development of infrastructure in agriculture and allied activities. It is to be noted that there was no National Sponsored Flagship Programme under taken in Himachal Pradesh under the programme of RKVY. Non infrastructure expenditure of normal and State flagship projects accounted for 79.3 per cent and 20.7 per cent of the total expenditure, respectively. The total expenditure incurred on non-infrastructure projects was Rs. 203.9 crore. The horticulture sector accounted for highest share of Rs. 39.8 crore followed by organic farming/ bio fertiliser accounting for Rs.34.7 crore of the total expenditure under RKVY projects in Himachal Pradesh.

Within the sub-sectors, highest expenditure was incurred on promotion of organic farming with Rs. 32.2 crores, followed by fruits (Rs. 16 crore), pump sets diesel/electric (Rs. 10.6 crore) and others including micro & minor irrigation (Rs. 9 crore). The State Flagship programmes mainly emphasized on sectors, like organic farming/ bio fertilizer, micro/minor irrigation, seed and marketing and post-harvest management.

4.2.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 4.2 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Himachal Pradesh as provided in the website. Our purpose here to verify whether the stated targets set at the beginning of the project have been achieved or not subject to information provided by the State Government on the website. Under horticulture, the major components covered were development of demonstration orchards, strengthening of floriculture and apple, mango and litchi orchards, establishment of mushroom units, development of bee keeping, development of precision vegetable cultivation, protected cultivation in green house etc. The achievement under horticulture projects included creation of 45 lakh litre water storage, 170 metric tonnes of vermin-compost production, orchard water management on 500 hectares, training provided to 1240 farmers, provided pollination services to farmers through creation of 1000 bee colonies and 2000 sheep breeder awareness camps were organized. Under crop development and seed, the major components covered were enhancement of productivity of main crops grown in the State, promoting SRI in mountain farms, seed treatment and seed multiplication and training to seed growers and production of quality seeds. Under the programme around 17463 quintals of hybrid maize seed and 8600 quintals of fodder seed were distributed to the farmers. The components covered under marketing and post-harvest management were cold chain for milk and milk products, wool storage facilities, creation of collection centres for vegetables and strengthening of Agmarking labs. The major achievement was installation of 15 numbers of cold chains that raised chilling capacity by 16000 litres per day.

4.2.7. An Assessment of RKVY Performance in the State and Concluding Remarks

In Himachal Pradesh, RKVY project comprises of 18 sectors which include 33 sub sectors. Out of the 18 sectors, 7 sectors absorbed 82.56 per cent of the expenditure. Among the major sectors, horticulture utilized the major funds that were followed by organic farming/bio fertilizer, micro/minor irrigation, animal husbandry, crop development, seed and marketing and post-harvest management. The State has not taken up any infrastructure project under RKVY to develop the infrastructure and assets in the agriculture and allied sectors. The State spent 21 per cent of the total expenditure on the State flagship projects especially in the organic farming and bio fertilizer sectors. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. The pattern of expenditure incurred also shows the priority areas chosen by the State Government to achieve higher productivity in agriculture and to raise the growth rate of agriculture to help achieve higher growth path for the State economy.

If one looks at the expenditure pattern by sub sectors (Table 4.2.4), it clearly reveals that the State emphasized on organic farming, area expansion of fruits, vegetables and floriculture under

the horticulture sector and crop development, pump sets under micro irrigation, quality seed distribution under seed sector, animal health and infrastructure under animal husbandry, strengthening market infrastructure under marketing and post-harvest management and water conservation, development of fishery under other minor sectors. Looking at the agriculture performance in the State, it is observed that the priority areas chosen by the State Government more or less are justified. The main strength of Himachal Pradesh agriculture has remained in the high performance of horticulture sector and animal husbandry. The high priority given to horticulture especially to fruits, vegetables and floriculture would strengthen the horticulture sector in the State. A special feature on mushroom cultivation indicates the climate support this particular activity has in the State. The priority of the State Government towards promotion of organic farming is a step in the right direction. The priority towards market infrastructure has also an indication of reducing wastage that is widespread among perishable crops. The State also needs to upgrade processing sector especially in the fruits and medicinal and aromatic crops that would increase value addition and increase farmers' income and bring more agro based employment.

We try to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor alone. Table 4.2.5 shows that although revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 52 per cent in the 11th Plan over 10th Plan (compared to 65 per cent in the case of Haryana), however, percentage of agriculture share in the State budget increased only marginally, from 16 percent in the 10th Plan to 18 per cent during the 11th Plan. Out of total expenditure in agriculture in the State, RKVY shared 2.7 per cent of the total expenditure that was more than the neighbouring States of Punjab and Haryana. Agriculture expenditure as a percentage of State GSDP increased from 10.9 per cent in the 10th Plan to 16.5 per cent in the 11th Plan. Looking at sub sector budgetary expenditure (Table 4.2.6), the highest percentage change over the previous Plan happened in flood control and drainage, major, medium and minor irrigation, dairy development and animal husband, some of these also received prime priority under RKVY.

We have already stated that agricultural GSDP grew at a rate of 4.2 per cent in the 10th Plan that declined to 2.3 per cent in the 11th Plan in the State that was around half of the target set under the RKVY. There was no increase in the gross cropped area as well cropping intensity during the above mentioned period (Table 4.2.8). However, land productivity per hectare in value terms increased from Rs. 113 thousand in the 10th Plan to approximately Rs 128 thousand in the 11th Plan, a part of that may be due to inflation factor. Although micro irrigation projects were taken up, the net and gross irrigated area remained almost at the level where it was in the previous Plan period. There was some increase in irrigation intensity from 1710.4 during the 10th Plan to 178.1 at the end of 11th Plan (Table 4.2.9). The growth rate in production (that is combination of area

and yield) increased in the case of rice, wheat, small millets, barley, sesamum and rapeseed mustard but declined for maize, gram, other pulses, and sugarcane (Table 4.2.10). Average annual growth of livestock and fishery production in State increased significantly especially in milk production from 3 per cent per annum during 10th FYP to 6.4 per cent per annum during 11th FYP. Similarly, egg production moved from -1.2 per cent per annum growth during the 10th Plan period to 7.4 per cent per annum during the end of 11th Plan. Fish production increased from -0.7 per cent to 3.4 per cent per annum and meat production from -3.2 per cent to 2.1 per cent per annum during the same time period (Table 4.2.11).

To conclude, the information displayed on the RKVY website proclaims having achieved most of the output and outcome stated for the RKVY programme. However, on the cross checking, the performance of agriculture in the State has not been very great as in most of the indicators, the performance of agriculture remained only moderate although allied activities like animal husbandry, fisheries etc., put up a far better performance in the State.

TABLES

Table 4.2.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th Five Year Plan

Sectors	No. of project	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio	Expenditure per Project (Rs. crore)
Horticulture	48 (48)	38.8 (17.2)	39.7 (19.6)	1.0	0.8
Organic Farming / Bio Fertiliser	7 (7)	36.9 (16.3)	34.6 (17)	0.9	4.9
Micro/Minor Irrigation	9 (9)	25.1 (11.1)	24.7 (12.2)	1.0	2.7
Animal Husbandry	36 (38)	39.5 (17.4)	22.7 (11.2)	0.6	0.6
Crop Development	8 (8)	20 (8.8)	20.4 (10.1)	1.0	2.6
Seed	12 (12)	14.9 (6.6)	14.4 (7.1)	1.0	1.2
Marketing & PHM	11 (12)	12.3 (5.5)	11.5 (5.7)	0.9	1.0
Fisheries	13 (14)	10.9 (4.9)	10.9 (5.4)	1.0	0.8
NRM	4 (4)	7.9 (3.5)	7.9 (3.9)	1.0	2.0
Research	5 (5)	4.3 (2)	4.2 (2.1)	1.0	0.8
Dairy Development	3 (3)	5.0 (2.3)	4.0 (2)	0.8	1.4
Innovative Programmes	2 (2)	2.3 (1.1)	2.3 (1.2)	1.0	1.2
Extension	2 (2)	1.6 (0.8)	1.6 (0.9)	1.0	0.8
Agriculture Mechanization	2 (3)	3.1 (1.4)	1.5 (0.8)	0.5	0.5
Integrated Pest Management	2 (2)	1.1 (0.5)	1.1 (0.6)	1.0	0.5
Information Technology	1 (1)	0.6 (0.3)	0.7 (0.4)	1.0	0.7
Fertilisers & INM	2 (2)	1.7 (0.8)	0.6 (0.4)	0.4	0.3
Non Farm Activities	1 (1)	0.6 (0.3)	0.5 (0.3)	1.0	0.6
Grand Total	**168 (173)**	**227.1 (100)**	**203.9 (100)**	**0.9**	**1.2**

Source: www.rkvy.nic.in as on April, 2013;

Note: Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3).

Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis).

INM: Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 4.2.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Grand Total*	
	No.s	**Expenditure**	**No.s**	**Expenditure**	**No.s**	**Expenditure**	**No.s**	**Expenditure**
Horticulture	79.1	31.0	18.7	42.5	2.1	26.4	48(100)	39.8(100)
Organic farming / bio fertiliser	28.5	5.	57.1	64.9	14.3	29.5	7(100)	34.7(100)
Micro/minor irrigation	22.2	5.5	77.7	94.5	0	0	9(100)	24.8(100)
Animal husbandry	86.1	53.2	13.8	46.7	0	0	36(100)	22.8(100)
Crop development	50	12.3	37.5	29.1	12.5	58.5	8(100)	20.5(100)
Seed	41.6	23.3	58.3	76.6	0	0	12(100)	14.5(100)
Marketing and post-harvest management	45.4	14.5	54.5	85.5	0	0	11(100)	11.5(100)
Fisheries	76.9	19.5	23.0	80.5	0	0	13(100)	11(100)
Natural resource management	25	9.0	75	90.9	0	0	4(100)	8(100)
Research (agri/horti/animal husbandry/ etc.)	80	48.0	20	52	0	0	5(100)	4.3(100)
Dairy development	66.6	28.5	33.3	71.5	0	0	3(100)	4.1(100)
Innovative programmes/ training/ capacity building/ others	0	0	100	100	0	0	2(100)	2.4(100)
Extension	50	16.0	50	83.9	0	0	2(100)	1.7(100)
Agriculture mechanisation	100	100	0	0	0	0	2(100)	1.6(100)
Integrated pest management	100	100	0	0	0	0	2(100)	1.1(100)
Information technology	100	100	0	0	0	0	1(100)	0.7(100)
Fertilisers and INM	100	100	0	0	0	0	2(100)	0.7(100)
Non-farm activities	100	100	0	0	0	0	1(100)	0.6(100)
Grand Total	**67.2**	**22.6**	**30.1**	**61.3**	**1.8**	**16.1**	**168(100)**	**203.9(100)**

Source:http://rkvy.nic.in/ as on April, 2013;

Note:* indicates the numbers in absolute figures, Figures in the parenthesis are percentage to the respective total

Nos: Number of projects, Expd: Expenditure;

Table 4.2.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/Not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
Horticulture	27	27.1	21	12.6	0	0.0
Organic Farming / Bio Fertilizer	4	22.0	3	12.7	0	0.0
Micro/Minor Irrigation	4	9.4	5	15.3	0	0.0
Animal Husbandry	26	16.3	12	6.5	0	0.0
Crop Development	6	16.3	2	4.1	0	0.0
Seed	4	3.5	8	11.0	0	0.0
Marketing & PHM	9	8.4	3	3.1	0	0.0
Fisheries	4	8.4	7	1.4	3	1.1
NRM	0	0.0	4	7.9	0	0.0
Research	5	4.2		0.0	0	0.0
Dairy Development	1	0.6	2	3.5	0	0.0
Innovative programmes/ training/ capacity building/ others	1	1.0	1	1.3	0	0.0
Extension	0	0.0	2	1.7	0	0.0
Agriculture Mechanization	3	1.5	0	0.0	0	0.0
Integrated Pest Management	1	0.8	1	0.3	0	0.0
Information Technology	1	0.7	0	0.0	0	0.0
Fertilizers & INM	1	0.6	1	0.1	0	0.0
Non Farm Activities	0	0.0	1	0.6	0	0.0
Grand Total	**97**	**120.6**	**73**	**82.1**	**3**	**1.1**

Source: http://rkvy.nic.in/ as on April, 2013
Note: No. : Number of projects

Table 4.2.4: Sector and Sub Sector Wise Classification by Nature of Projectunder RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project	State Flagship project	Total Non-infra structure	Grand Total
	Non-infra structure	Non-infra structure		
Horticulture	**98.1**	**1.9**	**100(39.8)**	**100(39.8)**
Development of horticulture farms/ facilities	100.0	0.0	100(7.2)	100(7.2)
Floriculture	100.0	0.0	100(6.3)	100(6.3)
Fruits	98.7	1.3	100(16)	100(16)
Mushroom	100.0	0.0	100(0.5)	100(0.5)
Nurseries and green houses	87.0	13.0	100(4.2)	100(4.2)
Others (horticulture)	100.0	0.0	100(4.1)	100(4.1)
Vegetable	100.0	0.0	100(1.8)	100(1.8)
Organic farming / bio fertilizer	**35.4**	**64.6**	**100(34.7)**	**100(34.7)**
Promotion of bio fertilizer	0.0	100.0	100(1)	100(1)
Promotion of organic farming	33.5	66.5	100(32.2)	100(32.2)
Vermi composting	100.0	0.0	100(1.5)	100(1.5)
Micro/minor irrigation	**82.9**	**17.1**	**100(24.8)**	**100(24.8)**
Others (micro & minor irrigation)	100.0	0.0	100(9.0)	100(9.0)
Percolation tanks/ minor irrigation tanks	100.0	0.0	100(3)	100(3)
Pump sets (diesel/electric)	81.0	19.0	100(10.6)	100(10.6)
Shallow wells/ dug well	0.0	100.0	100(2.3)	100(2.3)
Animal husbandry	**92.2**	**7.8**	**100(22.8)**	**100(22.8)**
Animal health	100.0	0.0	100(6.2)	100(6.2)
Breed improvement	69.7	30.3	100(2.6)	100(2.6)
Extension and training	80.5	19.5	100(3.6)	100(3.6)
Feed and fodder	100.0	0.0	100(2.5)	100(2.5)
Infrastructure	100.0	0.0	100(5.8)	100(5.8)
Others (animal husbandry)	86.4	13.6	100(2.3)	100(2.3)
Crop development	**100.0**	**0.0**	**100(20.5)**	**100(20.5)**
Coarse cereals	100.0	0.0	100(2.2)	100(2.2)
Others (crop development)	100.0	0.0	100(5.1)	100(5.1)
Paddy	100.0	0.0	100(0.6)	100(0.6)
Vegetable	100.0	0.0	100(12)	100(12)
Wheat	100.0	0.0	100(0.7)	100(0.7)
Seed	**85.3**	**14.7**	**100(14.5)**	**100(14.5)**
Others (seed)	20.1	79.9	100(2.7)	100(2.7)
Seed distribution	100.0	0.0	100(6.8)	100(6.8)
Seed farm	100.0	0.0	100(1.7)	100(1.7)
Seed production	100.0	0.0	100(2.9)	100(2.9)
Seed testing lab	100.0	0.0	100(0.5)	100(0.5)
Marketing and post-harvest management	**89.4**	**10.6**	**100(11.5)**	**100(11.5)**
Cold storages and cold chains	100.0	0.0	100(2.1)	100(2.1)
Godowns and warehouses	100.0	0.0	100(1.1)	100(1.1)
Setting up/ strengthening of market infrastructure	85.4	14.6	100(8.4)	100(8.4)
Fisheries	**100.0**	**0.0**	**100(11)**	**100(11)**
Farmers fish ponds/ assistance including training	100.0	0.0	100(1.1)	100(1.1)

Fish marketing	100.0	0.0	100(1)	100(1)
Infrastructure/ ponds of fisheries/ dept/ agency	100.0	0.0	100(7.8)	100(7.8)
Others (fisheries)	100.0	0.0	100(1.1)	100(1.1)
Natural resource management	**32.4**	**67.6**	**100(8)**	**100(8)**
Water conservation structures and watershed dev	32.4	67.6	100(8)	100(8)
Research (agri/horti/animal husbandry etc.)	**100.0**	**0.0**	**100(4.3)**	**100(4.3)**
Agri. research project	100.0	0.0	100(3.6)	100(3.6)
Others (research-agri, horti& animal husbandry)	100.0	0.0	100(0.7)	100(0.7)
Dairy development	**100.0**	**0.0**	**100(4.1)**	**100(4.1)**
Dairy units to farmers	100.0	0.0	100(3.6)	100(3.6)
Others (dairy development)	100.0	0.0	100(0.6)	100(0.6)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**100(2.4)**	**100(2.4)**
Innovative programmes	0.0	100.0	100(1.3)	100(1.3)
Others (innovative programmes, training & others)	0.0	100.0	100(1.1)	100(1.1)
Extension	**16.0**	**84.0**	**100(1.7)**	**100(1.7)**
New approaches to extension	16.0	84.0	100(1.7)	100(1.7)
Agriculture mechanization	**100.0**	**0.0**	**100(1.6)**	**100(1.6)**
Machines and equipment assistance	100.0	0.0	100(1.6)	100(1.6)
Integrated pest management	**100.0**	**0.0**	**100(1.1)**	**100(1.1)**
Promotion of IPM	100.0	0.0	100(1.1)	100(1.1)
Information technology	**100.0**	**0.0**	**100(0.7)**	**100(0.7)**
Development of it facilities	100.0	0.0	100(0.7)	100(0.7)
Fertilizers and INM	**8.7**	**91.3**	**100(0.7)**	**100(0.7)**
Other labs	100.0	0.0	100(0.1)	100(0.1)
Soil health cards and soil testing	0.0	100.0	100(0.6)	100(0.6)
Non-farm activities	**100.0**	**0.0**	**100(0.6)**	**100(0.6)**
Post-harvest processing facilities	100.0	0.0	100(0.6)	100(0.6)
Grand total	**79.3**	**20.7**	**100(203.9)**	**100(203.9)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * Figures in parenthesis indicates the absolute values which are in crores

Table 4.2.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 Prices)

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri. expenditure
2002-03	688	72	759	3992	19.0	14.0	
2003-04*	470	119	588	3727	15.8	9.7	
2004-05	455	85	540	3692	14.6	8.8	
2005-06	539	110	648	4245	15.3	10.0	
2006-07	590	190	780	5071	15.4	12.1	
10th Plan	**2741**	**575**	**3316**	**20726**	**16.0**	**10.9**	
2007-08	745	230	975	5657	17.2	13.8	
2008-09	820	215	1036	6029	17.2	14.8	
2009-10	1041	274	1314	6443	20.4	21.2	**2.7**
2010-11	919	261	1180	6703	17.6	15.9	
2011-12*	915	277	1192	6606	18.0	16.9	
11th Plan	**4439**	**1257**	**5696**	**31438**	**18.1**	**16.5**	
% change over 10th plan	**61.9**	**118.6**	**71.8**	**51.7**			

Source: State Finances, RBI
Note: * - Revised estimates, rest all accounts
Agriculture and allied activities includes Irrigation and flood control
Budgetary expenditure is accounts only developmental expenditure
Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100
State budget may or may not include RKVY fund

Table 4.2.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	95.5 (14.4)	194 (12.7)	103.2
2	Soil and Water Conservation	39.5 (6)	84.4 (5.6)	113.7
3	Animal Husbandry	68.3 (10.3)	149.2 (9.8)	118.5
4	Dairy Development	5.1 (0.8)	11.3 (0.8)	124.5
5	Fisheries	5.9 (0.9)	12.3 (0.8)	108.8
6	Forestry and Wild Life	197.8 (29.7)	369.6 (24.2)	86.9
7	Plantations	0.6 (0.1)	0.9 (0.1)	0.0
8	Food Storage and Warehousing	5.7 (0.9)	106.9 (7)	0.0
9	Agricultural Research and Education	51.8 (7.8)	84.1 (5.5)	62.6
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	14.6 (2.2)	23.8 (1.6)	62.8
12	Other Agricultural Programmes	0.1 (0.1)	0 (0)	-100.0
13	Major and Medium Irrigation	4.4 (0.7)	11.7 (0.8)	168.6
14	Minor Irrigation	80.1 (12)	201.6 (13.2)	151.8
15	Flood Control and Drainage	0.2 (0.1)	0.7 (0.1)	251.1
16	Others	98.2 (14.8)	279.3 (18.3)	184.4
	Total	**667.1 (100)**	**1529.1 (100)**	**129.2**

Source: State Finances, RBI**;**

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are Categorized under others; Figures in the parenthesis are percentage to the respective total

Table 4.2.7: Percentage share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 Prices)

(Per cent)

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Primary Sector	25.5	24.9	22.7	22.8	21.0	17.3	19.0	16.8	17.2
Secondary Sector	38.4	38.4	40.0	40.2	41.0	43.3	41.0	41.2	40.7
Tertiary Sector	36.1	36.7	37.3	37.0	38.0	39.5	39.9	42.0	42.0
Aggregate	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: CSO, MOSPI

Table 4.2.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	2.4	5.1	5	9	173.4	99362
2003-04	11.5	8.1	5	10	176.7	111612
2004-05	1.6	7.6	5	10	175.5	112946
2005-06	6.2	8.4	5	9	175.1	120813
2006-07	-0.7	9.1	5	9	174.5	119539
10th Plan Average	**4.2**	**7.6**	**5**	**9**	**175.0**	**112855**
2007-08	9.0	8.6	5	10	176.0	130034
2008-09	-0.9	7.4	5	9	174.0	128829
2009-10	-11.2	8.1	5	9	172.0	114416
2010-11	19.8	8.7	5	9	176.1	137781
2011-12	-5.1	7.4	5	9	176.1	130748
11th Plan Average	**2.3**	**8.0**	**5**	**9**	**174.8**	**128362**

Source: Directorate of Economics and Statistics, GOI
Note: *land productivity = agricultural GSDP/ha of NSA

Table 4.2.9: Trend in Inputs Use in Himachal Pradesh

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% Net irrigated to net sown area	Irrigation intensity (%)	%Gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	1.2	1.9	22.8	150.8	19.8	41.5
2003-04	1.1	1.8	19.4	171.4	18.8	49.0
2004-05	1.0	1.8	19.2	176.0	19.2	47.0
2005-06	1.0	1.9	19.3	178.8	19.7	48.8
2006-07	1.0	1.9	19.2	179.8	19.8	52.1
10th Plan Average	**1.1**	**1.8**	**20.0**	**171.4**	**19.5**	**47.7**
2007-08	1.1	1.9	19.9	178.7	20.2	51.5
2008-09	1.1	1.9	19.9	177.8	20.4	59.1
2009-10	1.1	1.9	19.9	176.9	20.5	54.8
2010-11	1.1	1.9	20.0	178.7	20.3	59.2
2011-12	1.1	1.9	20.0	178.7	20.3	55.2
11th Plan Average	**1.1**	**1.9**	**20.0**	**178.1**	**20.4**	**55.9**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area /Gross sown area*100

Table 4.2.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	-0.3	1.3	2.1	-0.5	1.8	2.3
Wheat	-0.2	-2.2	-2.1	-0.3	9.0	9.0
Maize	0.0	3.3	3.0	-0.3	2.6	2.8
Small Millets	-5.7	-6.1	1.2	-5.5	2.2	5.1
Barley	-0.7	0.2	1.7	-1.7	9.0	11.7
Coarse Cereals	-0.5	2.7	2.9	-0.4	2.7	2.9
Total Cereals	-0.4	-1.0	-0.9	-0.4	4.2	4.4
Gram	28.4	50.3	5.6	-7.8	11.5	15.5
Other Pulses	4.1	38.5	30.7	-17.2	-3.9	-9.5
Total Pulses	3.7	31.4	25.9	1.2	10.6	6.4
Total Food grains	-0.3	-0.9	-0.7	-0.3	4.2	4.3
Sesamum	-1.9	1.8	1.5	-3.5	31.4	27.9
Rapeseed & Mustard	-1.7	7.8	6.8	2.2	14.6	11.0
Total Oilseeds	-2.9	0.9	1.5	0.1	12.0	10.5
Sugarcane	0.4	12.1	7.4	-6.1	-13.3	-4.8

Source*:* Directorate of Economics and Statistics, GOI

Table 4.2.11: Average Annual Growth in Production of Livestock Products and Fisheries

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	2.2	-3.7	0.6	0.3
2003-04	1.7	-12.3	1.4	-9.8
2004-05	10.7	0.0	-3.5	5.7
2005-06	-0.1	0.0	-7.2	5.7
2006-07	0.3	0.0	2.5	-5.5
10th plan	**3.0**	**-3.2**	**-1.2**	**-0.7**
2007-08	0.2	33.3	9.2	13.9
2008-09	17.4	0.0	15.9	-0.8
2009-10	-5.4	0.0	2.4	0.8
2010-11	13.5	-25.0	2.1	-6.0
2011-12*	-	-	-	9.1
11th plan	**6.4**	**2.1**	**7.4**	**3.4**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

4.3 JAMMU & KASHMIR

4.3.1. Background Information

Jammu and Kashmir is the northernmost State of India. It is situated in the Himalayan Mountains and shares a border with the States of Himachal Pradesh and Punjab to the south. The State has an international border with the People's Republic of China in the north and east while Line of Control (LOC) separates it from Pakistan administered territories of Kashmir (POK) and Gilgit – Baltistan in the west and northwest, respectively. The total geographic area of the State is 222,336 km^2that is 6.8 per cent of the country's geographic area. Main rivers flowing through the State are Indus, Jhelum, Chenab and Ravi. In the Kashmir Division, out of total net sown area of 3.50 lakh hectares, an area of about 2.10 lakh hectares is irrigated. The per capita available area for crop cultivation, i.e., average holding size is 0.53 hectares and 1.08 hectares in Kashmir Valley and Ladakh Region, respectively. The numbers of farm operating families are about 8.12 lakh.

According to 2011 Census report, the total population of the State was 3.12 crore that is less than 3 per cent total population of the country. Out of total population of the State, 75.1 per cent is rural and 24.9 per cent is urban. The agriculture sector supports more than 75 per cent of the population in the State. The share of primary sector in the GSDP of the State was much higher than that of all India. The share declined from 25.4 per cent in the terminal year of the 10th Plan to around 22.8 per cent in 2011-12 (end of 11th Plan). The share of secondary sector in Jammu and Kashmir was around average of all India during the 10th Plan but the share of secondary sector in the State GSDP declined from 28.9 per cent by the end of 10th Plan to 23.9 per cent by the end of 11th Plan (Table 4.3.7). The decline in secondary sector share is essentially a result of incessant militancy continuing in the State and thereby creating adverse environment for the growth of industrial sector. The services sector share, on the other hand, increased from 47.4 per cent to 53.3 per cent during the same time period. Table 4.3.7 depicts the growth rate of agriculture and allied sector in Jammu and Kashmir.Agricultural growth rate in the State was fluctuating but averaged at 2.8 per cent per annum during the 10th Plan that increased to 3.7 per cent per annum in the 11th Plan. Thus, despite militancy and all other factors Jammu and Kashmir agriculture growth rate was quite close to the targeted growth rate of 4 per cent per annum set under the RKVY programme. The RKVY programme was implemented to reinvent growth in agriculture in 2005-06. RKVY aimed at achieving 4 per cent annual growth in the agriculture sector during the 11th plan (2007-12).

4.3.2. Distribution of Allocation and Expenditure across Sectors

This section mainly focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by

the State Government to these sectors for achieving high growth rate in the agriculture sector. It is expected that the allocation and expenditure would move in the same direction. Nonetheless, that may not be true, but for present evaluation we shall focus our concentration on the expenditure actually incurred. We also look at the allocation data and the ratio of expenditure to allocation to point out whether there was any diversion taking place in the priorities set initially.

Data in Table 4.3.1 and Figure 4.3 present the numbers of projects undertaken under RKVY, their amount of allocation and expenditure, expenditure-allocation ratio and expenditure incurred per project. Withrespect to expenditure across sectors, major sectors namely, horticulture, micro / minor irrigation, animal husbandry, marketing and post-harvest management, seed, fisheries and extension contributed 81.5 per cent of the total expenditure and remaining 13 minor sectors utilized only 18.5per cent of the total expenditure in the State. The highest expenditure was incurred on horticulture sector spending Rs. 38 crore while lowest was on information technology sector spending only Rs. 0.01 crore. On the other hand, if one looks at the allocation, horticulture was planned for the highest allocation of Rs. 76 crore while it spent only Rs. 38 crore. Out of total allocation planned of Rs.267 crore only Rs. 145 crore was actually spent.

Further expenditure incurred per project was highest in natural resource management with a value of Rs.0.9 crore per project, followed by micro/minor irrigation Rs.0.83 crore, seed Rs.0.82 crore, while the lowest amount per project was spent in the Information technology sector with Rs. 0.02 crore per project. Interestingly, expenditure per project of a few minor sectors (fertilizers and INM, agriculture mechanization, cooperatives and cooperation, organic farming/bio fertilizer, sericulture, etc.) was found to be higher when compared with few major sectors (animal husbandry and extension) (Figure 4.3).

It is seen from the table that only in fisheries sector expenditure exceeded the allocation whereby this sector's expenditure allocation ratio was more than one. The sectors that spent highest allocated amount included marketing and post-harvest management where 82 per cent of the allocated amount was actually spent. Agriculture mechanization spent 78 per cent of the allocated amount, followed by extension, spending 70 per cent of allocated amount and sericulture spent around 67 per cent of the allocated amount. Rest of the sectors spent only half or less than half of the allocated amount only. At the aggregate, only 54 per cent of the allocation was actually spent by the State under RKVY. No amount at all was spent in the case of dairy development and research projects. Thus, in Jammu and Kashmir, lot of diversion took place in the spending pattern from the initial planned expenditure.

4.3.3. Sector-Wise Size of the Projects based on the Expenditure

Table 4.3.2 presents the numbers and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY per project have been divided into Rs. 0-1 crore and Rs. 1-10 crore as there was no project that crossed Rs. 10 crore expenditure per project.

Out of the total expenditure, 88 per cent of the projects incurred 50 per cent of the expenditure at the bottom spending less than Rs. 1 crore amounts on each project. Rest only 12 per cent of the projects spent the remaining 50 per cent expenditure incurring between Rs. 1 to 10 crore on each project. On the high end with value of each project between Rs. 1-10 crore were projects related to micro/minor irrigation, seed, marketing, post-harvest and natural resource management, horticulture and agricultural mechanization. At the bottom with investment of less than Rs. one crore per project were the sectors like cooperative and cooperation, crop development, information technology, integrated pest management, as in all these sectors, no project exceeded value of above Rs one crore per project.

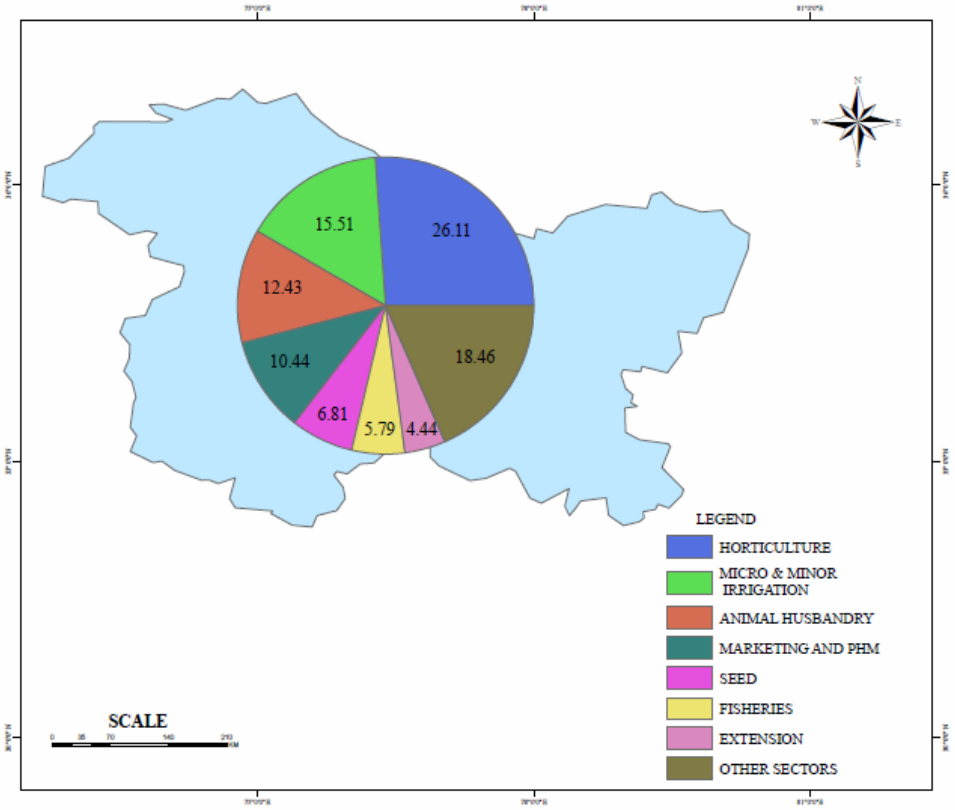


Figure 4.3: Share of Expenditure across Sectors

Note: Minor sectors: Agriculture Mechanisation, Natural Resource Management, Organic Farming / Bio Fertiliser, Sericulture, Crop Development, Fertilisers and INM, Non Farm activities, Cooperatives and Cooperation, Integrated Pest Management, Innovative Programmes/ Training/ Capacity building/ Others, Information Technology, DairyDevelopment, Research (agri/horti/animal husbandry, etc.)

4.3.4. Sector-Wise Expenditure according to Status

The status-wise expenditure incurred on different projectsis presented in Table 4.3.3. Animal husbandry had the highest amount spent on completed and substantially completed projects with an expenditure of Rs. 15.7 crore followed by horticulture, micro & minor irrigation and

marketing & post-harvest with expenditure of Rs.10.7 crore, Rs. 9.3 crore and Rs. 8 crore, respectively. Integrated pest management, cooperatives & cooperation and nonfarm activities had less amount spent oncompleted and substantially completed projects with an expenditure of Rs. 0.4 crore, Rs. 0.6 crore and Rs. 1.2 crore, respectively. Innovative programmes, training, capacity building, Information technology, dairy development and research did not have any completed and substantially completed projects although the projects were meant to be completed in 11th five year plan but were spilled over to 12th Five Year Plan. Only fertilizer and INM had the whole amount spent on the completed projects without spilling the money to ongoing projects.

Horticulture sector had highest number of ongoing project and projects in progress with an expenditure of Rs. 27 crores, followed by micro/ minor irrigation, marketing & post-harvest management and agriculture mechanization with expenditure of Rs. 13.2, Rs. 5.9 crore and Rs. 4.9 crore, respectively. Information technology had less number of approved and ongoing project and projects in progress with an expenditure of Rs. 0.02 crore, followed by innovative programmes, training, capacity building, integrated pest management and cooperatives & cooperation with expenditure of Rs. 0.1 crore, Rs. 0.2 crore and Rs. 0.4 crore, respectively. Only marketing and post-harvest management sector had not yet implemented project for which an expenditure of Rs. 1.1 crore was already incurred. Although, allocation was made for dairy development and research sector but there has not been any expenditure done even after completion of the 11th Five Year Plan. Out of total 458 projects planned in the State under RKVY, only 316 projects were taken up during the 11th Plan.

4.3.5. Sector and Sub Sector Wise Distribution of Projects by Nature

Table 4.3.4 presents sector and sub-sector-wise expenditure on Infrastructure and non-infrastructure projects of normal, National and State Flagship programmes in Jammu and Kashmir. Out of the total expenditure of Rs. 144.6 crore under RKVY scheme in Jammu and Kashmir, only 2.8 per cent was spent on development of infrastructure in agriculture and allied activities and remaining 97.3 per cent was spent on non-infrastructural activities. It is to be noted that there was no National Sponsored Flagship Programme under taken in Jammu and Kashmir under the programme of RKVY. Further, all Infrastructure expenditure of Rs. 4.1 crore under the programme was spent only through normal projects that accounted for 2.8 per cent of the total expenditure and no infrastructure activity was undertakenunder the State Flagship programme. Conversely, non-infrastructure expenditure of normal and State flagship accounted for 79.7 per cent and 17.6 per cent of the total expenditure, respectively. The total expenditure incurred on infrastructure assets projects and non-infrastructure projects was Rs. 4.1 crore and Rs. 140.6 crore respectively.

Looking at the total expenditure incurred among various sub sectors, sprinkler and drip irrigation constituted highest amount of Rs. 11.6 crores, followed by Development of horticulture farms/

facilities (Rs. 9.5 crore), vegetables (Rs. 9.1 crore), Infrastructure (Rs. 7.5 crore), infrastructure/ponds of fisheries/dept/agency (Rs. 7.1 crore) and agricultural mechanisation and machines andequipments, Rs. 6 crore, each. State flagship projects were mainly centred on horticulture sector, micro/minor irrigation, marketing and post-harvest management and natural resource management. Infrastructure expenditure was mainly concentrated in marketing and post-harvest management, micro/minor irrigation and horticulture sector. In the case of non-infrastructure spending, highest amount was spent on horticulture, followed by micro/minor irrigation, animal husbandry, marketing and post-harvest management, seed and fisheries and so on.

4.3.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 4.3 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Jammu and Kashmir as provided in the website. Among the major components included under horticulture sector were area expansion under floriculture, apiculture, bee keeping, mushroom cultivation, promotion of protected cultivation and establishment of nursery of planting material. Under micro irrigation, components covered were promotion of bore well and sprinkler system, on farm water reservoirs, construction of field channels etc. Under animal husbandry, the main attempt was to improve breed and crossbred rams and their feed, supplying min fodder kits, establishment of goat units, holding of animal fertility camps and so on. Under marketing and post-harvest management, establishment of ropeways for transportation was attempted. Similarly, promotion of certified seeds under seed programme and training of farmers under extension programme were targeted under RKVY. However, no information was available on output and outcome under all these programmes from the State Government RKVY website.

4.3.7. An Assessment of RKVY Performance in the State and Concluding Remarks

In Jammu and Kashmir RKVY project comprises of 20 sectors which includes many sub sectors. Out of the 20 sectors, seven sectors absorbed 81.5 per cent of the expenditure. Among the major sectors, horticulture utilized the major funds it was followed by micro/minor irrigation, animal husbandry, marketing and post-harvest management, seed, fisheries and extension. Besides, 17.6 per cent was spent on the State flagship projects especially in the horticulture, micro/minor irrigation and animal husbandry sectors. The pattern of expenditure incurred also shows the priority areas chosen by the State Government to achieve higher productivity in agriculture and to raise the growth rate of agriculture to help achieve higher growth path for the State economy.

If one looks at the expenditure pattern by sectors (Table 4.3.4), it clearly reveals that the State emphasized on horticulture, micro/minor irrigation, animal husbandry and agriculture mechanization. Within the sub-sectors, Sprinklers and drip irrigation, development of horticulture farms/facilities and vegetables production was emphasized. Looking at the

agriculture performance in the State, it is observed that the priority areas chosen by the State Government more or less were justified. The main strength of Jammu and Kashmir agriculture has remained in the high performance of horticulture sector.The high priority given to horticulture especially to vegetables would strengthen the horticulture sector in the State. A special feature on mushroom cultivation indicates the climate support this particular activity has in the State. The priority towards market infrastructure has also an indication of reducing wastage that is widespread among perishable crops. The State also needs to upgrade processing sector especially in the horticultural sector that would increase value addition and increase farmers' income and bring more agro based employment.

We try to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out good or bad performance to RKVY factor alone. Table 4.3.5 shows that, although revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 54 per cent in the 11th Plan over 10th Plan (compared to 65 per cent in the case of Haryana), however, percentage of agriculture share in the State budget decreased from 16.4 percent in the 10th Plan to 13.7 per cent during the 11th Plan. Decline in percentage of agriculture expenditure to State budget indicates diversion of more funds towards secondary and territory activities. In total expenditure in agriculture in the State, RKVY shared around 1.5 per cent of the total expenditure. Agriculture expenditure as a percentage of State GSDP increased from 14.6 per cent in the 10th Plan to 16.9 per cent in the 11th Plan. Looking at sub sector budgetary expenditure (Table4.3.6), the highest percentage change over the previous Plan happened in cooperation, other agricultural programmes, agricultural research and education, animal and crop husbandry, some of these also received prime priority under RKVY.

We have already stated that agricultural GSDP grew at a rate of 2.8 per cent in the 10th Plan that increased to 3.7 per cent in the 11th Plan in the State that was close to the target set under the RKVY. There was slight increase in the gross cropped area as also cropping intensity increased from 148.6 in the 10th Plan to 155.1 during the 11th Plan period (Table 4.3.8). Land productivity per hectare in value terms also increased from Rs 101 thousand in the 10th Plan to approximately Rs 114 thousand in the 11th Plan, a part of that may be due to inflation factor. The higher value of land productivity compared to States like Punjab and Haryana indicates the cropping pattern in the State that reflects farmers growing more high value crops like apple. Although micro irrigation projects were taken up, the net and gross irrigated area remained almost at the level where it was in the previous Plan period. There was some increase in irrigation intensity from 146.2 during the 10th Plan to 149.5 at the end of 11th Plan (Table 4.3.9). The growth rate in production (that is combination of area and yield) did not show any increase in most of the crops (Table 4.3.10). Average annual growth of milk, meat and egg production was much higher during the 11th Plan period as compared to 10th Plan period while fisheries sector performance remained moderate (Table 4.3.11).

On the overall, although growth at the aggregate level in agricultural GSDP was maintained at high level, however other indicators were not that encouraging indicating that it would be difficult to maintain high growth in agriculture in the State unless major steps are taken, especially for increasing the irrigated area in the State.

TABLES

Table 4.3.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th Five Year Plan

Sectors	No. of project	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio	Expenditure per Project (Rs. crore)
Horticulture	88 (126)	75.7 (28.4)	37.7 (26.2)	0.5	0.4
Micro/Minor Irrigation	27 (37)	42.4 (16)	22.4 (15.6)	0.5	0.8
Animal Husbandry	64 (92)	34.2 (12.9)	17.9 (12.5)	0.5	0.3
Marketing & PHM	20 (26)	18.5 (7)	15.1 (10.5)	0.8	0.8
Seed	12 (20)	17.9 (6.8)	9.8 (6.9)	0.6	0.8
Fisheries	11 (11)	7.9 (3)	8.3 (5.8)	1.1	0.8
Extension	22 (38)	9.2 (3.5)	6.4 (4.5)	0.7	0.3
Agriculture Mechanization	12 (18)	7.5 (2.9)	5.9 (4.1)	0.8	0.5
NRM	5 (8)	7.8 (3)	4.2 (3)	0.5	0.9
Organic Farming / Bio Fertilizer	11 (14)	7.3 (2.8)	4.1 (2.9)	0.6	0.4
Sericulture	11 (12)	5.7 (2.2)	3.8 (2.7)	0.7	0.4
Crop Development	12 (17)	6.4 (2.5)	2.8 (2)	0.4	0.2
Fertilizers& INM	4 (6)	5.3 (2)	2.4 (1.7)	0.5	0.6
Non Farm Activities	8 (15)	3.9 (1.5)	1.6 (1.1)	0.4	0.2
Cooperatives And Cooperation	3 (5)	2.0 (0.8)	1 (0.7)	0.5	0.3
Integrated Pest Management	4 (8)	1.6 (0.7)	0.6 (0.4)	0.3	0.1
Innovative Programmes	1 (2)	0.6 (0.3)	0.1 (0.1)	0.2	0.1
IT	1 (1)	0.03 (0.1)	0.01 (0.1)	0.5	0.0
Dairy Development	0 (1)	12 (4.5)	0 (0)	0.0	0.0
Research	0 (1)	0.19 (0.1)	0 (0)	0.0	0.0
Grand Total	**316 (458)**	**266.7 (100)**	**144.5 (100)**	**0.5**	**0.5**

Source: www.rkvy.nic.in as on April, 2013;

Note: Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3).
Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis).
INM: Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management
if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 4.3.2: SectorClassification of Projects according to their Expenditure

(per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd
Horticulture	90.9	50.3	9.1	49.7	88(100)	37.7(100)
Micro/minor irrigation	62.9	22.1	37.0	77.9	27(100)	22.4(100)
Animal husbandry	95.3	77.7	4.7	22.3	64(100)	17.9(100)
Marketing and post harvest management	75	35.3	25	64.6	20(100)	15.1(100)
Seed	83.3	27.7	16.7	72.2	12(100)	9.8(100)
Fisheries	72.7	37.1	27.3	62.9	11(100)	8.4(100)
Extension	95.5	75.6	4.6	24.3	22(100)	6.4(100)
Agriculture mechanisation	83.3	51.3	16.7	48.7	12(100)	5.9(100)
Natural resource management	80	37.1	20	62.8	5(100)	4.3(100)
Organic farming / bio fertiliser	90.9	68.6	9.1	31.4	11(100)	4.1(100)
Sericulture	90.9	74.1	9.1	25.8	11(100)	3.9(100)
Crop development	100	100	0	0	12(100)	2.9(100)
Fertilisers and INM	75	58.9	25	41.1	4(100)	2.4(100)
Non farm activities	100	100	0	0	8(100)	1.6(100)
Cooperatives and cooperation	100	100	0	0	3(100)	1(100)
Integrated pest management	100	100	0	0	4(100)	0.6(100)
Innovative programmes/ training/ capacity building/ others	100	100	0	0	1(100)	0.1(100)
Information technology	100	100	0	0	1(100)	0.02(100)
Grand Total	**87.9**	**49.6**	**12.03**	**50.3**	**316(100)**	**144.5(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: No.s:indicates the number in absolute figures, Expd – Expenditure;

*figures in the parentheis indicates percentage to their respective total

Table 4.3.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/Not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
Horticulture	75	27.0	37	10.7	14	0
Micro/Minor Irrigation	28	13.2	7	9.3	2	0
Animal Husbandry	17	2.2	49	15.7	26	0
Marketing & PHM	12	5.9	8	8.0	6	1.1
Seed	14	3.9	6	6.0	0	0
Fisheries	5	1.9	6	6.4	0	0
Extension	11	1.3	18	5.2	9	0
Agriculture Mechanization	14	4.9	2	1.0	2	0
NRM	5	1.6	3	2.7	0	0
Organic Farming / Bio Fertilizer	9	1.7	5	2.5	0	0
Sericulture	7	1.6	5	2.3	0	0
Crop Development	12	1.6	3	1.2	2	0
Fertilizers & INM	1	0.0	4	2.4	1	0
Non Farm Activities	8	0.4	5	1.2	2	0
Cooperatives And Cooperation	3	0.4	1	0.6	1	0
Integrated Pest Management	2	0.2	2	0.3	4	0
Innovative Programmes	2	0.1	0	0	0	0
IT	1	0.0	0	0	0	0
Dairy Development	1	0.0	0	0	0	0
Research	1	0.0	0	0	0	0
Grand Total	**228**	**68.0**	**161**	**75.5**	**69**	**1.1**

Source: http://rkvy.nic.in/ as on April, 2013
Note: No.: No. of projects

Table 4.3.4: Sector and Sub Sector Wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project	Total		Grand Total
	Infra-structure	Non infra-structure	Non infra-structure	Infra-structure	Non infra-structure	
Horticulture	**1.9**	**73.4**	**24.6**	**2(0.8)**	**98.1(37.1)**	**100(37.8)**
Area expansion	0.0	68.1	31.9	0(0)	100(1.5)	100(1.5)
Development of horticulture farms/ facilities	0.0	63.8	36.2	0(0)	100(9.5)	100(9.5)
Floriculture	0.0	100.0	0.0	0(0)	100(2.1)	100(2.1)
Fruits	0.0	54.9	45.1	0(0)	100(3.7)	100(3.7)
Mushroom	100.0	0.0	0.0	100(0.8)	0(0)	100(0.8)
Nurseries and green houses	0.0	89.5	10.5	0(0)	100(6)	100(6)
Others (horticulture)	0.0	100.0	0.0	0(0)	100(5.4)	100(5.4)
Vegetable	0.0	65.4	34.6	0(0)	100(9.1)	100(9.1)
Micro/minor irrigation	**6.5**	**71.1**	**22.4**	**6.5(1.5)**	**93.6(21)**	**100(22.5)**
Check dams/ water courses bunds	0.0	100.0	0.0	0(0)	100(1.6)	100(1.6)
Farm ponds	67.1	32.9	0.0	67.1(1.5)	33(0.8)	100(2.2)
Percolation tanks/ minor irrigation tanks	0.0	100.0	0.0	0(0)	100(3.2)	100(3.2)
Sprinkler and drip irrigation	0.0	74.2	25.8	0(0)	100(11.6)	100(11.6)
Tube wells	0.0	49.4	50.6	0(0)	100(4.1)	100(4.1)
Animal husbandry	**0.0**	**96.1**	**3.9**	**0(0)**	**100(18)**	**100(18)**
Animal health	0.0	100.0	0.0	0(0)	100(2.3)	100(2.3)
Breed improvement	0.0	100.0	0.0	0(0)	100(1.1)	100(1.1)
Extension and training	0.0	100.0	0.0	0(0)	100(1.2)	100(1.2)
Feed and fodder	0.0	100.0	0.0	0(0)	100(0.9)	100(0.9)
Infrastructure	0.0	92.4	7.6	0(0)	100(7.5)	100(7.5)
Others (animal husbandry)	0.0	95.2	4.8	0(0)	100(2.7)	100(2.7)
Poultry	0.0	100.0	0.0	0(0)	100(2.7)	100(2.7)
Marketing and post harvest management	**12.1**	**70.9**	**17.0**	**12.2(1.9)**	**87.9(13.3)**	**100(15.1)**
Cold storages and cold chains	0.0	100.0	0.0	0(0)	100(6)	100(6)

Others (marketing & PHM)	0.0	8.7	91.3	0(0)	100(2.9)	100(2.9)
Setting up/ strengthening of market infrastructure	28.7	71.3	0.0	28.7(1.9)	71.4(4.6)	100(6.4)
Seed	**0.0**	**98.9**	**1.1**	**0(0)**	**100(9.9)**	**100(9.9)**
Others (seed)	0.0	100.0	0.0	0(0)	100(5.3)	100(5.3)
Seed distribution	0.0	100.0	0.0	0(0)	100(2.1)	100(2.1)
Seed farm	0.0	100.0	0.0	0(0)	100(2)	100(2)
Seed processing centres and storage	0.0	100.0	0.0	0(0)	100(0.3)	100(0.3)
Seed production	0.0	64.8	35.2	0(0)	100(0.4)	100(0.4)
Tissue culture	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Fisheries	**0.0**	**100.0**	**0.0**	**0(0)**	**100(8.4)**	**100(8.4)**
Farmers fish ponds/ assistance including training	0.0	100.0	0.0	0(0)	100(1)	100(1)
Infrastructure/ ponds of fisheries/ dept/ agency	0.0	100.0	0.0	0(0)	100(7.1)	100(7.1)
Others (fisheries)	0.0	100.0	0.0	0(0)	100(0.4)	100(0.4)
Extension	**0.0**	**71.5**	**28.5**	**0(0)**	**100(6.5)**	**100(6.5)**
Infrastructure	0.0	58.9	41.1	0(0)	100(3.9)	100(3.9)
Others (extension)	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Training/ study tour	0.0	89.5	10.5	0(0)	100(2.6)	100(2.6)
Agriculture mechanisation	0.0	87.5	12.5	0(0)	100(6)	100(6)
Machines and equipment assistance	0.0	87.5	12.5	0(0)	100(6)	100(6)
Natural resource management	**0.0**	**37.1**	**62.9**	**0(0)**	**100(4.3)**	**100(4.3)**
Land reclamation	0.0	100.0	0.0	0(0)	100(0.4)	100(0.4)
Soil treatment (acidic alkali, water logged)	0.0	100.0	0.0	0(0)	100(0.9)	100(0.9)
Water conservation structures and watershed dev	0.0	12.9	87.1	0(0)	100(3.1)	100(3.1)
Organic farming / bio fertiliser	0.0	67.7	32.3	0(0)	100(4.2)	100(4.2)
Promotion of organic farming	0.0	100.0	0.0	0(0)	100(1.2)	100(1.2)
Vermi composting	0.0	54.6	45.4	0(0)	100(3)	100(3)
Sericulture	**0.0**	**100.0**	**0.0**	**0(0)**	**100(3.9)**	**100(3.9)**
Cocoon production	0.0	100.0	0.0	0(0)	100(1.7)	100(1.7)
Others (sericulture)	0.0	100.0	0.0	0(0)	100(2.3)	100(2.3)
Crop development	**0.0**	**100.0**	**0.0**	**0(0)**	**100(2.9)**	**100(2.9)**
Coarse cereals	0.0	100.0	0.0	0(0)	100(1.7)	100(1.7)
Oilseeds and pulses	0.0	100.0	0.0	0(0)	100(0.3)	100(0.3)
Others (crop development)	0.0	100.0	0.0	0(0)	100(1)	100(1)
Fertilisers and INM	0.0	58.9	41.1	0(0)	100(2.5)	100(2.5)

Fertiliser labs	0.0	100.0	0.0	0(0)	100(0.9)	100(0.9)
Soil testing lab	0.0	34.9	65.1	0(0)	100(1.6)	100(1.6)
Non farm activities	**0.0**	**100.0**	**0.0**	**0(0)**	**100(1.6)**	**100(1.6)**
Agri business centers	0.0	100.0	0.0	0(0)	100(1)	100(1)
Others (NFA)	0.0	100.0	0.0	0(0)	100(0.5)	100(0.5)
Post harvest processing facilities	0.0	100.0	0.0	0(0)	100(0.2)	100(0.2)
Cooperatives and cooperation	**0.0**	**100.0**	**0.0**	**0(0)**	**100(1)**	**100(1)**
Construction of godowns	0.0	100.0	0.0	0(0)	100(0.4)	100(0.4)
Other facilities	0.0	100.0	0.0	0(0)	100(0.6)	100(0.6)
Integrated pest management	**0.0**	**82.9**	**17.1**	**0(0)**	**100(0.6)**	**100(0.6)**
IPM labs	0.0	100.0	0.0	0(0)	100(0.2)	100(0.2)
Promotion of IPM	0.0	78.8	21.2	0(0)	100(0.5)	100(0.5)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**0.0**	**0(0)**	**100(0.2)**	**100(0.2)**
Innovative programmes	0.0	100.0	0.0	0(0)	100(0.2)	100(0.2)
Information technology	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Development of it facilities	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Grand total	**2.8**	**79.7**	**17.6**	**2.8(4.1)**	**97.3(140.6)**	**100(144.6)**

Source: http://rkvy.nic.in/ as on April, 2013

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 4.3.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at Constant 2004-05 Prices)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri. expenditure
2002-03	658	434	1092	4977	21.9	15.7	
2003-04*	640	332	972	4972	19.5	12.8	
2004-05	747	469	1216	6868	17.7	15.9	
2005-06	718	316	1034	8618	12.0	13.5	
2006-07	742	446	1187	8126	14.6	15.3	
10th Plan	**3505**	**1997**	**5502**	**33562**	**17.2**	**14.6**	
2007-08	798	322	1120	9223	12.1	14.3	
2008-09	793	403	1196	9758	12.3	14.7	
2009-10	882	791	1673	10534	15.9	20.7	**1.5**
2010-11	863	591	1454	10740	13.5	16.6	
2011-12*	1078	584	1662	11423	14.5	17.9	
11th Plan	**4414**	**2690**	**7105**	**51677**	**13.7**	**16.9**	
% change over 10th plan	**26.0**	**34.7**	**29.1**	**54.0**			

Source: State Finances, RBI
Note: * - Revised estimates, rest all accounts
Agriculture and allied activities includes Irrigation and flood control
Budgetary expenditure is accounts only developmental expenditure
Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100
State budget may or may not include RKVY fund

Table 4.3.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	148.3 (13.5)	238.5 (13.5)	60.9
2	Soil and Water Conservation	40.4 (3.7)	61.4 (3.5)	51.8
3	Animal Husbandry	131.6 (12)	220.4 (12.5)	67.6
4	Dairy Development	0.6 (0.1)	0.1 (0.1)	-96.0
5	Fisheries	24 (2.2)	38.3 (2.2)	59.3
6	Forestry and Wild Life	206.6 (18.7)	318 (18)	53.9
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	147.4 (13.4)	202.2 (11.5)	37.2
9	Agricultural Research and Education	55 (5)	105.8 (6)	92.3
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	15.2 (1.4)	32.5 (1.9)	114.2
12	Other Agricultural Programmes	4.8 (0.5)	12.3 (0.7)	158.4
13	Major and Medium Irrigation	36 (3.3)	49.7 (2.9)	37.9
14	Minor Irrigation	111 (10.1)	159.1 (9.1)	43.3
15	Flood Control and Drainage	31.1 (2.9)	42.6 (2.5)	36.9
16	Others	153.5 (13.9)	286.5 (16.3)	86.7
	Total	**1105.1 (100)**	**1766.7 (100)**	**59.9**

Source: State Finances, RBI;

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total

Table 4.3.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 Prices)

(Per cent)

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Primary Sector	28.1	26.6	25.4	24.0	23.4	22.3	22.9	22.8	22.2
Secondary Sector	28.2	27.9	28.9	29.1	27.4	27.4	25.2	23.9	22.6
Tertiary Sector	43.7	45.5	45.7	47.0	49.2	50.3	51.9	53.3	55.2
Aggregate	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: CSO, MOSPI

Table 4.3.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	2.5	5.1	7	11	147.1	94829
2003-04	8.9	5.2	7	11	147.5	101311
2004-05	1.2	5.2	8	11	146.5	101882
2005-06	0.2	5.8	7	11	150.0	104626
2006-07	1.1	6.0	7	11	151.8	104592
10th Plan Average	**2.8**	**5.5**	**7**	**11**	**148.6**	**101448**
2007-08	0.6	6.4	7	11	154.5	106418
2008-09	3.8	6.5	7	11	153.9	109743
2009-10	-0.5	4.5	7	11	155.8	109820
2010-11	8.4	5.7	7	11	155.7	119484
2011-12	5.9	6.1	7	11	155.7	126578
11th Plan Average	**3.7**	**5.8**	**7**	**11**	**155.1**	**114409**

Source: Directorate of Economics and Statistics, GOI
Note: * land productivity = agricultural GSDP/ha of NSA

Table 4.3.9: Trend in Inputs Use in Jammu & Kashmir

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	3.0	4.3	40.9	144.7	40.3	60.2
2003-04	3.1	4.5	41.1	145.3	40.5	72.0
2004-05	3.1	4.5	41.4	145.7	41.1	66.3
2005-06	3.1	4.6	42.5	146.8	41.6	81.3
2006-07	3.1	4.6	41.6	148.5	40.8	74.8
10th Plan Average	**3.1**	**4.5**	**41.5**	**146.2**	**40.8**	**70.9**
2007-08	3.1	4.6	42.0	150.3	40.8	69.0
2008-09	3.1	4.7	42.5	150.0	41.4	92.7
2009-10	3.2	4.7	43.1	148.6	41.1	98.5
2010-11	3.2	4.8	43.9	149.2	42.0	105.9
2011-12	3.2	4.8	43.9	149.2	42.0	87.4
11th Plan Average	**3.2**	**4.7**	**43.1**	**149.5**	**41.5**	**90.7**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area /Gross sown area*100

Table 4.3.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	0.4	6.0	5.4	0.8	-0.1	-0.9
Wheat	0.2	7.8	7.8	2.7	4.9	2.5
Bajra	12.1	11.7	-0.1	-1.2	-1.2	0.1
Maize	-0.2	-1.4	-1.2	-0.5	2.4	2.7
Small Millets	21.6	37.6	4.6	32.6	39.1	3.3
Coarse Cereals	1.5	-0.8	-2.0	-0.8	2.1	2.7
Total Cereals	0.7	3.7	2.9	0.7	1.2	0.5
Other Pulses	1.5	3.1	1.5	-19.7	-16.2	-16.4
Total Pulses	1.3	2.7	1.4	-1.4	-0.3	1.0
Total Food grains	0.7	3.7	2.9	0.6	1.2	0.6
Rapeseed & Mustard	3.2	576.4	1012.1	0.9	7.5	6.7
Total Oilseeds	3.4	317.2	461.4	-1.3	5.3	7.5

Source*:* Directorate of Economics and Statistics, GOI

Table 4.3.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	2.1	0.0	2.6	4.8
2003-04	1.8	1.4	2.4	0.0
2004-05	0.6	-	-4.2	-3.3
2005-06	-1.5	-	3.5	0.3
2006-07	0.0	0.0	0.0	0.3
10th plan	**0.6**	**-**	**0.9**	**0.4**
2007-08	7.0	3.7	5.7	-9.7
2008-09	4.5	0.0	7.9	11.2
2009-10	1.7	7.1	0.5	0.2
2010-11	1.1	3.3	6.7	2.1
2011-12*	-	-	-	0.8
11th plan	**3.6**	**3.5**	**5.2**	**0.9**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

4.4 PUNJAB

4.4.1. Background Information

Punjab is a State in Northwest India, borders the Himachal Pradesh in the east, Haryana in the south and southeast and Rajasthan in the southwest as well as the Pakistani province of Punjab in the west. It is also bounded in the north by the State of Jammu and Kashmir. It is the 19th largest State in the country, with a total geographical area of 50,362 sq. km. that accounts for 1.53 per cent of the country's total geographical area. According to 2011 Census report, the total population of the State was 2.77 crore that is 2.3 percent of all India. The share of primary sector in the GSDP of the State is still high although it declined from 29 per cent in the terminal year of the 10th Plan to around 23 per cent in 2011-12 (end of 11th Plan). The share of secondary sector increased from 28.6 per cent by the end of 10th Plan to 30 per cent by the end of 11th Plan (Table 4.4.7), vis-a-vis services sector increased from 42 per cent to 47 per cent during the same time period. The economy of Punjab is largely agriculture based. About 82.56 per cent of the State's total geographical area is identified as net sown area (NSA) and 156.53 per cent as gross cropped area (GCA). The cropping intensity in the State is estimated at around 190 per cent, which is highest in any State in India indicating that on average farmers are growing around two crops in a year on the all cultivated area whereas most other States are languishing far behind. In the capacity of growing two crops in a year, Punjab is known for rice and wheat cycle where rice is grown in the kharif season and wheat in the rabi season. During the last decade there has been a State led attempt towards diversification of cropping pattern through contract farming and other means from wheat and rice cycle towards horticultural and other high value and export oriented crops. Due to slow growth of agriculture and allied sectors in the country, the RKVY programme was implemented to reinvent growth in agriculture in 2005-06. RKVY aimed at achieving 4 per cent annual growth in the agriculture sector during the 11th plan (2007-12).

4.4.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector. It is expected that the allocation and expenditure would move in the same direction. Nonetheless, that may not be true, but for present evaluation we shall focus our concentration on the expenditure actually incurred. We also look at the allocation data and the ratio of expenditure to allocation to point out whether there was any diversion taking place in the priorities set initially.

Data in Table 4.4.1 and Figure 4.4 present the numbers of projects undertaken under RKVY, their amount of allocation and expenditure, expenditure-allocation ratio and expenditure incurred per project. With respect to expenditure across sectors, eight major sectors, viz., Natural resource

management, horticulture, animal husbandry, dairy development, micro/minor irrigation, research and development, marketing and post harvest management and crop development contributed more than 80 per cent of the total expenditure and remaining sectors utilized less than 20 per cent of the total expenditure in the State. The highest expenditure per project was incurred on micro/minor irrigation sector spending Rs.40 crore per project followed by innovative programmes and natural resource management with more than Rs 10 crore each. The lowest amount per project was spent on fisheries sector with Rs. 0.56 crore (Figure 4.4) while nonfarm activities and information technology despite having planned for allocation did not spend any amount on those sectors. It is seen from the table that there is no sector where expenditure has exceeded the allocation in the State of Punjab. The sectors where expenditure covered more than 90 per cent of the allocated amount were micro and minor irrigation, organic farming and bio fertilizer and seed.As mentioned earlier, information technology and nonfarm activities were not taken up at all. The other sectors that spent the least allocated amount were horticulture (only 5 per cent of the allocation) and integrated pest management that spent only 20 per cent of the allocated amount. At the aggregate out of total allocation under RKVY in Punjab only 22 per cent was actually spent that was too low by all standards. In comparison to Punjab, Haryana spent around 73 per cent of the total allocation amount.

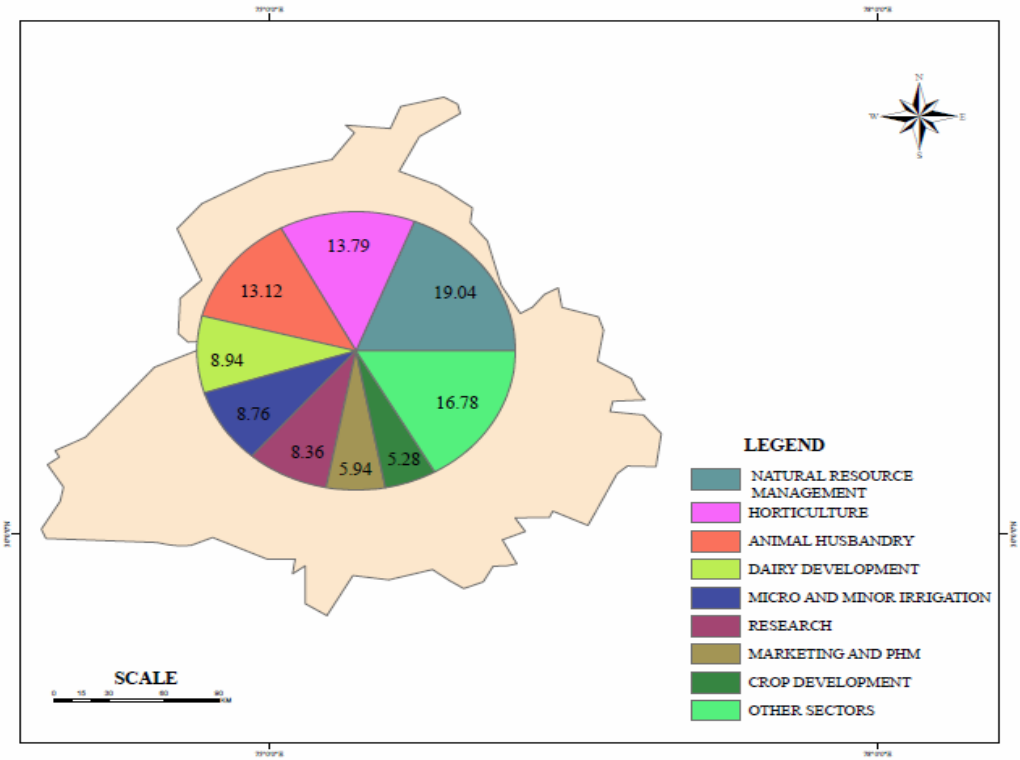


Figure 4.4: Share of Expenditure across Sectors

Note: Minor sector, include Agriculture mechanization, Organic farming / bio fertilizer, Fertilisers and INM, Innovative programmes/ training/ capacity building/ others, Extension, Integrated pest management, Seed, Fisheries, Non farm activities and Information technology

If one looks at the priorities set during the beginning of the Plan, the allocation was planned much higher than the expenditure incurred by the State Government in the case of horticulture where against the planned amount of Rs. 1309 crore only 62 crore was spent. However, the reduction in total expenditure in the horticulture sector might not be the result of change in priority by the State Government as even the percentage of expenditure on horticulture in the total expenditure under RKVY was placed second similar to what is was in the case of allocation. The decline in expenditure on horticulture may be the result of lower overall amount spent under RKVY as compared to allocation. Out of Rs. 2117 crore of allocation in Punjab only Rs. 457 crore was spent by the State Government during the 11th Five Year Plan. Interestingly, a few lower priority sectors like innovative programmes, extension, organic farming/bio fertilizer and agricultural mechanization were found to have spent more amounts per project when compared to few higher priority sectors like animal husbandry, dairy development, research and horticulture.

4.4.3. Sector-Wise Size of the Projects based on the Expenditure

Table 4.4.2 presents the numbers and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY per project has been divided into Rs. 0-1 crore, Rs. 1-10 crore and Rs. 10-25 crore. Out of the total expenditure, 35 per cent of the projects incurred around 4 per cent of the expenditure at the bottom spending less than Rs. 1 crore amounts on each project. On the other extreme, around 8per cent of the projects incurred around 27 per cent amount having each project between Rs. 10 to 25 crore and only less than 2 percent of projects spent around 21 per cent of the total amount spending above Rs. 25 crore on each project. Micro and minor irrigation spent the whole amount of Rs. 40 crore on projects having value above Rs. 25 crore each while natural resource management spent 62 per cent of their total expenditure on projects have value of above Rs. 25 crore of each project. Innovative programmes spent whole amount on project with value between Rs. 10 to 25 crore each. Similarly, organic farming spent 90 percent and marketing projects spent 74 per cent of their total amount on projects having value of Rs. 10-25 crore of each project. Looking at the projects that had value between Rs. 1-10 crore of each project, extension and seed project spent the whole amount within this range while integrated pest management, fertilizer and INM and research had above 90 per cent of their amount spent on projects that had each project value in the above mentioned range. At the bottom of project value of less than Rs. 1 crore only fisheries had above 40 per cent of their expenditure while all other projects spent less than 10 percent of their total expenditure having value of less than Rs. 1 crore per project.

4.4.4. Sector-Wise Expenditure according to Status

The status-wise expenditure is presented in Table 4.4.3. Out of the total amount spent in Punjab, 70 per cent was spent on projects completed or substantially completed and 30 per cent was spent on projects either abandoned or projects in progress and ongoing. The completed projects

included, micro and minor irrigation, crop development, organic farming, extension and integrated pest management where total expenditure was spent on the completed projects and no amount was deferred into ongoing projects. On the other extreme, a large amount of expenditure was reported in the ongoing activities in the case of natural resource management, horticulture and animal husbandry. The sectors like innovative programmes/training/capacity building, information technology and nonfarm activities did not complete any projects although projects were meant to be completed within 11th Five Year Plan but spilled over to the 12th Five Year Plan.

4.4.5. Sector and Sub Sector Wise Distribution of Projects by Nature

Table 4.4.4 presents sector and sub-sector-wise expenditure on Infrastructure and non-infrastructure projects of normal, National and State Flagship programmes in Punjab. Out of the total expenditure of Rs. 456.8 crore under RKVY scheme in Punjab. 0.2 per cent was spent on development of infrastructure in agriculture and allied activities and remaining 99.9 per cent was on non-infrastructural activities. It is to be noted that there was no National Sponsored Flagship Programme undertaken in Punjab under the programme of RKVY. Infrastructure expenditure of normal projects was less 0.1 per cent of the total expenditure. Conversely, non-infrastructure expenditure of normal and State flagship accounted for 95.7 per cent and 4.1 per cent of the total expenditure, respectively. The total expenditure incurred on infrastructure assets projects and non-infrastructure projects was Rs. 0.7 crore and Rs. 456.1 crore, respectively. The natural resource management sector accounted for highest share of Rs. 87 crore followed by horticulture accounting for Rs. 63 crore and animal husbandry of Rs 60 crore of the total expenditure under RKVY projects in Punjab.

Within the sub-sectors, water conservation structures and watershed development has contributed Rs. 84.4 crores to the total expenditure, followed by pump sets (diesel/electric) (Rs. 40 crore) and agri. research project (Rs. 38.2 crore) and assistance to dairy unions/farmers (Rs 32.9 crore). Under State Flagship projects, expenditure was incurred on natural resource management and dairy development projects. Only small amount was spent on nurseries and greenhouses under the head of infrastructure projects in the normal projects. Thus, in the State of Punjab hardly any efforts were made to create infrastructure through the package of RKVY.

4.4.6. Major Sector-Wise Stated and Actual Goals

The summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Punjab as provided in the websiteare shown in the Appendix Table 4.4. Our purpose here is to verify whether the stated targets set at the beginning of the project have been achieved or not subject to information provided by the State Government on the website. Under natural resource management, the major components covered were reclamation of degraded soil, conservation of irrigation water and rain water harvesting. It was intended to

increase yield and production on 8340 hectares by controlling the salt accumulation in the soil as well as erosion control on 2000 hectares. Further the expected output was 200 hectares of rain water harvesting structures and ground water recharge on 500 hectare. The end result on outcome and output was not available on the website.

In the horticultural sector the components covered were promotion of citrus fruits through contract farming, disease free production of horticultural crops, National Mission for protein supplement, setting up high tech model nursery, net house technology, sericulture development, and construction of shade net house and so on. The expected output was 36000 hectares of citrus fruit estates and 2.8 lakh hectares of disease free fruit and vegetable area. However, data on actual output and outcome was not available on the website.

In animal husbandry, the main intended activities were increase in import of HF frozen semen, improved processing of meat to increase value addition, animal insurance, provision for veterinary care and medicines, reduction of infertility, awareness programmes on mastitis control, fodder seed processing, setting up of residue analysis laboratories, establishment of piggery and goat units, dairy education and training and clean milk production and testing lab. The data in appendix table 4.4.5 reveals that there been semen insemination in 1.45 lakh animals under RKVY programme. It also reveals that there has been a target of increasing farmers' income through increase in milk production. Under the FMD control programme a target has been set for vaccination of 9 lakh animals twice a year. Under accelerated fodder programme, intended output has been to increase fodder availability by 34 kg per animal per day.

Under other minor programmes like micro irrigation, more economical use of surface and subsurface water, sinking and installation of deep tube wells were targeted. Similarly, under marketing and post harvest management and crop development the components covered were strengthening marketing infrastructure, providing plastic crates for fruits and vegetables and promotion of cultivation of basmati rice and sugarcane. However, the details of achievements were not available.

4.4.7. An Assessment of RKVY Performance in the State and Concluding Remarks

In Punjab, RKVY project comprises of 18 sectors which includes 38 sub sectors. Out of the 18 sectors, 8 sectors absorbed 83.2 per cent of the expenditure. Among the major sectors, natural resource management utilized the major funds, followed by horticulture, animal husbandry, dairy development, micro/minor irrigation, research, marketing and post harvest management and crop development. However, in order to develop the infrastructure and assets in the agriculture and allied sectors under RKVY, a miniscule amount was allocated (0.6 per cent of the total expenditure) to infrastructure projects in Punjab. Besides, 4.2 per cent was spent on the State Flagship projects especially in the natural resource management sector. The pattern of expenditure incurred also shows the priority areas chosen by the State Government to achieve

higher productivity in agriculture and to raise the growth rate of agriculture to help achieve higher growth path for the State economy.

If one looks at the expenditure pattern by sub sectors (Table 4.4.4), it clearly reveals that the State emphasized on water conservation and watershed management under natural resource management, area expansion of fruits and vegetables under the horticulture sector, animal health and breed improvement, feed and fodder and assistance to dairy unions under animal husbandry and dairy development sector, pump sets under the head of micro irrigation, agri research and strengthening market infrastructure under research and marketing and post harvest management and wheat under crop development.

Looking at the agriculture performance in the State, it is observed that the priority areas chosen by the State Government more or less are justified. The strength of Punjab agriculture like Haryana has remained in high irrigation led crop productivity whereby farm water management and tube wells getting highest priority spells the doom caused by excessive use of water in growing paddy and other such crops that has created a problem of fast falling water table in both the States. Thereby farm water conservation has very high significance in the State. For more than a decade ago, Punjab Government started diversification of wheat and rice crop under PAFC (Punjab Agriculture Food grains Corporation) led contract farming that started in 2002-03. The priority of the State Government towards diversification towards fruits and vegetables is also reflected by the programme on promotion of citrus cultivation through contract farming under RKVY. Similar to Haryana, Punjab has also been known for milk production and attempts in animal health and breed improvement is a step in the right direction. The priority towards market infrastructure has also an indication of reducing wastage that is widespread among perishable crops. The other priority areas in crop development also indicate the States' objective of increasing crop productivity. The State also needs to upgrade processing sector especially in the perishable crops which is also most important for increasing farmers' income and bringing more agro based employment.

We try to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor alone. Table 4.4.5 shows that although revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 27 per cent in the 11th Plan over 10th Plan (compared to 65 per cent in the case of Haryana), however, percentage of agriculture share in the State budget increased only marginally, from 14.3 percent in the 10th Plan to 15.1 per cent during the 11th Plan. Out of total expenditure in agriculture in the State, RKVY shared 4.0 per cent of the total expenditure. Agriculture expenditure as a percentage of State GSDP increased from 3.8 per cent in the 10th Plan to 4.5 per cent in the 11th Plan, this also suggest that GSDP from other sectors have increased faster than the GSDP from agriculture in the State from 10th to 11thPlan. Looking at sub sector budgetary expenditure (Table 4.4.6), the

highest percentage change over the previous Plan happened in crop husbandry and dairy development, fisheries, cooperation and medium and major irrigation, animal husbandry and soil and water conservation, some of these also received prime priority under RKVY.

We have already stated that agricultural GSDP grew at a rate of 2.1 per cent in the 10th Plan that further declined to less than 2 per cent in the 11th Plan in the State that was less than half of the target set under the RKVY. There was no significant increase in the gross cropped area as well cropping intensity during the above mentioned period (Table 4.4.8). However, land productivity per hectare in value terms increased from Rs. 74 thousand in the 10thPlan to approximately Rs 84 thousand in the 11th Plan, a part of that may be due to inflation factor. Although a lot of work on irrigation projects was taken up, especially in the micro irrigation, the net and gross irrigated area remained almost at the level where it was in the previous Plan period. There was some increase in irrigation intensity from 152.5 during the 10th Plan to 189.1 at the end of 11th Plan (Table 4.4.9). The growth rate in area, yield and production had also almost declined in most of the crops (Table 4.4.10).Looking at average annual growth of livestock and fishery production in the State, there was almost decline in production growth rate in all the allied activities including milk, meat, egg and fish during 11th FYP over 10th FYP (Table 4.4.11).

To conclude, the information displayed on the RKVY website proclaims having achieved most of the output and outcome stated for the RKVY programme. However, on the cross checking, the performance of agriculture in the State does not portray a very rosy picture, as in most of the indicators, the performance of agriculture has remained only moderate.

TABLES

Table 4.4.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th Five Year Plan

Sectors	No. of project	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio	Expenditure per Project (Rs. crore)
NRM	8 (9)	161.9 (7.7)	86.9 (19.1)	0.5	10.9
Horticulture	14 (29)	1309.6 (61.9)	62.9 (13.8)	0.0	4.5
Animal Husbandry	30 (41)	151.4 (7.2)	59.9 (13.2)	0.4	2.0
Dairy Development	17 (25)	107.2 (5.1)	40.8 3(9)	0.4	2.4
Micro/Minor Irrigation	1 (2)	41.9 (2)	40 (8.8)	1.0	40.0
Research	17 (21)	91.9 (4.4)	38.2 (8.4)	0.4	2.2
Marketing & PHM	4 (4)	44.9 (2.2)	27.1 (6)	0.6	6.8
Crop Development	4 (7)	41.5 (2)	24.1 (5.3)	0.6	6.0
Agriculture Mechanisation	4 (8)	27.4 (1.3)	16.3 (3.6)	0.6	4.1
Organic Farming / Bio Fertiliser	3 (3)	13.5 (0.7)	12.3 (2.7)	0.9	4.1
Fertilisers & INM	3 (7)	24.9 (1.2)	10.5 (2.4)	0.4	3.5
Innovative Programmes	1 (2)	23 (1.1)	10.01 (2.2)	0.4	10.0
Extension	1 (2)	12.8 (0.7)	8.8 (2)	0.7	8.8
Integrated Pest Management	3 (4)	35.5 (1.7)	7.0 (1.6)	0.2	2.3
Seed	3 (4)	6.8 (0.4)	6.2 (1.4)	0.9	2.1
Fisheries	10 (16)	14.08 (0.7)	5.6 (1.3)	0.4	0.6
Non Farm Activities	0 (2)	5.5 (0.3)	0 (0)	0.0	0.0
IT	0 (1)	3.8 (0.2)	0 (0)	0.0	0.0
Grand Total	**123 (187)**	**2117.5 (100)**	**456.8 (100)**	**0.2**	**3.7**

Source: www.rkvy.nic.in as on April, 2013; **Note:** Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3); Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis). INM: Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management; if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 4.4.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**
Natural resource management	12.5	0.6	62.5	25.6	12.5	11.5	12.5	62.3	8(100)	87(100)
Horticulture	21.4	2.4	64.3	60.7	14.3	36.9	0	0	14(100)	63(100)
Animal husbandry	40	6.01	56.7	75.7	3.3	18.4	0	0	30(100)	60(100)
Dairy development	41.2	8.6	52.9	54.7	5.9	36.7	0	0	17(100)	40.9(100)
Micro/minor irrigation	0	0	0	0	0	0	100	100	1(100)	40(100)
Research (agri/horti/animal husbandry/etc.)	29.4	6.3	70.6	93.7	0	0	0	0	17(100)	38.2(100)
Marketing and post harvest management	0	0	75	26.3	25	73.7	0	0	4(100)	27.2(100)
Crop development	25	3.4	50	46.9	25	49.8	0	0	4(100)	24.2(100)
Agriculture mechanisation	50	7.7	25	30.8	25	61.5	0	0	4(100)	16.3(100)
Organic farming / bio fertiliser	33.3	2.05	33.3	8.2	33.3	89.8	0	0	3(100)	12.3(100)
Fertilisers and INM	33.3	1.9	66.7	98.1	0	0	0	0	3(100)	10.6(100)
Innovative programmes/ training/ capacity building/ others	0	0	0	0	100	100	0	0	1(100)	10.1(100)
Extension	0	0	100	100	0	0	0	0	1(100)	8.8(100)
Integrated pest management	33.3	7.2	66.7	92.8	0	0	0	0	3(100)	7.1(100)
Seed	0	0	100	100	0	0	0	0	3(100)	6.3(100)
Fisheries	80	44.7	20	55.3	0	0	0	0	10(100)	5.6(100)
Grand Total	**34.6**	**3.7**	**56.1**	**48.9**	**8.1**	**26.8**	**1.6**	**20.6**	**123(100)**	**456.8(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, No.s: Number of projects, Expd: Expenditure;
Figures in the parenthesis are percentage to the respective total

Table 4.4.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/Not yet implemented	
	No.	**Expenditure**	**No.**	**Expenditure**	**No.**	**Expenditure**
NRM	2	57.4	6	29.6	1	0.0
Horticulture	19	20.1	10	42.9	0	0.0
Animal Husbandry	20	22.1	19	37.4	2	0.5
Dairy Development	9	0.4	14	39.6	2	0.9
Micro/Minor Irrigation	0	0.0	1	40.0	1	0.0
Research	13	18.1	7	20.1	1	0.0
Marketing & PHM	1	1.1	3	26.0	0	0.0
Crop Development	2	0.0	4	24.1	1	0.0
Agriculture Mechanization	5	0.7	3	15.6	0	0.0
Organic Farming / Bio Fertilizer	0	0.0	3	12.3	0	0.0
Fertilizers & INM	4	0.0	3	10.5	0	0.0
Innovative Programmes	2	10.0	0	0.0	0	0.0
Extension	0	0.0	1	8.8	1	0.0
Integrated Pest Management	1	0.0	3	7.0	0	0.0
Seed	1	1.2	2	5.0	1	0.0
Fisheries	9	1.3	7	4.3	0	0.0
Non Farm Activities	1	0.0	0	0.0	0	0.0
IT	2	0.0	0	0.0	0	0.0
Grand Total	**91**	**132.3**	**86**	**323.0**	**10**	**1.4**

Source: http://rkvy.nic.in/ as on April, 2013

Note: No.: Number of projects

Table 4.4.4: Sector and Sub Sector wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project	Total		Grand Total
	Infra-structure	Non infra-structure	Non infra-structure	Infra-structure	Non infra-structure	
Natural resource management	**0.0**	**83.9**	**16.1**	**0(0)**	**100(87)**	**100(87)**
Land reclamation	0.0	100.0	0.0	0(0)	100(2.6)	100(2.6)
Water conservation structures and watershed dev	0.0	83.4	16.6	0(0)	100(84.4)	100(84.4)
Horticulture	**1.0**	**99.0**	**0.0**	**1.1(0.7)**	**99(62.4)**	**100(63)**
Area expansion	0.0	100.0	0.0	0(0)	100(2.1)	100(2.1)
Development of horticulture farms/ facilities	0.0	100.0	0.0	0(0)	100(9)	100(9)
Fruit & vegetables	0.0	100.0	0.0	0(0)	100(2)	100(2)
Fruits	0.0	100.0	0.0	0(0)	100(19.1)	100(19.1)
Nurseries and green houses	5.9	94.1	0.0	5.9(0.7)	94.2(10.7)	100(11.3)
Others (horticulture)	0.0	100.0	0.0	0(0)	100(6.1)	100(6.1)
Sericulture development	0.0	100.0	0.0	0(0)	100(0.3)	100(0.3)
Vegetable	0.0	100.0	0.0	0(0)	100(13.3)	100(13.3)
Animal husbandry	**0.0**	**100.0**	**0.0**	**0(0)**	**100(60)**	**100(60)**
Animal health	0.0	100.0	0.0	0(0)	100(17.1)	100(17.1)
Breed improvement	0.0	100.0	0.0	0(0)	100(13.2)	100(13.2)
Extension and training	0.0	100.0	0.0	0(0)	100(2.2)	100(2.2)
Feed and fodder	0.0	100.0	0.0	0(0)	100(21.8)	100(21.8)
Infrastructure	0.0	100.0	0.0	0(0)	100(5.8)	100(5.8)
Others (animal husbandry)	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Poultry	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Dairy development	**0.0**	**96.0**	**4.0**	**0(0)**	**100(40.9)**	**100(40.9)**
Assistance to dairy unions/ farmers (inc. training)	0.0	95.1	4.9	0(0)	100(32.9)	100(32.9)
Dairy units to farmers	0.0	100.0	0.0	0(0)	100(0.6)	100(0.6)
Others (dairy development)	0.0	100.0	0.0	0(0)	100(4.4)	100(4.4)
Promotion of milk collection centers	0.0	100.0	0.0	0(0)	100(3)	100(3)
Micro/minor irrigation	**0.0**	**100.0**	**0.0**	**0(0)**	**100(40)**	**100(40)**
Pump sets (diesel/electric)	0.0	100.0	0.0	0(0)	100(40)	100(40)
Research (agri/horti/animal husbandry/ etc.)	**0.0**	**100.0**	**0.0**	**0(0)**	**100(38.2)**	**100(38.2)**

Agri. research project	0.0	100.0	0.0	0(0)	100(38.2)	100(38.2)
Marketing and post harvest management	**0.0**	**100.0**	**0.0**	**0(0)**	**100(27.2)**	**100(27.2)**
Others (marketing & PHM)	0.0	100.0	0.0	0(0)	100(6)	100(6)
Setting up/ strengthening of market infrastructure	0.0	100.0	0.0	0(0)	100(21.2)	100(21.2)
Crop development	**0.0**	**96.6**	**3.4**	**0(0)**	**100(24.2)**	**100(24.2)**
Sugarcane	0.0	0.0	100.0	0(0)	100(0.9)	100(0.9)
Wheat	0.0	100.0	0.0	0(0)	100(23.4)	100(23.4)
Agriculture mechanization	**0.0**	**100.0**	**0.0**	**0(0)**	**100(16.3)**	**100(16.3)**
Custom hiring centers	0.0	100.0	0.0	0(0)	100(10)	100(10)
Machines and equipment assistance	0.0	100.0	0.0	0(0)	100(6.3)	100(6.3)
Organic farming / bio fertilizer	**0.0**	**100.0**	**0.0**	**0(0)**	**100(12.3)**	**100(12.3)**
Promotion of bio fertilizer	0.0	100.0	0.0	0(0)	100(12.3)	100(12.3)
Fertilizers and INM	**0.0**	**100.0**	**0.0**	**0(0)**	**100(10.6)**	**100(10.6)**
Micro nutrients labs	0.0	100.0	0.0	0(0)	100(6.2)	100(6.2)
Soil health cards and soil testing	0.0	100.0	0.0	0(0)	100(4.5)	100(4.5)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**0.0**	**0(0)**	**100(10.1)**	**100(10.1)**
Others (innovative programmes, training & others)	0.0	100.0	0.0	0(0)	100(10.1)	100(10.1)
Extension	0.0	100.0	0.0	0(0)	100(8.8)	100(8.8)
Training/ study tour	0.0	100.0	0.0	0(0)	100(8.8)	100(8.8)
Integrated pest management	**0.0**	**64.3**	**35.7**	**0(0)**	**100(7.1)**	**100(7.1)**
IPM labs	0.0	100.0	0.0	0(0)	100(4.6)	100(4.6)
Pest surveillance	0.0	0.0	100.0	0(0)	100(2.5)	100(2.5)
Seed	**0.0**	**100.0**	**0.0**	**0(0)**	**100(6.3)**	**100(6.3)**
Seed farm	0.0	100.0	0.0	0(0)	100(1.3)	100(1.3)
Seed processing centers and storage	0.0	100.0	0.0	0(0)	100(3)	100(3)
Seed testing lab	0.0	100.0	0.0	0(0)	100(2)	100(2)
Fisheries	**0.0**	**100.0**	**0.0**	**0(0)**	**100(5.6)**	**100(5.6)**
Farmers fish ponds/ assistance including training	0.0	100.0	0.0	0(0)	100(3.6)	100(3.6)
Fish seed	0.0	100.0	0.0	0(0)	100(0.3)	100(0.3)
Infrastructure/ ponds of fisheries/ dept/ agency	0.0	100.0	0.0	0(0)	100(1.5)	100(1.5)
Others (fisheries)	0.0	100.0	0.0	0(0)	100(0.4)	100(0.4)
Grand total	**0.1**	**95.7**	**4.1**	**0.2(0.7)**	**99.9(456.1)**	**100(456.8)**

Source: http://rkvy.nic.in/ as on April, 2013

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 4.4.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri. expenditure
2002-03	868	-125	743	6516	11.4	2.5	
2003-04*	995	125	1120	7480	15.0	3.6	
2004-05	1124	365	1489	9922	15.0	4.7	
2005-06	1021	297	1318	8255	16.0	4.1	
2006-07	883	350	1233	9217	13.4	3.8	
10th Plan	**4891**	**1013**	**5904**	**41390**	**14.1**	**3.8**	
2007-08	995	336	1332	9606	13.9	3.9	
2008-09	1021	423	1444	9666	14.9	4.2	
2009-10	1056	400	1457	9460	15.4	4.2	**4.0**
2010-11	1388	360	1748	10353	16.9	5.0	
2011-12*	1401	531	1932	13347	14.5	5.4	
11th Plan	**5862**	**2050**	**7912**	**52432**	**15.1**	**4.5**	
% change over 10th plan	**19.9**	**102.4**	**34.0**	**26.7**			

Source: State Finances, RBI
Note: * Revised estimates, rest all accounts
Agriculture and allied activities includes Irrigation and flood control
Budgetary expenditure is accounts only developmental expenditure
Percentage of RKVY expenditure to agriculture expenditure=RKVYexpenditure/agriculture expenditure*100

Table 4.4.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	85 (7.1)	303.4 (13.2)	257.0
2	Soil and Water Conservation	36.5 (3.1)	56.7 (2.5)	55.2
3	Animal Husbandry	113.1 (9.5)	208.1 (9.1)	84.0
4	Dairy Development	6.6 (0.6)	25.1 (1.1)	285.1
5	Fisheries	6.3 (0.6)	12.8 (0.6)	105.3
6	Forestry and Wild Life	95.4 (8)	73.1 (3.2)	-23.4
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	-84.7 (-7.1)	1.8 (0.1)	-102.0
9	Agricultural Research and Education	104.4 (8.8)	147.8 (6.5)	41.7
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	48.4 (4.1)	83.4 (3.7)	72.5
12	Other Agricultural Programmes	3.4 (0.3)	4.2 (0.2)	23.7
13	Major and Medium Irrigation	389.3 (32.5)	649.6 (28.3)	66.9
14	Minor Irrigation	63.4 (5.3)	85.1 (3.7)	34.2
15	Flood Control and Drainage	49.6 (4.2)	72.7 (3.2)	46.6
16	Others	281.9 (23.6)	579.3 (25.2)	105.5
	Total	**1198 (100)**	**2302.4 (100)**	**92.2**

Source: State Finances, RBI;

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parentheses are percentage to the respective total

Table 4.4.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Primary Sector	32.6	31.1	29.0	27.7	26.7	25.0	23.9	23.0	21.8
Secondary Sector	24.8	26.0	28.6	30.6	30.2	30.9	30.8	30.0	29.5
Tertiary Sector	42.6	42.9	42.3	41.7	43.2	44.1	45.3	47.0	48.7
Aggregate	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: CSO, MOSPI

Table 4.4.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-1.2	2.8	42	78	185.0	69642
2003-04	5.8	6.1	42	79	186.5	72979
2004-05	2.2	5.0	42	79	188.8	75268
2005-06	1.0	5.9	42	79	187.7	76132
2006-07	2.9	10.2	42	79	187.9	78452
10th Plan Average	**2.1**	**6.0**	**42**	**79**	**187.2**	**74494**
2007-08	3.8	9.0	42	79	188.0	81394
2008-09	2.0	5.8	42	79	189.8	83406
2009-10	-0.3	6.3	42	79	189.4	83372
2010-11	1.6	6.5	42	79	189.6	84742
2011-12	2.1	5.9	42	79	189.6	86555
11th Plan Average	**1.9**	**6.7**	**42**	**79**	**189.3**	**83894**

Source: Directorate of Economics and Statistics, GOI
Note: *land productivity = agricultural GSDP/ha of NSA

Table 4.4.9: Trend in Inputs Use in Punjab

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% Net irrigated to net sown area	Irrigation intensity (%)	%Gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	40.1	77.2	95.5	192.5	99.3	174.9
2003-04	41.0	77.0	96.6	188.0	97.4	190.1
2004-05	40.3	1.0	95.9	2.6	1.3	194.6
2005-06	40.2	76.8	95.9	191.1	97.6	210.1
2006-07	40.7	76.7	97.3	188.3	97.5	209.2
10th Plan Average	**40.5**	**61.7**	**96.2**	**152.5**	**78.6**	**195.8**
2007-08	41.1	76.9	98.2	187.0	97.7	215.7
2008-09	40.8	77.2	97.8	189.4	97.6	224.6
2009-10	40.7	77.1	98.0	189.4	98.0	237.1
2010-11	40.7	77.2	97.9	189.8	98.0	242.7
2011-12	40.7	77.2	97.9	189.8	98.0	243.6
11th Plan Average	**40.8**	**77.2**	**98.0**	**189.1**	**97.8**	**232.7**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area / Gross sown area*100

Table 4.4.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	1.1	2.9	1.8	1.5	0.8	-0.6
Bajra	-1.4	-0.4	0.5	-9.7	-10.7	1.7
Maize	-1.3	4.8	5.4	-3.9	1.0	5.1
Barley	-3.3	-3.5	-0.1	-8.5	-7.1	3.2
Coarse Cereals	-1.8	2.7	4.2	-4.9	0.1	5.3
Total Cereals	0.5	1.3	0.8	0.7	19.3	18.7
Gram	-11.5	-7.0	4.0	-10.8	-10.3	1.0
Arhar/Tur	-3.8	-1.7	1.7	-15.5	-14.2	1.6
Other Pulses	-9.9	-4.2	6.6	-25.5	-24.0	-18.4
Total Pulses	-9.2	-4.6	5.1	-9.6	-10.6	-1.1
Total Food grains	0.5	1.3	0.8	0.6	19.3	18.7
Groundnut	4.3	0.1	-1.2	-14.2	-1.9	13.7
Sesamum	-12.7	-14.6	-0.6	-11.7	-8.7	3.6
Rapeseed & Mustard	-1.7	-4.9	0.4	-5.5	-2.9	2.7
Sunflower	21.7	27.1	3.3	0.4	4.6	3.0
Total Oilseeds	-2.0	-0.5	3.2	-6.3	-2.5	4.3
Cotton	1.1	17.4	16.1	-1.4	-2.6	-18.3
Total Fibres	1.1	17.4	16.1	-22.5	-24.5	-21.8
Sugarcane	-5.2	-6.5	-1.0	-2.0	1.7	3.4

Source*:* Directorate of Economics and Statistics, GOI

Table 4.4.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	3.0	-10.1	5.7	13.8
2003-04	2.7	0.0	-2.0	26.7
2004-05	1.9	-20.0	19.9	-7.1
2005-06	4.2	0.0	-4.3	10.2
2006-07	2.9	1650.0	7.2	1.2
10th plan	**2.9**	**324.0**	**5.3**	**9.0**
2007-08	1.2	55.7	0.5	-9.2
2008-09	1.1	-0.9	-3.0	9.5
2009-10	0.0	36.1	-10.8	42.5
2010-11	0.4	19.0	8.0	-21.0
2011-12*	-	-	-	0.6
11th plan	**0.7**	**27.5**	**-1.3**	**4.5**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

4.5 UTTAR PRADESH

4.5.1. Background Information

Uttar Pradesh is a State in the north India, bordered by Rajasthan to the west, Haryana and Delhi to the northwest and it has boundary with Nepal and Uttarakhand to the north, Bihar to the east, Jharkhand to the southeast, and Madhya Pradesh to the southwest. It is the 5th largest State in the country, with a total geographical area of 243,286 sq. km (93,933 sq. mt.) accounting for 7.40 per cent of the country's total geographical area. The economy of Uttar Pradesh is largely agriculture based; about 68.20 per cent of the State's total geographical area is identified as net sown area (NSA) and 104.33 per cent as gross cropped area (GCA). The cropping intensity of the State is estimated at around 153 per cent, meaning that farmers are using half of their sown area for double cropping and rest of the half area is used for single crop alone in a year.

According to 2011 Census report, the total population of the State is Rs. 19.96 crore that is slightly less than 1/5th of the country's population. Thus, the State of Uttar Pradesh has more than double the population than its share in the total area in India. In other words, population density in Uttar Pradesh according to 2011 Census was 828 persons per sq km as compared to all India population density of 382 persons per sq km. Agriculture sector supports more than 75 per cent of the population. The share of primary sector in the GSDP of the State is still high although it declined from 27.1 per cent in the terminal year of the 10th Plan to around 22.6 per cent in 2011-12 (end of 11th Plan). Peculiarly, the share of secondary sector decreased from 25.4 per cent by the end of 10th Plan to 23.9 per cent by the end of 11thplan (Table 4.5.7), vis-a-vis services sector increased from 47.6 per cent to 53.5 per cent during the same time period. Due to slow growth of agriculture and allied sectors in the country, the RKVY programme was implemented to reinvent growth in agriculture in 2005-06. RKVY aimed at achieving 4 per cent annual growth in the agriculture sector during the 11th plan (2007-12).

4.5.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector. It is expected that the allocation and expenditure would move in the same direction. Nonetheless, that may not be true, but for present evaluation we shall focus our concentration on the expenditure actually incurred. We also look at the allocation data and the ratio of

expenditure to allocation to point out whether there was any diversion taking place in the priorities set initially.

Data in Table 4.5.1 and Figure 4.5 present the numbers of projects undertaken under RKVY, their amount of allocation and expenditure, expenditure-allocation ratio and expenditure incurred per project. With respect to expenditure across sectors, 9 major sectors viz. micro/minor irrigation, innovative programmes/ training/ capacity building/others, seed, fertilisers and INM, natural resource management, crop development, animal husbandry, horticulture and extension spent almost 83.66 per cent of the total expenditure and the remaining 11 minor sectors utilized only 16.34 per cent of the total expenditure in the State. The highest expenditure per project was incurred on micro/minor irrigation sector with Rs. 34 crore, followed by innovative programmes (Rs. 26 crore), fertilizer and INM (Rs. 16 crore) and natural resource management (Rs. 15 crore) while lowest was spent on fisheries sector with Rs. 0.94 crore (Figure 4.5). Nonfarm activities despite having planned for allocation did not spend any amount on those sectors. Interestingly, expenditure per project of a few minor sectors (cooperatives and dairy development, etc.,) was found to be higher when compared with few major sectors (seed, crop development, animal husbandry, horticulture and extension). Like in the case of Haryana, against the allocation expenditure on different projects was around 68 per cent of the total allocation. Similarly, out of 296 projects planned initially by the State only 250 project were taken up while rest of the projects indicated zero amounts spent during the 11th Five Year Plan. It is seen from the table that there is no sector where expenditure has either exceeded the allocation in the State or even spent the 100 per cent of the allocation amount in Uttar Pradesh. Only information technology spent more than 90 per cent of the allocated amount. The other sectors that spent more than 50 per cent of the allocated amount were agriculture mechanisation, fertilizers and INM, natural resource management, research, integrated pest management, organic farming, cooperatives, innovative programmes, micro irrigation, animal husbandry and so on. Nonfarm activities did not spend any amount out of 3 crore kept as allocation for this sector. At the aggregate, around 68 per cent of the total allocated amount was spent in Uttar Pradesh under RKVY during the 11th Five Year Plan.

4.5.3. Sector-wise size of the projects based on the expenditure

Table 4.5.2 presents the numbers and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY per project have been divided into Rs. 0-1 crore, Rs. 1-10 crore, Rs. 10-25 crore and above Rs. 25 crore. Out of the total expenditure, 31 per cent of the projects incurred less than 2 per cent of the expenditure at the bottom spending less than Rs 1 crore amounts on each project. On the other extreme, around 16 per cent of the projects incurred around 30 per cent amount having each project between Rs. 10 to 25 crore and only 9 percent of projects spent around 50 per cent of the total amount

spending above Rs. 25 crore on each project. In the category of above Rs. 25 crore per project, there were around 9 sectors having above Rs. 25 crore projects, the highest in the northern region. Innovative programmes had the highest percentage of amount of that sector's total expenditure spent under this category, followed by micro irrigation, fertilizer and INM and agricultural mechanization. In the category of Rs. 10-25 crore, the highest amount of the total expenditure of the sector, was spent in the projects under dairy development, information technology, and organic farming. Between 1-10 crore projects, highest amount of the sectors' total was spent on marketing, integrated pest management, research and sericulture. At the bottom, the sectors in which the projects that spent only less than 1 crore were minimal as less than 2 per cent of the aggregate expenditurewas spent in such projects. However, percentage of numbers of projects that fell in this category was much higher than their total expenditure percentage. For example the small projects were located in agricultural mechanisation, seed, organic farming, information technology and fertilizer and INM whereby the percentage of numbers was much higher compared to their percentage in expenditure while in the case of research and fisheries sectors, both percentages of numbers as well expenditure was found higher.

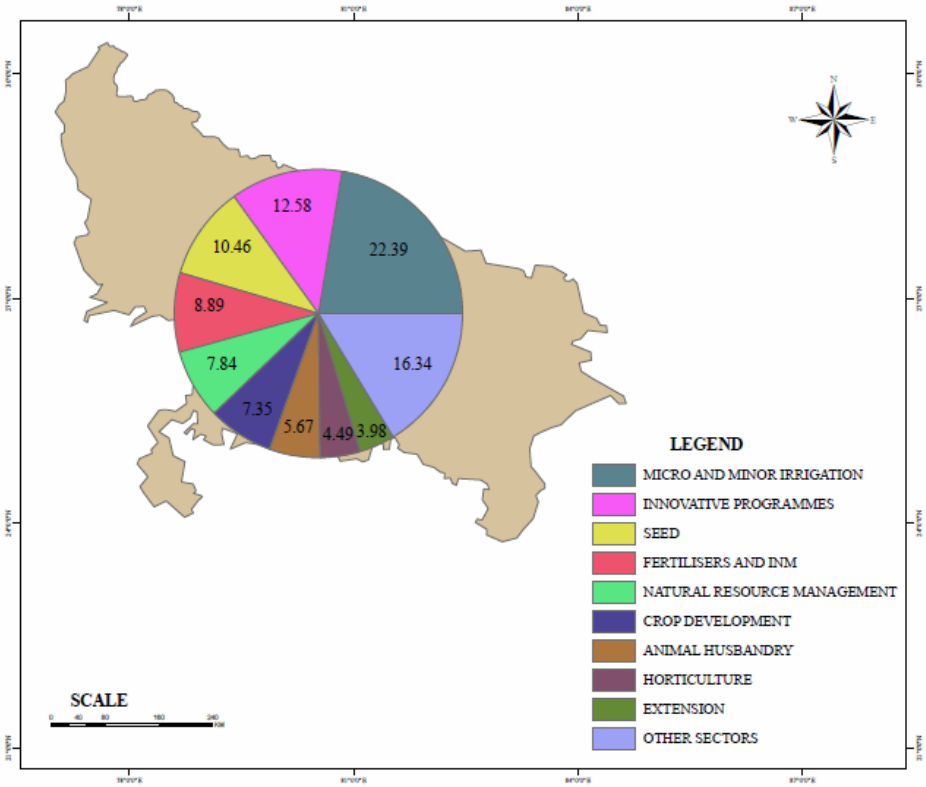


Figure 4.5: Share of Expenditure across Sectors

Note: Minor sector include agriculture mechanization, cooperatives and cooperation, dairy development, organic farming / bio fertilizer, sericulture, fisheries, information technology, integrated pest management, research (agri. /horti. /animal husbandry / etc.), marketing and post harvest management and nonfarm activities.

4.5.4. Sector-Wise Expenditure according to Status

The status-wise expenditure is presented in Table 4.5.3. Micro/minor irrigation sector had highest expenditure on completed and substantially completed projects with Rs. 302 crore followed by seed, innovative programmes and fertilizers and INM sectors with expenditure of Rs. 161.92, Rs. 141.46 and Rs. 132.39 crores, respectively. Marketing and post harvest management had least number of completed and substantially completed projects with an expenditure of Rs. 2.39 crores followed by research and integrated pest management with expenditure of Rs. 7.03, and Rs. 13 crores, respectively. Only marketing and post harvest management had full amount of expenditure spent on the completed projects meaning that there was no amount deferred for the next plan under RKVY while rest all the projects had some amount unspent that was passed on to the 12th Five Year Plan. Out of total expenditure, expenditure incurred on un-complete or ongoing projects was 167 crore in micro/minor irrigation sector, followed by innovative programmes, natural resource management and crop development with expenditure of Rs. 122, Rs. 111 and Rs. 97 crores, respectively. Sectors, viz., Marketing and post harvest management and nonfarm activities had no expenditure with respect to approved and ongoing project and projects in progress.

4.5.5. Sector and Sub Sector Wise distribution of Projects by Nature

Table 4.5.4 presents sector and sub-sector-wise expenditure on Infrastructure and non-infrastructure projects of normal, National and State Flagship programmes in Uttar Pradesh. Out of the total expenditure of Rs. 2095 crore under RKVY scheme in Uttar Pradesh, 24.6 per cent was spent on development of infrastructure in agriculture and allied activities and remaining 75.5 per cent was on non-infrastructural activities. It is to be noted that there was no National Sponsored Flagship Programme under taken in Uttar Pradesh under the programme of RKVY. Infrastructure expenditure of normal and State flagship projects was 22.3 per cent and 2.3 per cent of the total expenditure. Conversely, non-infrastructure expenditure of normal and State flagship accounted for 63.4 per cent and 12 per cent of the total expenditure, respectively. The total expenditure incurred on infrastructure assets projects and non-infrastructure projects was Rs. 515 crore and Rs. 1580.1 crore, respectively. The micro/minor irrigation sector accounted for highest share of Rs. 469.2 crore followed by innovative programmes/ training/ capacity building accounting for Rs. 263.5 crore of the total expenditure under RKVY projects in Uttar Pradesh.

Within the sub-sectors, pump sets (diesel/electric) has contributed Rs. 179.5 crores to the total expenditure, followed by tube wells (Rs. 135.5 crore), shallow wells/ dug well (Rs. 126.1 crore), fertilizer labs (Rs. 106.9 crore) and innovative programmes (Rs. 104 crore). Under the State Flagship programme, the major amount was spent on natural resource management, horticulture and extension activities. The major infrastructure amount was

spent in micro/minor irrigation (diesel pump sets and tube wells); seeds (seed farm and seed processing centres); sericulture (cocoon production) and dairy development (promotion of milk collection centre) and so on.

4.5.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 4.5 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Uttar Pradesh as provided in the website. Our purpose here is to verify whether the stated targets set at the beginning of the project have been achieved or not subject to information provided by the State Government on the website. Under micro irrigation, the efforts made under RKVY programme were to lay down irrigation canals and electrification of tube wells. Under the programme deep and medium boring was achieved for more than 5000 tube wells each and energisation of around 8000 tube wells was done. Similarly, more than 20000 numbers of private tube wells electrified from diesel. Under innovative programmes, agriculture diversification projects were taken up along with strengthening of credit provision and soil testing activities. Under the programme ICTD demonstration and training programmes were intended. The expected output and outcome was not available. Under seed programme, quality seed and mini kits distribution and quality seed management, processing and distribution was targeted. Among the achievements under the programme include strengthening of 2 mobile processing units, strengthening of 469 godown of 500 metric tonnes capacity, renewed 94000 metric tonnes seed storage capacity. As per the website information, under programme around 1.2 lakh tonnes of quality seed production, 1200 hectares potential irrigation was achieved.

4.5.7. An Assessment of RKVY Performance in the State and Concluding Remarks

In Uttar Pradesh, RKVY projects comprise of 20 sectors which include 71 sub sectors. Out of the 20 sectors, 9 sectors absorbed 83.66 per cent of the expenditure. Among the major sectors, micro/minor irrigation utilized the major funds, followed by innovative programmes/ training/ capacity building/ others, seed, fertilisers and INM, natural resource management, crop development, animal husbandry, horticulture and extension. To develop infrastructure in the agriculture and allied activities, RKVY allocated around 1/4th share of the total spending towards infrastructure and assets building. The infrastructure building was mainly attempted in minor irrigation, seed, natural resource management and horticultural sector. Besides, infrastructure, State flagship projects were also taken up for further initiating the special works to strengthen the agriculture sector. The State flagship programmes were confined mainly in the natural resource management, horticulture, extension activities, information technology and organic farming/bio fertilizer. The pattern of expenditure incurred also shows the priority areas chosen by the State Government to achieve higher productivity in

agriculture and to raise the growth rate of agriculture to help achieve higher growth path for the State economy.

If one looks at the expenditure pattern by sub sectors (Table 4.5.4), it clearly reveals that the State emphasized on pump sets, shallow wells and tube wells, innovative programmes including training of the farmers, strengthening of fertilizer labs and soil health cards, quality seed provision to the farmers, land reclamation and horticultural production especially vegetable production. If one looks at the agriculture performance in the State one finds the priority areas chosen by the State are more or less justified. The strength of Uttar Pradesh's agriculture has remained in high irrigation led crop productivity whereby tube wells, shallow wells and electrification of diesel tube well indicates the importance of irrigation in the State agriculture. As western Uttar Pradesh has better productivity compared to Central and Eastern Uttar Pradesh, thereby State Government's attempt to increase irrigation facilities in the other part of the State indicates the intension of the State Government to raise productivity on irrigated area. However, less priority to animal husbandry and dairy is mis-specified as these activities are the source of supplementary income for the farmers. The other priority areas in seed, extension and innovation also indicate the States' objective of increasing crop productivity. However, some priority should have been given to post harvest management and in the processing sector.

We try to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor alone. Table 4.5.5 shows that although revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 60 per cent in the 11th Plan over 10th Plan, however, percentage of agriculture share in the State budget increased only marginally from 14.7 percent in the 10th Plan to 15.0 per cent during the 11th Plan. Out of total expenditure in agriculture in the State, RKVY shared only 4 per cent of the total expenditure. Although agriculture share in State total budget was almost stagnant in the 11th Plan but agriculture expenditure as a percentage of State GSDP increased from 5.9 per cent in the 10th Plan to 8.5 per cent in the 11th Plan, this also suggest that GSDP from other sectors have increased faster than the GSDP from agriculture in the State from 10th to 11th Plan. Looking at sub sector budgetary expenditure (Table 4.5.6), the highest percentage change over the previous plan happened in food storage and warehousing, cooperation, agriculture research, dairy development, minor irrigation and soil and water conservation, most of them also received prime priority under RKVY except the case of post harvest management.

The main objective of RKVY programme was to raise the growth rate of agriculture sector though bridging the gaps in the inputs where ever necessary meeting through this fund

available from the Central Government. Looking at the actual performance of the State during the 11th Plan compared to 10th Plan the growth rate agriculture GSDP at constant prices is the one prime indicator of the State agriculture performance. We can see from Table 7 that agricultural GSDP grew at a rate of only 1.5 per cent in the 10th Plan that doubled to 3.2 per cent in the 11th Plan in the State. Although it was still below the 4 per cent per annum target but overall rate of growth of agriculture improved during this period in the State. There was no significant increase in the gross cropped area as well cropping intensity during the above mentioned period (Table 4.5.8). However, land productivity per hectare in value terms increased from Rs. 47 thousand in the 10th Plan to approximately Rs. 54 thousand in the 11th Plan, a part of that may be due to inflation factor. Although a lot of work on irrigation projects was taken up, especially in the micro irrigation, the net and gross irrigated area increased only marginally from 131 to 134 lakh hectares in the net irrigated area and from 178 to 194 lakh hectares in the case of gross irrigated area. There was marginal increase in irrigation intensity from 143 during the 10th Plan to 145 at the end of 11th Plan (Table 4.5.9). The growth rate in area, yield and production was also better than the performance seen in the States of Punjab and Haryana, whereby production growth increased in rice, wheat coarse cereals and pulses but declined in oilseeds and sugarcane (Table 4.5.10). Average annual growth of livestock and fishery production in State was significant especially in the case of milk and fish when compared with the growth during the previous plan period, while meat sector jumped in growth rate up to around 20 per cent in the 11th FYP (Table 4.5.11).

To conclude, the information displayed on the RKVY website does not provide the details on output and outcome under the RKVY programme. However, on the cross checking, the performance of agriculture in the State was seen encouraging in terms of increase in overall agriculture growth rate as well as increase in production of major crops. However, indicators like increase in irrigated area, cropping intensity does not portray a very rosy picture, as in these indicators, the performance of agriculture has remained only moderate.

TABLES

Table 4.5.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th Five Year Plan

Sectors	No. of project	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio	Expenditure per Project (Rs. crore)
Micro/Minor Irrigation	14 (18)	736.2 (24)	469.1 (22.4)	0.6	33.5
Innovative Programmes	10 (11)	352.4 (11.5)	263.4 (12.6)	0.7	26.3
Seed	25 (29)	330.8 (10.8)	219.2 (10.5)	0.7	8.8
Fertilizers & INM	12 (12)	219.5 (7.2)	186.3 (8.9)	0.8	15.5
NRM	11 (13)	198.2 (6.5)	164.2 (7.9)	0.8	14.9
Crop Development	22 (29)	231.4 (7.6)	154.1 (7.4)	0.7	7.0
Animal Husbandry	38 (43)	185.1 (6.1)	118.8 (5.7)	0.6	3.1
Horticulture	19 (22)	205.4 (6.7)	94.1 (4.5)	0.5	5.0
Extension	15 (17)	140.6 (4.6)	83.4 (4)	0.6	5.6
Agriculture Mechanization	14 (14)	69.4 (2.3)	62.1 (3)	0.9	4.4
Cooperatives And Cooperation	5 (5)	81.8 (2.7)	60.4 (2.9)	0.7	12.1
Dairy Development	5 (7)	89.9 (3)	54.3 (2.6)	0.6	10.9
Organic Farming / Bio Fertilizer	10 (11)	63.7 (2.1)	50.5 (2.5)	0.8	5.1
Sericulture	5 (8)	60.8 (2)	36.7 (1.8)	0.6	7.4
Fisheries	25 (31)	40.4 (1.4)	23.5 (1.2)	0.6	0.9
IT	4 (7)	24.3 (0.8)	23.01 (1.1)	0.9	5.8
Integrated Pest Management	10 (10)	28.6 (1)	21.9 (1.1)	0.8	2.2
Research	5 (6)	8.7 (0.3)	7.4 (0.4)	0.9	1.5
Marketing & PHM	1 (2)	5.4 (0.2)	2.4 (0.2)	0.4	2.4
Non Farm Activities	0 (1)	3 (0.1)	0 (0)	0.0	0.0
Grand Total	**250 (296)**	**3075.5 (100)**	**2094.9 (100)**	**0.7**	**8.4**

Source: www.rkvy.nic.in as on April, 2013; **Note:** Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3); Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis); INM: Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management; if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 4.5.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**
Micro/minor irrigation	0	0	28.6	4.3	21.4	9.5	50	86.2	14(100)	469.2(100)
Innovative programmes/ training/ capacity building/ others	20	0.1	40	3.5	0	0	40	96.3	10(100)	263.5(100)
Seed	24	1.5	44	23.4	28	59.5	4	15.7	25(100)	219.2(100)
Fertilizers and INM	50	1.5	16.7	3.5	8.3	11.8	25	83.3	12(100)	186.4(100)
Natural resource management	9.1	0.4	36.4	9.7	27.3	37.9	27.3	52.2	11(100)	164.2(100)
Crop development	27.3	1.1	45.5	34.2	22.7	47.8	4.6	16.8	22(100)	154.1(100)
Animal husbandry	21.06	4.7	71.06	59.2	7.9	35.4	0	0	38(100)	118.7(100)
Horticulture	36.9	2.9	47.4	37.6	10.5	30.8	5.3	28.6	19(100)	94.2(100)
Extension	26.7	1.9	53.3	28.4	13.3	38.06	6.7	31.7	15(100)	83.5(100)
Agriculture mechanization	35.7	2.08	50	32.6	7.1	21.8	7.1	43.5	14(100)	62.1(100)
Cooperatives and cooperation	0	0	40	9.68	60	90.3	0	0	5(100)	60.4(100)
Dairy development	20	1.5	0	0	80	98.5	0	0	5(100)	54.4(100)
Organic farming / bio fertilizer	40	5.3	30	28.7	30	66.03	0	0	10(100)	50.6(100)
Sericulture	0	0	80	70.1	20	29.8	0	0	5(100)	36.8(100)
Fisheries	64	30.1	36	69.9	0	0	0	0	25(100)	23.6(100)
Information technology	75	9.3	0	0	25	90.7	0	0	4(100)	23.1(100)
Integrated pest management	40	7.3	60	92.7	0	0	0	0	10(100)	22(100)
Research (agri/horti/animal husbandry, etc.)	80	21.7	20	78.3	0	0	0	0	5(100)	7.4(100)
Marketing and post harvest management	0	0	100	100	0	0	0	0	1(100)	2.4(100)
Grand Total	**30.8**	**1.7**	**44.8**	**18.96**	**15.6**	**29.7**	**8.8**	**49.63**	**250(100)**	**2095(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, No.s: Number of projects, Expd: Expenditure;
Figures in the parenthesis are percentage to the respective total

Table 4.5.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/Not yet implemented	
	No.	**Expenditure**	**No.**	**Expenditure**	**No.**	**Expenditure**
Micro/Minor Irrigation	7	166.9	8	302.2	3	0.0
Innovative Programmes	7	122.0	4	141.5	0.0	0.0
Seed	8	57.3	19	161.9	2	0.0
Fertilisers & INM	5	53.9	7	132.4	0.0	0.0
NRM	7	111.4	6	52.8	0.0	0.0
Crop Development	17	97.1	9	57.0	3	0
Animal Husbandry	20	66.4	20	52.3	3	0
Horticulture	8	22.5	13	71.6	1	0
Extension	4	3.3	11	80.1	2	0
Agriculture Mechanization	3	3.1	11	58.9	0.0	0.0
Cooperatives And Cooperation	2	19.3	3	41.1	0.0	0.0
Dairy Development	5	30.3	2	24.0	0.0	0.0
Organic Farming / Bio Fertiliser	6	12.3	5	38.3	0.0	0.0
Sericulture	1	7.9	4	28.9	3	0.0
Fisheries	15	8.0	15	15.5	1	0.0
IT	3	1.4	3	21.6	1	0.0
Integrated Pest Management	5	9.0	5	13.0	0.0	0.0
Research	2	0.3	3	7.0	1	0.09
Marketing & PHM	1	0.0	1	2.4	0.0	0.0
Non Farm Activities	0.0	0.0	0.0	0.0	1	0.0
Grand Total	**126**	**792.2**	**149**	**1302.7**	**21**	**0.09**

Source: http://rkvy.nic.in/ as on April, 2013

Note: No.: Number of projects

Table 4.5.4: Sector and Sub Sector Wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Micro/minor irrigation	**63.6**	**36.4**	**0.0**	**0.0**	**63.7(298.5)**	**36.4(170.7)**	**100(469.2)**
Canals	0.0	100.0	0.0	0.0	0(0)	100(24.1)	100(24.1)
Check dams/ water courses bunds	100.0	0.0	0.0	0.0	100(4.2)	0(0)	100(4.2)
Pump sets (diesel/electric)	88.5	11.5	0.0	0.0	88.6(158.9)	11.5(20.6)	100(179.5)
Shallow wells/ dug well	0.0	100.0	0.0	0.0	0(0)	100(126.1)	100(126.1)
Tube wells	100.0	0.0	0.0	0.0	100(135.5)	0(0)	100(135.5)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(263.5)**	**100(263.5)**
Innovative programmes	0.0	100.0	0.0	0.0	0(0)	100(7.5)	100(7.5)
Others (innovative programmes, training & others)	0.0	100.0	0.0	0.0	0(0)	100(104.4)	100(104.4)
Research and training	0.0	100.0	0.0	0.0	0(0)	100(1)	100(1)
Soil testing lab	0.0	100.0	0.0	0.0	0(0)	100(3.2)	100(3.2)
Seed	**38.6**	**61.4**	**0.0**	**0.0**	**38.7(84.7)**	**61.4(134.6)**	**100(219.2)**
Others (seed)	0.0	100.0	0.0	0.0	0(0)	100(22)	100(22)
Seed certification	0.0	100.0	0.0	0.0	0(0)	100(19.2)	100(19.2)
Seed farm	88.8	11.2	0.0	0.0	88.8(62.8)	11.3(8)	100(70.7)
Seed processing centers and storage	83.3	16.7	0.0	0.0	83.4(21.5)	16.7(4.3)	100(25.8)
Seed production	0.8	99.2	0.0	0.0	0.9(0.5)	99.2(59.3)	100(59.8)
Seed subsidy	0.0	100.0	0.0	0.0	0(0)	100(21.2)	100(21.2)
Seed testing lab	0.0	100.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Fertilizers and INM	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(186.4)**	**100(186.4)**
Fertilizer labs	0.0	100.0	0.0	0.0	0(0)	100(106.9)	100(106.9)
Soil health cards and soil testing	0.0	100.0	0.0	0.0	0(0)	100(74.4)	100(74.4)
Soil testing lab	0.0	100.0	0.0	0.0	0(0)	100(5.2)	100(5.2)
Natural resource management	**0.0**	**54.9**	**14.6**	**30.5**	**14.7(24)**	**85.4(140.2)**	**100(164.2)**
Land reclamation	0.0	34.6	32.0	33.3	32.1(24)	68(51)	100(75)
Others (NRM)	0.0	100.0	0.0	0.0	0(0)	100(35.8)	100(35.8)
Soil testing lab	0.0	8.1	0.0	91.9	0(0)	100(27.2)	100(27.2)
Water conservation structures and watershed dev.	0.0	100.0	0.0	0.0	0(0)	100(26.4)	100(26.4)
Crop development	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(154.1)**	**100(154.1)**
Coarse cereals	0.0	100.0	0.0	0.0	0(0)	100(0.4)	100(0.4)

Oilseeds and pulses	0.0	100.0	0.0	0.0	0(0)	100(10.5)	100(10.5)
Others (crop development)	0.0	100.0	0.0	0.0	0(0)	100(17.4)	100(17.4)
Paddy	0.0	100.0	0.0	0.0	0(0)	100(21.2)	100(21.2)
Sugarcane	0.0	100.0	0.0	0.0	0(0)	100(48.8)	100(48.8)
Wheat	0.0	100.0	0.0	0.0	0(0)	100(56.2)	100(56.2)
Animal husbandry	**3.3**	**95.0**	**0.0**	**1.7**	**3.4(4)**	**96.7(114.8)**	**100(118.7)**
Animal health	0.0	65.6	0.0	34.4	0(0)	100(5.8)	100(5.8)
Breed improvement	6.1	93.9	0.0	0.0	6.1(2)	94(30.1)	100(32)
Extension and training	0.0	100.0	0.0	0.0	0(0)	100(13)	100(13)
Feed and fodder	0.0	100.0	0.0	0.0	0(0)	100(24.8)	100(24.8)
Goat farming	0.0	100.0	0.0	0.0	0(0)	100(1.2)	100(1.2)
Infrastructure	0.0	100.0	0.0	0.0	0(0)	100(13.3)	100(13.3)
Others (animal husbandry)	0.0	100.0	0.0	0.0	0(0)	100(21.3)	100(21.3)
Pig farming	0.0	100.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Poultry	29.6	70.4	0.0	0.0	29.6(2)	70.5(4.8)	100(6.8)
Horticulture	**0.0**	**32.8**	**0.0**	**67.2**	**0(0)**	**100(94.2)**	**100(94.2)**
Area expansion	0.0	100.0	0.0	0.0	0(0)	100(3.8)	100(3.8)
Aromatic plants	0.0	100.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Development of horticulture farms/ facilities	0.0	100.0	0.0	0.0	0(0)	100(4)	100(4)
Floriculture	0.0	100.0	0.0	0.0	0(0)	100(3.6)	100(3.6)
Mushroom	0.0	100.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Nurseries and green houses	0.0	0.0	0.0	100.0	0(0)	100(15.5)	100(15.5)
Others (horticulture)	0.0	100.0	0.0	0.0	0(0)	100(12.5)	100(12.5)
Seed farm	0.0	0.0	0.0	100.0	0(0)	100(2.9)	100(2.9)
Vegetable	0.0	13.4	0.0	86.6	0(0)	100(51.9)	100(51.9)
Extension	**0.0**	**27.9**	**0.0**	**72.1**	**0(0)**	**100(83.5)**	**100(83.5)**
Infrastructure	0.0	100.0	0.0	0.0	0(0)	100(6.4)	100(6.4)
New approaches to extension	0.0	7.8	0.0	92.2	0(0)	100(39.6)	100(39.6)
Training/ study tour	0.0	36.8	0.0	63.2	0(0)	100(37.6)	100(37.6)
Agriculture mechanization	**35.6**	**61.7**	**0.7**	**2.0**	**36.4(22.6)**	**63.7(39.6)**	**100(62.1)**
Crop demonstration	0.0	100.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Machines and equipment assistance	0.0	100.0	0.0	0.0	0(0)	100(2.7)	100(2.7)
Others (agri. Mechanization)	0.0	100.0	0.0	0.0	0(0)	100(34.3)	100(34.3)
Seed processing centers and storage	100.0	0.0	0.0	0.0	100(8.6)	0(0)	100(8.6)
Seed production	100.0	0.0	0.0	0.0	100(13.6)	0(0)	100(13.6)
Seed testing lab	0.0	100.0	0.0	0.0	0(0)	100(1.3)	100(1.3)
Training and others	0.0	0.0	27.1	72.9	27.1(0.5)	73(1.3)	100(1.7)
Cooperatives and cooperation	**39.8**	**60.2**	**0.0**	**0.0**	**39.8(24)**	**60.3(36.4)**	**100(60.4)**

Infrastructure	100.0	0.0	0.0	0.0	100(24)	0(0)	100(24)
Inputs distribution	0.0	100.0	0.0	0.0	0(0)	100(16)	100(16)
Other facilities	0.0	100.0	0.0	0.0	0(0)	100(19.3)	100(19.3)
Others (cooperatives & cooperation)	0.0	100.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Dairy development	**0.0**	**27.1**	**44.2**	**28.7**	**44.3(24.1)**	**55.8(30.3)**	**100(54.4)**
Dairy units to farmers	0.0	100.0	0.0	0.0	0(0)	100(13.9)	100(13.9)
Production enhancement	0.0	100.0	0.0	0.0	0(0)	100(0.9)	100(0.9)
Promotion of milk collection centers	0.0	0.0	60.7	39.3	60.7(24.1)	39.4(15.6)	100(39.7)
Organic farming / bio fertilizer	**0.0**	**22.8**	**0.0**	**77.2**	**0(0)**	**100(50.6)**	**100(50.6)**
Others (organic farming & bio-fertilizer)	0.0	18.6	0.0	81.4	0(0)	100(4.9)	100(4.9)
Promotion of bio fertilizer	0.0	100.0	0.0	0.0	0(0)	100(10.7)	100(10.7)
Promotion of organic farming	0.0	0.0	0.0	100.0	0(0)	100(35.1)	100(35.1)
Sericulture	**78.6**	**21.4**	**0.0**	**0.0**	**78.7(28.9)**	**21.4(7.9)**	**100(36.8)**
Cocoon production	100.0	0.0	0.0	0.0	100(22.7)	0(0)	100(22.7)
Others (sericulture)	44.1	55.9	0.0	0.0	44.2(6.3)	55.9(7.9)	100(14.1)
Fisheries	**8.6**	**91.4**	**0.0**	**0.0**	**8.6(2.1)**	**91.5(21.5)**	**100(23.6)**
Farmers fish ponds/ assistance including training	62.8	37.2	0.0	0.0	62.8(0.6)	37.3(0.4)	100(1)
Fish marketing	0.0	100.0	0.0	0.0	0(0)	100(8.1)	100(8.1)
Fish seed	0.0	100.0	0.0	0.0	0(0)	100(0.7)	100(0.7)
Infrastructure/ ponds of fisheries/ dept/ agency	12.5	87.5	0.0	0.0	12.5(1.5)	87.6(10)	100(11.4)
Others (fisheries)	0.0	100.0	0.0	0.0	0(0)	100(2.6)	100(2.6)
Information technology	**0.0**	**9.3**	**0.0**	**90.7**	**0(0)**	**100(23.1)**	**100(23.1)**
Development of it facilities	0.0	100.0	0.0	0.0	0(0)	100(1.4)	100(1.4)
Farmers training and extension	0.0	0.0	0.0	100.0	0(0)	100(20.9)	100(20.9)
Others (IT)	0.0	100.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Integrated pest management	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(22)**	**100(22)**
IPM labs	0.0	100.0	0.0	0.0	0(0)	100(7.5)	100(7.5)
Others (IPM)	0.0	100.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Promotion of IPM	0.0	100.0	0.0	0.0	0(0)	100(14.2)	100(14.2)
Research (agri/horti/animal husbandry/ etc.)	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(7.4)**	**100(7.4)**
Agri. facility	0.0	100.0	0.0	0.0	0(0)	100(5.9)	100(5.9)
Agri. research project	0.0	100.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Others (research-agri, horti& animal husbandry)	0.0	100.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Marketing and post harvest management	**100.0**	**0.0**	**0.0**	**0.0**	**100(2.4)**	**0(0)**	**100(2.4)**
Modernization of animal feed productionmarketing and post harvest management	100.0	0.0	0.0	0.0	100(2.4)	0(0)	100(2.4)
Grand total	**22.3**	**63.4**	**2.3**	**12.0**	**24.6(515)**	**75.5(1580.1)**	**100(2095)**

Source: http://rkvy.nic.in/ as on April, 2013; **Note:** Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 4.5.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri.expenditure
2002-03	3097	1435	4532	21312	21.3	6.0	
2003-04*	2936	951	3887	39966	9.7	5.0	
2004-05	3064	1661	4725	27640	17.1	6.1	
2005-06	2721	1775	4496	30100	14.9	5.7	
2006-07	3364	1983	5347	37482	14.3	6.6	
10th Plan	**15181**	**7805**	**22987**	**156499**	**15.5**	**5.9**	
2007-08	4150	2715	6865	43322	15.8	8.2	
2008-09	4365	4053	8417	49768	16.9	9.6	
2009-10	3989	4680	8669	49036	17.7	10.0	**4.0**
2010-11	4741	1131	5872	49236	11.9	6.4	
2011-12*	5780	1898	7677	59425	12.9	8.1	
11th Plan	**23025**	**14476**	**37501**	**250787**	**15.1**	**8.5**	
% change over 10th plan	**51.7**	**85.5**	**63.1**	**60.2**			

Source: State Finances, RBI

Note: *Revised estimates, rest all accounts

Agriculture and allied activities includes Irrigation and flood control

Budgetary expenditure is accounts only developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVYexpenditure/agriculture expenditure*100

Table 4.5.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sectors

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	735 (15.8)	1472.2 (14)	100.3
2	Soil and Water Conservation	235.1 (5.1)	618.4 (5.9)	163.1
3	Animal Husbandry	209.6 (4.5)	382 (3.7)	82.3
4	Dairy Development	23.3 (0.5)	66.7 (0.7)	186.4
5	Fisheries	28.4 (0.7)	42.7 (0.5)	50.4
6	Forestry and Wild Life	229.9 (5)	468.1 (4.5)	103.7
7	Plantations	7.5 (0.2)	7.1 (0.1)	-4.6
8	Food Storage and Warehousing	83.5 (1.8)	1116.7 (10.7)	1238.5
9	Agricultural Research and Education	74 (1.6)	254.2 (2.5)	243.7
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	84.2 (1.9)	297.1 (2.9)	252.8
12	Other Agricultural Programmes	5.8 (0.2)	7.5 (0.1)	30.3
13	Major and Medium Irrigation	1107.5 (23.7)	2118.5 (20.2)	91.3
14	Minor Irrigation	345.9 (7.4)	917.3 (8.8)	165.2
15	Flood Control and Drainage	33.1 (0.8)	46.5 (0.5)	40.6
16	Others	1473.1 (31.6)	2709.3 (25.8)	83.9
	Total	**4675.2 (100)**	**10523.6 (100)**	**125.1**

Source: State Finances, RBI;

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total

Table 4.5.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 Prices)

(Per cent)

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Primary Sector	29.7	28.6	27.1	26.1	25.3	23.7	23.0	22.6	22.1
Secondary Sector	23.3	24.1	25.4	25.7	24.3	24.5	24.2	23.9	23.2
Tertiary Sector	47.0	47.3	47.6	48.2	50.4	51.8	52.8	53.5	54.6
Aggregate	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: CSO, MOSPI

Table 4.5.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	0.1	3.7	166	243	146.5	45485
2003-04	3.8	5.3	168	254	151.8	46803
2004-05	-1.1	5.4	167	255	153.0	46497
2005-06	2.3	6.5	166	253	152.1	47728
2006-07	2.4	8.1	166	254	153.4	49059
10th Plan Average	**1.5**	**5.8**	**166**	**252**	**151.4**	**47114**
2007-08	3.5	7.3	164	253	154.2	51266
2008-09	3.8	7.0	166	255	153.8	52749
2009-10	-0.4	6.6	166	248	149.3	52455
2010-11	4.7	7.9	166	254	153.0	54912
2011-12	4.6	6.4	166	254	153.0	57423
11th Plan Average	**3.2**	**7.0**	**166**	**253**	**152.7**	**53761**

Source: Directorate of Economics and Statistics, GOI
Note:*land productivity = agricultural GSDP/ha of NSA

Table 4.5.9: Trend in Inputs Use in Uttar Pradesh

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% Net irrigated to net sown area	Irrigation intensity (%)	%Gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	128.5	177.9	77.4	138.5	73.2	126.5
2003-04	132.3	185.2	79.0	140.0	72.9	126.7
2004-05	131.2	189.4	78.6	144.4	74.2	134.1
2005-06	130.8	189.7	78.6	145.1	75.0	140.4
2006-07	133.1	192.2	80.3	144.4	75.6	153.4
10th Plan Average	**131.2**	**186.9**	**78.8**	**142.5**	**74.2**	**136.2**
2007-08	**130.9**	**191.4**	79.7	146.3	75.6	150.7
2008-09	134.4	196.1	81.1	146.0	77.0	161.8
2009-10	134.6	193.5	81.1	143.8	78.2	171.0
2010-11	133.9	193.7	80.7	144.7	76.3	174.3
2011-12	133.9	193.7	80.7	144.7	76.3	169.9
11th Plan Average	**133.5**	**193.7**	**80.7**	**145.1**	**76.7**	**165.5**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area /Gross sown area*100

Table 4.5.10: Average Annual Growth in Area, Production and Yield of MajorCrops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	0.1	0.0	-1.4	0.5	5.5	4.8
Wheat	-0.1	0.0	0.0	1.2	4.0	2.9
Jowar	-5.5	-3.6	1.6	-3.5	-0.5	2.9
Bajra	1.0	5.9	5.5	0.3	5.0	4.8
Maize	-0.9	0.5	-1.1	-1.2	3.7	4.8
Small Millets	-8.7	0.3	7.1	-7.4	-1.9	18.8
Barley	-5.1	-8.0	-2.9	-3.4	-2.4	5.5
Coarse Cereals	-1.6	-1.3	0.2	-1.2	3.4	4.7
Total Cereals	-0.4	-0.5	-0.5	0.5	4.3	3.6
Gram	-4.1	-8.8	-4.6	-2.1	9.7	11.6
Arhar/Tur	0.8	-6.6	-7.3	-4.2	5.4	9.2
Other Pulses	2.7	1.5	-1.3	-20.4	-17.9	-17.4
Total Pulses	0.3	-3.4	-3.7	-1.6	5.4	7.5
Total Foodgrains	-0.3	-0.7	-0.7	0.2	4.3	4.1
Groundnut	0.1	0.3	-1.0	-1.5	6.5	8.7
Sesamum	15.6	3.3	-3.1	8.4	19.5	12.7
Rapeseed & Mustard	-0.4	1.0	1.7	-3.9	-2.3	1.6
Linseed	-10.3	-11.9	-1.5	12.9	11.5	9.4
Sunflower	22.1	16.8	-2.3	-20.6	-20.4	2.1
Soyabean	9.2	128.7	96.4	34.7	49.6	9.2
Total Oilseeds	0.4	0.4	0.7	-1.3	-0.6	0.1
Sugarcane	2.2	2.7	0.7	-0.7	-0.5	0.3

Source*:* Directorate of Economics and Statistics, GOI

Table 4.5.11: Average Annual growth in production of livestock products and fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.2	-7.3	1.7	-60.3
2003-04	10.1	-3.2	102.6	0.4
2004-05	0.6	-14.3	1.3	0.4
2005-06	0.9	0.0	0.4	8.6
2006-07	0.6	16.7	0.9	8.6
10th plan	**2.7**	**-1.6**	**21.4**	**-8.5**
2007-08	0.7	28.6	1.2	2.0
2008-09	0.7	11.1	2.7	2.3
2009-10	12.0	0.0	29.3	10.4
2010-11	0.4	40.0	3.1	9.5
2011-12 *	-	-	-	0.3
11th plan	**3.4**	**19.9**	**9.0**	**4.9**

Source: BAHS, www.Indiastat.com
Note: *For Milk, Meat and Egg 2011-12 data are not available

4.6 UTTARAKHAND

4.6.1. Background Information

Uttarakhand was previously known as Uttaranchal and it was carved out from Uttar Pradesh on 9th November 2000. It is the eighteenth largest State of India with an area of 53566 sq. km. It is placed in the northern part of India. According to the Census of India 2011, approximately 10 million people reside in the State that forms less than 1 per cent of India's total population. Having the mountain terrains, the population density of the State is sparse. According to 2011 Census State had 189 persons per sq. km as compared to 382 persons per sq km at the all India level. Uttarakhand is mostly covered with mountains (93 per cent of the total State). Uttarakhand is surrounded by an international border with Nepal to the east and the neighbouring State of Uttar Pradesh to the south, Himachal Pradesh and Haryana to the west and its northern parts are bordered by the Himalayan Mountain Ranges.

The State is rich in natural resources especially water and forests with many glaciers, rivers and dense forests. Char-dhams, the four most sacred and revered Hindu temples of Badrinath, Kedarnath, Gangotri and Yamunotri are nestled in the mighty mountains. It's truly God's Land also know in Devanagari as DevBhoomi. The State is blessed with 175 rare species of aromatic and medicinal plants. It has almost all major climatic zones, making it amenable to a variety of commercial horticulture, floriculture and agriculture crops. It has a vast tourism potential in adventure, leisure, and ecotourism.

The share of primary sector in the GSDP of the State was less than that of all India. The share declined from 17.4 per cent in the terminal year of the 10th Plan to around 11 per cent in 2011-12 (end of 11th Plan). The share of secondary sector in Uttarakhand was fairly higher as compared to the neighbouring State of Uttar Pradesh as well as the average of all India. The share of secondary sector in the State GSDP increased from 33 per cent by the end of 10th Plan to 37 per cent by the end of 11th Plan (Table 4.6.7), vis-a-vis services sector increased from 49 per cent to 52 per cent during the same time period. Table 8 depicts the growth rate of agriculture and allied sector in Uttarakhand.Agricultural growth rate in the State was fluctuating but averaged at 3.3 per cent per annum during the 10th Plan that declined marginally to 3.2 per cent per annum in the 11th Plan. Although Uttarakhand agriculture growth rate was quite moderate but it was less than the targeted growth rate of 4 per cent per annum. Due to slow growth of agriculture and allied sectors in the country, the RKVY programme was implemented to reinvent growth in agriculture in 2005-06. RKVY aimed at achieving 4 per cent annual growth in the agriculture sector during the 11th plan (2007-12).

4.6.2. Distribution of Allocation and Expenditure across Sectors

This section mainly focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector. It is expected that the allocation and expenditure would move in the same direction. Nonetheless, that may not be true, but for present evaluation we shall focus our concentration on the expenditure actually incurred. We also look at the allocation data and the ratio of expenditure to allocation to point out whether there was any diversion taking place in the priorities set initially.

Data in Table 4.6.1 and Figure 4.6 present the numbers of projects undertaken under RKVY, their amount of allocation and expenditure, expenditure-allocation ratio and expenditure incurred per project. With respect to expenditure across sectors, seven major sectors (animal husbandry, marketing and post harvest management, horticulture, organic farming/bio fertilizer, micro/minor irrigation, dairy development and extension) contributed 81.42 per cent of the total expenditure and remaining 10 minor sectors utilized only 18.58 per cent of the total expenditure in the State. The highest expenditure was incurred on animal husbandry sector with Rs 26.23 crores while lowest was on research (agri/horti/animal husbandry/ etc.) sector with Rs 0.49 crores.

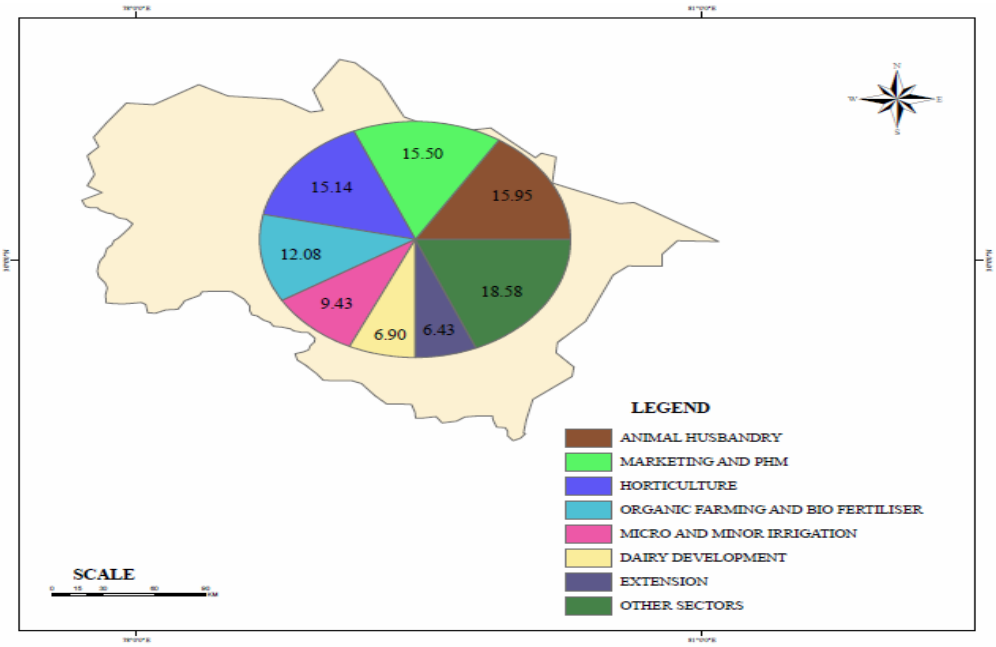


Figure 4.6: Share of Expenditure across Sectors

Note: Minor sectors are natural resource management, fisheries, crop development, innovative programmes/ training/ capacity building/ others, seed, agriculture mechanization, sericulture, fertilisers and INM, integrated pest management and research (agri/horti/animal husbandry/ etc.).

On the other hand, if one looks at the allocation, horticulture was planned for the highest allocation of Rs. 57.55 crore while it spent only Rs. 25 crore. Out of total allocation planned of Rs. 295 crore only 164 crore was actually spent. It is seen from the table that there was no sector where expenditure exceeded the allocation. The whole allocated amount was spent in agriculture mechanization, sericulture, and integrated pest management. At the aggregate, only 56 percent of the planned expenditure in terms of allocation was spent in the State. Thereby, the expenditure allocation ratio was less than one in most of the sectors. In dairy development, extension, seed and fisheries, more than 80 per cent of the allocated amount was spent. It was between 50 and 80 per cent in animal husbandry, marketing, organic farming and micro irrigation while spending was less than 50 per cent of the allocated amount in research, fertilizer and INM, innovative programmes, crop development, natural resource management and horticulture.

Looking at the expenditure per project, the highest amount was spent on minor irrigation projects, followed by dairy development, marketing and post harvest management, seed and natural resource management. Interestingly, a few lower priority sectors like fisheries, seed, organic farming / bio fertiliser, etc., had higher share in the amount spent per project compared to high priority sectors like horticulture, extension and animal husbandry.

4.6.3. Sector-Wise Size of the Projects based on theExpenditure

Table 4.6.2 presents the numbers and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY per project has been divided into Rs. 0-1 crore, Rs. 1-10 crore and Rs. 10-25 crore. Out of the total expenditure, 43 per cent of the projects incurred only 8 per cent of the expenditure at the bottom spending less than Rs. 1 crore amounts on each project. On the other extreme, less than 2 per cent of the projects incurred around 9 per cent amount having each project between Rs. 10 to 25 crore. In the category of Rs. 10-25 crore, the only project was on minor irrigation spending almost whole amount of that within this category alone. Between Rs. 1-10 crore projects highest percentage of amount spent was under dairy development, fertilizer and INM, fisheries, seed and sericulture whereby whole amount of that sector was spent on projects having value of per project between Rs. 1 to 10 crore. All projects in the integrated pest management and research sectors lied in the small projects having value of each project less than Rs. 1 crore. The other sectors that had less than Rs. 1 crore value projects were under crop development, innovative programmes and agriculture mechanization.

4.6.4. Sector-Wise Expenditure according to Status

The status-wise expenditure is presented in Table 4.6.3. Out of the amount spent, full amount was spent on the completed projects in the case of fisheries, agricultural mechanization, sericulture, fertilizer and INM and integrated pest management. These projects were completed within the 11thPlan period. However, most of the big projects did not complete during the Plan

period and thereby money was pilfered to be spent during the next Plan period. The highest amount spent on the ongoing projects included animal husbandry, horticulture sector, organic farming and natural resource management. Out of total 105 projects planned in the State under RKVY, only 76 projects were taken up during the 11th Plan.

4.6.5. Sector and sub sector wise distribution of projects by nature

Table 4.6.4 presents sector and sub-sector-wise expenditure on Infrastructure and non-infrastructure projects of normal, National and State Flagship programmes in Uttarakhand. Out of the total expenditure of Rs. 164.5 crore under RKVY scheme in Uttarakhand. 17.3 per cent was spent on development of infrastructure in agriculture and allied activities and remaining 82.8 per cent was spent on non-infrastructural activities. Infrastructure expenditure of normal and State flagship projects was 11.8 per cent and 5.4 per cent of the total expenditure. Conversely, non-infrastructure expenditure of normal, State flagship and National flagship accounted for 75.1 per cent, 5.9 per cent and 1.8 per cent of the total expenditure, respectively. The total expenditure incurred on infrastructure assets projects and non-infrastructure projects was Rs. 28.4 crore and Rs. 136.1 crore, respectively. The animal husbandry sector accounted for highest share of Rs. 26.3 crore followed by marketing and post harvest management accounting for Rs. 25.5 crore of the total expenditure under RKVY projects in Uttarakhand.

Within the sub-sectors, Promotion of organic farming has contributed Rs. 19.9 crores to the total expenditure, followed by others (micro & minor irrigation) (Rs. 15.5 crore) and godowns and warehouses (Rs. 14 crore). The National Flagship projects were taken up only for promotion of organic farming. Similarly, State Flagship programme was mainly concentrated on milk grid under the infrastructure tag and vegetable production under non infrastructure tag. The total infrastructure expenditure topped in animal husbandry (milk grid and breed improvement); dairy development (dairy cooperative society) and horticulture. Among non-infrastructure activities highest expenditure was made in marketing and post harvest management followed by horticulture, organic farming and bio fertilizer, micro/minor irrigation and extension activities.

4.6.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 4.6 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Uttarakhand as provided in the website. Among the major components included in the animal husbandry sector were animal breeding farms, genetic improvement of goats and sheep, wool analysis laboratory, feeder storage godown, establishment of feeder and fodder bank, strengthening of milk grid, fish feed mill and strengthening of poultry farm. However, the expected and actual output data was missing on the website. Under the heading of marketing and post harvest management, construction of agriculture input stores and collection centres, construction of farmer markets were attempted.

Under the horticultural sector, infrastructural development for horticulture, cultivation of medicinal and aromatic plants and assistance to vegetable and spice growing farmers were the main components. Under other programmes like organic farming, minor irrigation, dairy development and extension sectors, the main components covered were organic certification and marketing, construction of rain water harvesting tanks, strengthening of dairy infrastructure and construction of farmer consumer markets. As mentioned earlier, the output and outcome data was not available on the website.

4.6.7. An Assessment of RKVY Performance in the State and Concluding Remarks

In Uttarakhand, RKVY projects comprised of 17 sectors which includes 47 sub-sectors. Out of 17 sectors, 7 sectors absorbed 81.42 per cent of the expenditure. Among the major sectors, animal husbandry utilized the major funds. It was followed by marketing and post harvest management, horticulture, organic farming / bio fertiliser, micro/minor irrigation, dairy development and extension sectors. To develop infrastructure and assets in the agriculture and allied activities in the State, RKVY invested 17 per cent of the total amount for that purpose. Besides, 11 per cent of the allocated budget was spent on the State flagship projects especially in the horticulture, animal husbandry and extension sectors. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. The pattern of expenditure incurred also shows the priority areas chosen by the State Government to achieve higher productivity in agriculture and to raise the growth rate of agriculture to help achieve higher growth path for the State economy.

If one looks at the expenditure pattern by sub sectors (Table 4.6.4), it clearly reveals that the State emphasized on animal husbandry, marketing and post harvest management, horticulture, organic farming/bio fertilizer, micro/minor irrigation, dairy development, extension and minor sectors. The main activities in which major expenditure was incurred included promotion of organic farming, micro and minor irrigation, godown and warehouse, market infrastructure, vegetables and milk grid and development of horticulture farms. Looking at the agriculture performance in the State, it is observed that the priority areas chosen by the State Government more or less are justified. The key area of Uttarakhand agriculture like Himachal Pradesh State given the hilly terrain is the horticulture sector and some cereal crops along with animal husbandry. The high priority given to animal husbandry, marketing and post harvest management and horticulture especially to fruits, vegetables and floriculture would strengthen the horticulture sector in the State. The priority of the State Government towards promotion of organic farming is a step in the right direction. The priority towards market infrastructure has also an indication of reducing wastage that is widespread among perishable crops. The State also needs to upgrade processing sector that would increase value addition and increase farmer’s income and bring more agro based employment.

We try to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out good or bad performance to RKVY factor alone. Table 4.6.5 shows that revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 44 per cent in the 11th Plan over 10th Plan. Percentage of agriculture share in the State budget also increased from 15 percent in the 10th Plan to 19 per cent during the 11th Plan that is higher than any other north Indian States including that of Punjab and Haryana. Out of total expenditure in agriculture in the State, RKVY shared less than half a per cent of the total expenditure. Agriculture expenditure as a percentage of State GSDP however, declined marginally from 19.6 per cent in the 10th Plan to 19.3 per cent in the 11th Plan. Looking at sub sector budgetary expenditure (Table 4.6.6), the highest percentage change over the previous plan happened in food storage and warehousing, animal and crop husbandry, fisheries, major and medium irrigation, and agricultural research and education, some of these also received prime priority under RKVY.

We have already stated that agricultural GSDP grew at a rate of 3.3 per cent in the 10th Plan that was almost maintained at the same level in the 11th Plan in the State that was slightly less than the target set under the RKVY. There was no increase in the gross cropped area as well cropping intensity during the above mentioned period (Table 4.6.8). However, land productivity per hectare in value terms increased from Rs 70 thousand in the 10th Plan to approximately Rs. 81 thousand in the 11th Plan, a part of that may be due to inflation factor. Although micro irrigation projects were taken up, the net and gross irrigated area remained almost at the level where it was in the previous plan period. There was some increase in irrigation intensity from 158.8 during the 10th Plan to 166.5 per cent at the end of 11th Plan (Table 4.6.9). The growth rate in production (that is combination of area and yield) almost decreased in most of the crops (Table 4.6.10). Average annual growth of livestock and fishery production in the State increased tremendously, especially increase in production of meat jumped by 20 per cent per annum during the 11th Plancompared to negative growth during the 10th Plan period. Milk and fish production growth rate also increased during the above mentioned period while egg production growth rate declined (Table 4.6.11).

On the overall, although growth at the aggregate level in agricultural GSDP was maintained at high level, however other indicators were not that encouraging indicating that it would be difficult to maintain high growth in agriculture in the State unless there are major steps taken up, especially for increasing the irrigated area in the State.

TABLES

Table 4.6.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th Five Year Plan

Sectors	No. of project	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio	Expenditure per Project (Rs. crore)
Animal Husbandry	17 (23)	45.1 (15.3)	26.2 (16)	0.6	1.5
Marketing & PHM	8 (12)	47.7 (16.2)	25.5 (15.5)	0.5	3.2
Horticulture	10 (17)	57.6 (19.5)	24.9 (15.2)	0.4	2.5
Organic Farming / Bio Fertilizer	7 (7)	32.5 (11)	19.9 (12.1)	0.6	2.8
Micro/Minor Irrigation	2 (3)	20.4 (7)	15.5 (9.5)	0.8	7.8
Dairy Development	3 (3)	12.6 (4.3)	11.3 (7)	0.9	3.8
Extension	5 (6)	11.9 (4.1)	10.6 (6.5)	0.9	2.1
NRM	3 (4)	19.9 (6.8)	8.5 (5.2)	0.4	2.8
Fisheries	1 (2)	5.5 (1.9)	4.5 (2.8)	0.8	4.5
Crop Development	8 (9)	13.7 (4.7)	3.7 (2.3)	0.3	0.5
Innovative Programmes	3 (8)	12.02 (4.1)	3.3 (2)	0.3	1.1
Seed	1 (1)	3.7 (1.3)	3.1 (1.9)	0.8	3.1
Agriculture Mechanization	2 (2)	2.8 (1)	2.8 (1.8)	1.0	1.4
Sericulture	1 (1)	1.9 (0.7)	1.9 (1.2)	1.0	1.9
Fertilizers & INM	1 (2)	5.3 (1.8)	1.3 (0.8)	0.2	1.3
Integrated Pest Management	2 (2)	1.03 (0.4)	1.03 (0.7)	1.0	0.5
Research	2 (3)	1.6 (0.6)	0.5 (0.3)	0.3	0.2
Grand Total	**76 (105)**	**295.3 (100)**	**164.4 (100)**	**0.6**	**2.2**

Source: www.rkvy.nic.in as on April, 2013;

Note: Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3).

Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis).

INM: Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 4.6.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Animal husbandry	58.8	14.5	41.2	85.6	0	0	17(100)	26.3(100)
Marketing and post harvest management	12.5	2.8	87.5	97.2	0	0	8(100)	25.5(100)
Horticulture	20	4.8	80	95.2	0	0	10(100)	24.9(100)
Organic farming / bio fertilizer	14.3	1.0	85.7	99.03	0	0	7(100)	19.9(100)
Micro/minor irrigation	50	0.6	0	0	50	99.4	2(100)	15.6(100)
Dairy development	0	0	100	100	0	0	3(100)	11.4(100)
Extension	60	18.9	40	81.03	0	0	5(100)	10.6(100)
Natural resource management	33.3	2.5	66.7	97.5	0	0	3(100)	8.5(100)
Fisheries	0	0	100	100	0	0	1(100)	4.6(100)
Crop development	87.5	46	12.5	54.01	0	0	8(100)	3.7(100)
Innovative programmes/ training/ capacity building/ others	66.7	34.2	33.3	65.8	0	0	3(100)	3.3(100)
Seed	0	0	100	100	0	0	1(100)	3.2(100)
Agriculture mechanization	50	20.3	50	79.7	0	0	2(100)	2.9(100)
Sericulture	0	0	100	100	0	0	1(100)	1.9(100)
Fertilizers and INM	0	0	100	100	0	0	1(100)	1.3(100)
Integrated pest management	100	100	0	0	0	0	2(100)	1.1(100)
Research (agri/horti/animal husbandry/ etc.)	100	100	0	0	0	0	2(100)	0.5(100)
Grand Total	**43.4**	**7.9**	**55.3**	**82.7**	**1.32**	**9.8**	**76(100)**	**164.5(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: *indicates the number in absolute figures, Expd - Expenditure;
figures in the parentheis indicates percentage to their respective total

Table 4.6.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed	
	No.	Expenditure	No.	Expenditure
Animal Husbandry	14	15.5	9	10.8
Marketing & PHM	6	3.9	6	21.6
Horticulture	14	18.0	3	6.9
Organic Farming / Bio Fertilizer	2	9.6	5	10.3
Micro/Minor Irrigation	2	0.1	1	15.4
Dairy Development	1	3.0	2	8.3
Extension	2	3.6	4	7.0
NRM	4	8.5	0.0	0.0
Fisheries	1	0.0	1	4.5
Crop Development	3	0.4	6	3.2
Innovative Programmes	7	2.7	1	0.6
Seed	1	3.1	0.0	0.0
Agriculture Mechanization	0.0	0.0	2	2.8
Sericulture	0.0	0.0	1	1.9
Fertilizers & INM	1	0.0	1	1.3
Integrated Pest Management	0.0	0.0	2	1.0
Research	2	0.1	1	0.4
Grand Total	**60**	**68.4**	**45**	**96.0**

Source: http://rkvy.nic.in/ as on April, 2013

Note: No.: Number of projects

Table 4.6.4: Sector and Sub Sector Wise Classification by Nature of Project under RKVY during the 11th FYP

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		National flagship project	Total		Grand Total
	Infra-structure	Non infra-structure	Infra-structure	Non infra-structure	Non infra-structure	Infra-structure	Non infra-structure	
Animal husbandry	**48.6**	**17.5**	**33.9**	**0.0**	**0.0**	**82.6(21.7)**	**17.5(4.6)**	**100(26.3)**
Animal health	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Breed improvement	97.0	3.0	0.0	0.0	0.0	97(7.5)	3.1(0.3)	100(7.7)
Extension and training	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Feed and fodder	40.2	59.8	0.0	0.0	0.0	40.3(1.9)	59.8(2.8)	100(4.6)
Infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Milk grid	0.0	0.0	100.0	0.0	0.0	100(9)	0(0)	100(9)
Others (animal husbandry)	100.0	0.0	0.0	0.0	0.0	100(2.7)	0(0)	100(2.7)
Poultry	100.0	0.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Marketing and post harvest management	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(25.5)**	**100(25.5)**
Godowns and warehouses	0.0	100.0	0.0	0.0	0.0	0(0)	100(14)	100(14)
Setting up/ strengthening of market infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(11.6)	100(11.6)
Horticulture	**9.9**	**54.0**	**0.0**	**36.1**	**0.0**	**9.9(2.5)**	**90.2(22.5)**	**100(24.9)**
Development of horticulture farms/ facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(8.5)	100(8.5)
Medicinal & aromatic plants	0.0	100.0	0.0	0.0	0.0	0(0)	100(5)	100(5)
Others (horticulture)	100.0	0.0	0.0	0.0	0.0	100(2.5)	0(0)	100(2.5)
Vegetable	0.0	0.0	0.0	100.0	0.0	0(0)	100(9)	100(9)
Organic farming / bio fertilizer	**0.0**	**85.0**	**0.0**	**0.0**	**15.0**	**0(0)**	**100(19.9)**	**100(19.9)**
Promotion of organic farming	0.0	85.0	0.0	0.0	15.0	0(0)	100(19.9)	100(19.9)
Micro/minor irrigation	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(15.6)**	**100(15.6)**
Check dams/ water courses bunds	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Others (micro & minor irrigation)	0.0	100.0	0.0	0.0	0.0	0(0)	100(15.5)	100(15.5)
Dairy development	**37.5**	**62.5**	**0.0**	**0.0**	**0.0**	**37.6(4.3)**	**62.5(7.1)**	**100(11.4)**
Dairy cooperative society	100.0	0.0	0.0	0.0	0.0	100(4.3)	0(0)	100(4.3)
Dairy units to farmers	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.1)	100(4.1)
Milk processing	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.1)	100(3.1)
Extension	**0.0**	**94.0**	**0.0**	**6.0**	**0.0**	**0(0)**	**100(10.6)**	**100(10.6)**

Infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.3)	100(4.3)
New approaches to extension	0.0	0.0	0.0	100.0	0.0	0(0)	100(0.7)	100(0.7)
Others (extension)	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.7)	100(0.7)
Training/ study tour	0.0	100.0	0.0	0.0	0.0	0(0)	100(5)	100(5)
Natural resource management	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(8.5)**	**100(8.5)**
Land reclamation	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Water conservation structures and watershed dev	0.0	100.0	0.0	0.0	0.0	0(0)	100(8.3)	100(8.3)
Fisheries	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(4.6)**	**100(4.6)**
Fish seed production	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.6)	100(4.6)
Crop development	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(3.7)**	**100(3.7)**
Oilseeds and pulses	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Others (crop development)	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.7)	100(0.7)
Paddy	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Sugarcane	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Wheat	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(3.3)**	**100(3.3)**
Innovative programmes	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.3)	100(3.3)
Seed	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(3.2)**	**100(3.2)**
Seed production	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.2)	100(3.2)
Agriculture mechanization	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(2.9)**	**100(2.9)**
Machines and equipment assistance	0.0	100.0	0.0	0.0	0.0	0(0)	100(2.9)	100(2.9)
Sericulture	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(1.9)**	**100(1.9)**
Others (sericulture)	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.9)	100(1.9)
Fertilizers and INM	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(1.3)**	**100(1.3)**
Soil testing lab	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.3)	100(1.3)
Integrated pest management	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(1.1)**	**100(1.1)**
Promotion of IPM	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Research (agri/horti/animal husbandry /etc.)	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(0.5)**	**100(0.5)**
Agri. research project	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Grand total	**11.8**	**75.1**	**5.4**	**5.9**	**1.8**	**17.3(28.4)**	**82.8(136.1)**	**100(164.5)**

Source: http://rkvy.nic.in/ as on April, 2013; **Note**: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 4.6.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri.expenditure
2002-03	548	26	574	2904	19.8	11.6	
2003-04*	617	77	694	3316	20.9	13.3	
2004-05	683	145	828	4754	17.4	15.0	
2005-06	639	286	926	4715	19.6	17.3	
2006-07	670	306	975	4684	20.8	17.4	
10th Plan	**3157**	**841**	**3997**	**20373**	**19.7**	**14.9**	
2007-08	690	360	1050	5243	20.0	18.4	
2008-09	756	428	1184	5244	22.6	21.5	
2009-10	733	243	976	6199	15.7	16.2	
2010-11	784	243	1027	5823	17.6	16.3	**0.4**
2011-12*	1080	344	1424	6880	20.7	21.9	
11th Plan	**4042**	**1618**	**5661**	**29389**	**19.3**	**18.9**	
% change over 10th plan	**28.1**	**92.5**	**41.6**	**44.3**			

Source: State Finances, RBI

Note: * Revised estimates, rest all accounts

Agriculture and allied activities includes Irrigation and flood control

Budgetary expenditure is accounts only developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure / agriculture expenditure*100

Table 4.6.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	159.5 (19.4)	336.5 (21)	111.1
2	Soil and Water Conservation	4.9 (0.6)	2.6 (0.2)	-46.8
3	Animal Husbandry	36.1 (4.4)	78.1 (4.9)	116.5
4	Dairy Development	13.2 (1.6)	13 (0.9)	-1.2
5	Fisheries	3.3 (0.4)	6.6 (0.5)	104.2
6	Forestry and Wild Life	217.6 (26.4)	306 (19.1)	40.7
7	Plantations	7.7 (1)	0.5 (0.1)	0.0
8	Food Storage and Warehousing	3.8 (0.5)	98.1 (6.2)	2523.8
9	Agricultural Research and Education	52.4 (6.4)	88.5 (5.6)	68.9
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	18.8 (2.3)	30.3 (1.9)	61.1
12	Other Agricultural Programmes	-0.1 (-0.1)	0 (0)	-100.0
13	Major and Medium Irrigation	107.2 (13)	183.9 (11.5)	71.6
14	Minor Irrigation	44.7 (5.5)	56.2 (3.6)	25.9
15	Flood Control and Drainage	2.8 (0.4)	3.5 (0.3)	26.6
16	Others	153.2 (18.6)	400.3 (25)	161.4
	Total	**824.4 (100)**	**1603.7 (100)**	**94.5**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others. Figures in the parenthesis are percentage to the respective total

Table 4.6.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 Prices)

(Per cent)

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Primary Sector	22.3	18.9	17.4	15.0	12.8	11.9	11.3	11.1	10.7
Secondary Sector	28.2	31.4	33.3	34.7	34.6	35.1	36.3	36.7	37.2
Tertiary Sector	49.5	49.7	49.3	50.3	52.6	53.0	52.4	52.1	52.1
Aggregate	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: CSO, MOSPI

Table 4.6.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	4.3	9.9	8	12	159.7	65455
2003-04	4.9	7.6	8	12	160.6	68463
2004-05	6.0	13.0	8	12	161.0	71974
2005-06	-3.2	14.3	8	12	157.8	69565
2006-07	4.7	13.6	8	12	158.2	73090
10th Plan Average	**3.3**	**11.7**	**8**	**12**	**159.5**	**69709**
2007-08	2.1	18.1	8	12	157.2	75606
2008-09	-3.7	12.7	8	12	158.2	72934
2009-10	9.6	18.1	7	12	157.4	81363
2010-11	4.4	10.0	7	12	160.5	86323
2011-12	3.4	5.2	7	12	160.5	89227
11th Plan Average	**3.2**	**12.8**	**7**	**12**	**158.8**	**81091**

Source: Directorate of Economics and Statistics, GOI
Note: *land productivity = agricultural GSDP/ha of NSA

Table 4.6.9: Trend in Inputs Use in Uttarakhand

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% Net irrigated to net sown area	Irrigation intensity (%)	%Gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	3.4	5.3	44.9	156.0	43.9	-
2003-04	3.5	5.5	45.5	158.1	44.8	104.8
2004-05	3.5	5.5	45.0	159.1	44.5	88.9
2005-06	3.4	5.5	44.7	160.1	45.3	94.2
2006-07	3.5	5.5	45.1	160.6	45.8	118.1
10th Plan Average	**3.4**	**5.5**	**45.0**	**158.8**	**44.8**	**101.5**
2007-08	3.4	5.5	45.2	162.5	46.7	119.3
2008-09	3.4	5.7	45.1	167.6	47.8	121.2
2009-10	3.4	5.7	45.6	167.8	48.6	123.2
2010-11	3.4	5.6	46.1	167.3	48.0	134.5
2011-12	3.4	5.6	46.1	167.3	48.0	142.7
11th Plan Average	**3.4**	**5.6**	**45.6**	**166.5**	**47.8**	**128.2**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area /Gross sown area*100

Table 4.6.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Wheat	0.6	2.7	2.3	-1.1	1.9	3.1
Ragi	0.2	1.6	3.5	-1.6	-1.0	0.6
Small Millets	-0.5	2.6	2.4	1.3	1.9	0.2
Barley	3.8	10.9	8.1	-1.9	1.0	3.4
Coarse Cereals	-0.6	4.6	5.6	-0.9	-0.4	0.5
Total Cereals	-0.3	13.1	13.6	-0.8	1.2	2.0
Total Pulses	15.5	27.2	12.0	1.2	10.1	8.3
Rapeseed & Mustard	5.6	5.4	0.8	-1.0	8.0	9.1
Total Oilseeds	4.5	47.2	38.2	1.9	11.2	8.4
Sugarcane	0.0	-3.9	-3.0	-1.8	2.3	3.9

Source*:* Directorate of Economics and Statistics, GOI

Table 4.6.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.2	-7.3	1.7	-60.3
2003-04	10.1	-3.2	102.6	0.4
2004-05	0.6	-14.3	1.3	0.4
2005-06	0.9	0.0	0.4	8.6
2006-07	0.6	16.7	0.9	8.6
10th plan	**2.7**	**-1.6**	**21.4**	**-8.5**
2007-08	0.7	28.6	1.2	2.0
2008-09	0.7	11.1	2.7	2.3
2009-10	12.0	0.0	29.3	10.4
2010-11	0.4	40.0	3.1	9.5
2011-12*	-	-	-	0.3
11th plan	**3.4**	**19.9**	**9.0**	**4.9**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

5.1 ANDHRA PRADESH

5.1.1. Background Information

The RKVY programme was implemented in India to combat the overall decline in Indian agriculture throughout the 1990's, where overall crop output had fallen to 2.2 per cent growth (Subramanyan and Sekhar, 2003). Similarly, this holds true in the case of Andhra Pradesh and RKVY projects in the State are designed to increase the agriculture growth rate to a target of 4 per cent. In order to understand whether RKVY initiatives in Andhra Pradesh have been successful, it is important to analyze the reasons for such a precipitous decrease in the growth in the agriculture.

Studying the literature discussing the reduction of agricultural growth in Andhra Pradesh, three distinct problems appear. Firstly, is the State's reliance on rain fed agriculture coupled with poor infrastructure management of the rainwater tanks that provide irrigation to farmland in Andhra Pradesh. Secondly, there has been a decrease in arable farmland in the State compared to its height in the 1970's. Excess land is currently planned to be redistributed (Meenakshi and Poleman, 1994) as per the Andhra Pradesh Vision 2020 report, thereby cutting off the possibility of increasing the hectares available to cultivation as a possible path to growth in agriculture. Thirdly, there have been very poor crop yields in Andhra Pradesh in comparison to other agriculture regions such as Tamil Nadu or Punjab, specifically in rice, groundnut and sugarcane. These poor crop yields are speculated to be due in part to the general lack of investment in agriculture over the years coupled with over reliance on rainfall for irrigation. These problems have exacerbated poverty in rural areas as poor crop yields clearly depress possible earnings. Indeed, it is speculated that most increases in rural incomes in Andhra Pradesh are exclusively to benefits from information technology that any benefit from higher prices for agriculture commodities (Meenakshi and Poleman, 1994).

Discussion as to how to solve these problems mostly centers on increasing investment in agricultural research in order to help blunt the effects of sparse rainfall and poor crop yields. For instance, there is a strong belief that new types of seeds can help to increase yields while not requiring as much rainwater as traditional crop strains would. Of course, these sorts of hybrid seed projects have been attempted before in Andhra Pradesh with disappointing results. In the mid 2000's it was noted that new hybrid rice seeds contributed to 25 per cent greater production costs for farmers for an increase in yield of only 4 per cent. Most farmers quickly returned to traditional rice strains after only one or two growing seasons and are increasingly mistrustful of hybrid seeds (Janiah, 2003).

5.1.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors, which is presented in Table 5.1.1. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector during the 11th FYP. The sectors in the tables are arranged in descending order considering expenditure. In the present study we have focused our discussion on the expenditure actually incurred considering its importance over the allocation. With respect to expenditure across sectors, 5 major sectors (seed, horticulture, animal husbandry, agricultural mechanization and research) contributed 81.2 per cent of the total expenditure and remaining 13 minor sectors utilized only 19.8 per cent of the total expenditure in the State (Table 5.1.1 & Figure5.1).

The ratio of expenditure to allocation point out whether there was any diversion taking place in the priorities set initially as well to see the absorption capacity of funds in relation to allocation. By looking at the ratio of expenditure to allocation of funds provided by the RKVY project, it is possible to discern which sectors held the highest priority of the State. In order to facilitate the cardinal ranking of sectors based on the State's preference, four distinct ratio ranges were constructed. For Andhra Pradesh, these ranges are (0 - 0.4), (0.4 - 0.6), (0.6 - 0.8) and (0.8 or greater). Sectors within the higher brackets (0.6 - 0.8) and (0.8 or greater) generally had close to the correct allocation of funds to expenditure while those in the lower brackets (0.3 - 0.4) and (0.4 - 0.6) had little expenditure based on their allocation, suggesting that perhaps the allocation requested for those sectors was incorrect. It is expected that sector projects which had most of their projects funded with very little excess RKVY expenditure available are sectors in which the State had a strong interest in having RKVY projects succeed.

Based on the above ratios, it was found that 12 of the above sectors fell within the highest 2 brackets of expenditure ratios. This indicates that those 12 sectors had close to the correct amount of allocation for the projects in those 12 sectors. Furthermore, of the 5 major sectors of RKVY spending in Andhra Pradesh (seed, horticulture, agricultural mechanization, animal husbandry and research), 4 of those sectors fall within the highest bracket of expenditure allocation ratio (seed, horticulture, animal husbandry and research). As such the project of those 4 major sectors have been fully funded as per the RKVY projects initial specifications. Further it is evident from the table that overall expenditure-allocation ratio was 0.70 in Andhra Pradesh meaning that out of total allocated amount under RKVY, Only 70 per cent was actually spent.

Conversely, six sectors were found to fall within the lower two brackets of expenditure to allocation ratio. Of those six sectors, agricultural mechanization and natural resource management is the largest and has the largest amount of excess expenditure; perhaps indicating that the stated needs for funding for those projects was not planned adequately. Considering that

the 5 major sectors account for 81.2 per cent of the total expenditure, it is possible to discern that agricultural mechanization and natural resource management was a relative low priority for the State.

Further expenditure per project was highest in seed sector with Rs.48.3 crores and lowest in the integrated pest management sector with Rs. 0.2 crores, as shown in Table 5.1.1. Interestingly, expenditure per project of a few minor sectors (crop development, fertilizers and INM, marketing and post harvest management, etc.) were found to be higher when compared with few major sectors (animal husbandry and research).

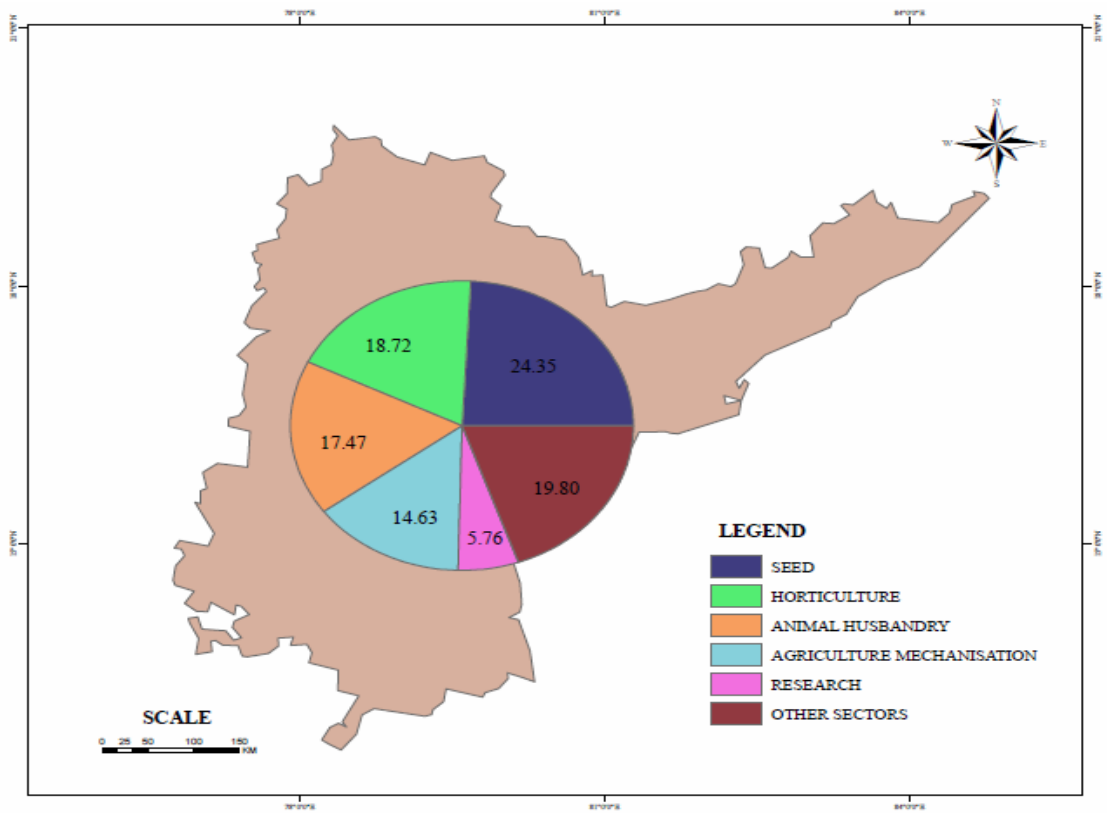


Figure 5.1: Share of Expenditure across Sectors

Note: Other sector includes crop development, marketing and post harvest management, dairy development, fisheries, organic farming / bio fertilizer, extension, fertilisers and INM, innovative programmes/ training/ capacity building/ others, natural resource management, sericulture, micro/minor irrigation, integrated pest management and information technology

Due to increase State spending, there is a possibility of many positive externalities. In Andhra Pradesh there have been large amounts of spending in the animal husbandry sector which have likely produced quantifiable positive externalities thanks to increased livestock production. Increases in livestock, increase natural fertilizers from animal by-products (such as manure) and

has lessened the need for purchasing chemical fertilizer. This in turn increases soil quality as farmers in Andhra Pradesh are reducing their consumption of chemical fertilizers which have an adverse effect on soil quality. These animal husbandry externalities also have consumer beneficial externalities thanks to increased programmes to ensure the health of livestock and possible diseases that can become pathogenic to the population (i.e., Foot and Mouth Disease, for which there is a prevention programme in Andhra Pradesh through the RKVY project).

There are also long run externalities created by RKVY projects in Andhra Pradesh, mostly due to the highly funded research sector. A program such as the 'Soil Health Management' research project may not have many short run benefits. But the long term returns of such a programme can ensure successful agriculture production in Andhra Pradesh for the years to come. This in turn has a future proofing effect on the livelihoods of farmers in the State. There are other research projects that may not have strong links to agricultural production in the short run, but do have an effect on farm incomes in the future. An example of a project which could have such an effect is the 'Value Added products through development of Enterprise' which encourages higher value products to be marketed and sold by rural farmers rather than just the raw product that was sold previously to the RKVY project. It is not inconceivable that such village enterprise initiatives can have lasting effects on the eventual growth of those villages into more prosperous areas thanks to increased access to markets and higher quality specialty goods.

5.1.3. Sector-Wise Size of the Projects based on the Expenditure

The numbers and magnitude of projects undertaken and expenditure incurred under RKVY during the 11th FYP is presented in Table 5.1.2. The total amount spent under RKVY per project have been divided into Rs. 0-1 crore, Rs. 1-10 crore, Rs. 10-25 crore and above Rs. 25 crore. Out of the total expenditure, 49.3 per cent of the projects incurred only 19.5 per cent of the expenditure at the bottom spending Rs. 1 crore to 10 crore amounts on each project. Most of the sectors had projects in this category. On the other extreme, around 10.7 per cent of the projects incurred around 54.8 per cent amount having each project above 25 crore, 26.4 per cent of the projects incurred around 1.3 per cent amount having each project between Rs 0 to 1 crore and only 13.7 per cent of projects spent around 24.4 per cent of the total amount spending 10 crore to 25 crore on each project. The sectors falling under the category of above 25 crores includes seed, horticulture, animal husbandry, agriculture mechanization, crop development and marketing and post harvest management.

5.1.4. Sector-Wise Expenditure according to Status

The sector-wise status-wise expenditure are presented in the Table 5.1.3. Out of total expenditure incurred, about only 38.2 per cent was spent on projects completed or substantially completed (87 no.) and on an average 54 per cent was spent on projects either approved or projects in

progress and ongoing (123 no.). Out of all sectors, fertilizer and INM and integrated pest management sector spent whole amount on completed and substantially completed projects. Only eight percent of the projects (18 no.) are either abandoned or not implemented considering number of projects as per allocations.

It is important to note that organic farming and bio fertilizers, which has incurred Rs. 22.09 crore but show as not implemented project. Seed sector has large amount of expenditure on completed and substantially completed projects with an expenditure of Rs.287 crore followed by agriculture mechanisation, research and animal husbandry sector with expenditure of Rs.83.7, Rs.78.9 and Rs.73.5 crore, respectively. Integrated pest management has least number of completed and substantially completed projects with an expenditure of Rs. 0.3 crore followed by organic farming / bio fertilizer and fisheries with expenditure of Rs. 0.4 and Rs. 15.4 crore, respectively.

Horticulture sector has the highest number of approved and ongoing project and projects in progress with an expenditure of Rs. 302.2 crores, followed by animal husbandry, agriculture mechanisation and seed with expenditures of Rs. 273.1, Rs. 206.4 and Rs. 195.8 crores respectively. Extension, organic farming / bio fertilizer and micro / minor irrigation have a fewer number of approved and ongoing projects and projects in progress with an expenditure of Rs.0.8, Rs.3.6 and Rs.4.6 crores, respectively. Sectors like integrated pest management and information technology have no expenditure shown with respect to approved and ongoing project and projects in progress. Fertilizers and INM sector have no approved and ongoing project and projects in progress as it as those sectors have completed the projects.

5.1.5. Sector and Sub-Sector Wise distribution of Project by Nature

Table 5.1.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure of normal, State flagship and national flagship projects in Andhra Pradesh. Out of total expenditure of Rs.1983.1 crores, about 13 per cent was spent on development of infrastructure in agriculture and allied activities and the remaining 87 per cent was spent on non-infrastructure projects. Infrastructure expenditure of normal, State flagship and national flagship projects accounted for 3.4 per cent, 5.3 per cent and 4.3 per cent of the total expenditure, respectively. On the other hand, non-infrastructure expenditure of normal, State flagship and national flagship accounted for 55.4 per cent, 8.6 per cent and 23 per cent of the total expenditure, respectively.

5.1.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 5.1 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Andhra Pradesh. By studying the difference

of expect and actual outputs and outcomes the, impact in terms of output and outcome is measured.

5.1.7. Concluding Remarks

In Andhra Pradesh, RKVY project comprises 18 sectors which include 51 sub sectors. Out of the 18 sectors, 5 sectors absorbed 81.2 per cent of the expenditure. Among the major sectors, seed utilized the most funds, followed by horticulture, animal husbandry, agriculture mechanization and research. These sectors might have played a crucial role for development of agriculture and allied activities in the State. In order for the State to develop infrastructure and assets in the agriculture and allied sectors, RKVY allocated a significant share of funds (13 per cent of the total expenditure). The State has managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities more or less in an integrated manner. Though there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects, primary survey of beneficiaries will be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

According to the State Action report, the most pressing concerns were based on the agriculture sectors sensitivity to drought, the depletion of natural resources and the loss of livelihood of rural farmers due to drought. In terms of RKVY projects helping to solve these problems, the State has done an admirable job in future proofing its agriculture sector in order to have sustainable growth in the long run.

Within the Seed sector, the project with the highest amount of funding was concerned with strengthening seed management and distribution of seeds to rural areas. The ability to have the programme to disperse drought resistant strains of crops is invaluable for preserving agriculture in Andhra Pradesh. Similarly, there are many research projects which are concerned with resource management and water management in order to alleviate spells of drought in the State. This focus on drought and resource depletion permeates the highest spending sectors and all of these projects have been very well funded through RKVY.

An attempt was made to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor alone. Trend in budgetary expenditure on agriculture and allied sector in Andhra Pradesh is presented in Table 5.1.5. The percentage change in the 10th FYP as compared with the 11th FYP is 85.9 per cent in revenue expenditure, 78.7 per cent in capital expenditure, 82 per cent

in total agriculture expenditure, and 69.7 per cent in total State budget including all sectors. The percentage share of agriculture expenditure to the total State budget is 29 per cent during 10th FYP and 32 per cent during 11th FYP, whereas the percentage share of agriculture expenditure to the GSDP is 13 per cent and 18 per cent during the same period. Out of total expenditure in agriculture in the State, RKVY shared 2.1 per cent of the total expenditure.

Comparing the composition of State budgetary expenditure on agriculture and allied sector in Andhra Pradesh, it is clear that percentage change over the 10th FYP has significantly increased in most of the sectors. Among them the larger percentage change was observed in dairy development (423.3 per cent) followed by the crop husbandry (326.5 per cent), minor irrigation (221.5 per cent), agriculture research (175.4 per cent), major and medium irrigation (158.5 per cent), others (141 per cent), other agriculture programs (129.9 per cent), etc. (Table 5.1.6). Table 5.1.7 presents the Gross State Domestic Product (GSDP) at factor cost by industry of origin in Andhra Pradesh at constant 2004-05 Prices. It is evident from the table that the share of agriculture GDP is reducing since 1999. However the rate of change is faster in the previous FYP as compared to the 11th FYP.

Table 5.1.8 and 5.1.9 presents the growth in State agriculture economy focusing on indicators such as the growth in agricultural GSDP, Growth in overall GSDP, net sown area, gross cropped and irrigated area, cropping and irrigation intensity, land productivity and average rainfall from 2002-03 till 2011-12, which covers two planning periods (10th and 11th FYP). Growth in agricultural GSDP has increased from 4 per cent to 5.3 per cent, when compared between 10th and 11th FYP, whereas the growth in the overall GSDP remained same at 8.2 per cent showing the positive contribution of agriculture to the overall GSDP growth during the same period. Some of reasons for such an increase in growth with respect to agriculture sector include increase in the net sown area, gross cropped and irrigated area, cropping and irrigation intensity and land productivity as clearly seen from the table interestingly average land productivity has increased by 26.5 per cent during 11th FYP as compared with the 10th FYP. The growth rate in area, yield and production was also a mixed bundle where productivity increased in cereals, food grains and oilseeds whereas it was declined in other pulses, fiber crops, etc (Table 5.1.10). Average Annual growth in production of livestock products and fishery in Andhra Pradesh presented in Table 5.1.11 indicates that there is significant increase in milk, meat, egg and fish production when compared across 10th and 11th FYP. The rate of growth is highest in fish and egg production followed by meat and milk production.

5.1.8. Has RKVY Addressed the Challenges Facing Agriculture in Andhra Pradesh?

RKVY spending in Andhra Pradesh has been mostly towards 5 sectors (seed, horticulture, agricultural mechanization, research and animal husbandry). Of these sectors, seed and research have the most projects devoted to solving the issue of low crop yields, poor irrigation/over

dependence on rain fed agriculture and better land management. While RKVY projects in both sectors attempt to address these problems (such as a Water Management research program and distribution for new hybrid seeds) they either have not adequately addressed to fundamentally solve long standing problems or are the same programmes being tried again.

Consider the RKVY project concerning distribution of new hybrid seeds that are more drought resistant and purport to have higher yields. There is no guarantee that farmers actually used these new hybrid seeds to much effect considering the failure of similar programs ten years ago. It is possible that investment in other sectors (such as Agriculture Mechanization) has provided the necessary inputs to make these new hybrid seeds a success in Andhra Pradesh, but it does not follow that the expenditure in the Seed sector for such projects was a driver of agricultural growth in the State.

Similarly, high expenditure in research concerning water management does not fundamentally solve the issue of a lack of irrigation. During the 1990's there was expansion of ground water irrigation, but that did not halt the decline of agriculture productivity in the State. It is difficult to imagine any amount of water management being sufficient to provide the boost needed to match crop yields in Andhra Pradesh to States like Haryana and Punjab. It may well be that irrigation and water management is simply not a priority for the State, considering the claim made in the Andhra Pradesh Vision 2020 report describing the agriculture sector as having enough water for agriculture for the foreseeable future.

TABLES

Table 5.1.1: Sector-Wise Allocation and Expenditure under 11th Five Year Plan

Sectors	No. of project	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio	Expenditure per Project
Seed	10 (10)	576.9 (19.8)	482.8 (24.4)	0.8	48.3
Horticulture	18 (20)	423.1 (14.6)	371.2 (18.8)	0.9	20.6
Animal Husbandry	31 (36)	430 (14.8)	346.5 (17.5)	0.8	11.2
Agriculture Mechanization	19 (20)	550.3 (18.9)	290.1 (14.7)	0.5	15.3
Research	61 (61)	141.8 (4.9)	114.3 (5.8)	0.8	1.9
Crop Development	5 (5)	128 (4.4)	99.5 (5.1)	0.8	19.9
Marketing & PHM	6 (7)	108.3 (3.8)	77.9 (4)	0.7	13.0
Dairy Development	12 (14)	107.9 (3.8)	69.7 (3.6)	0.6	5.8
Fisheries	23 (28)	60 (2.1)	38.2 (2)	0.6	1.7
Organic Farming / Bio Fertiliser	4 (6)	66.1 (2.3)	26.1 (1.4)	0.4	6.5
Extension	5 (5)	30.2 (1.1)	18.6 (1)	0.6	3.7
Fertilisers & INM	1 (1)	16.3 (0.6)	16.3 (0.9)	1.0	16.3
Innovative Programmes	1 (3)	166.7 (5.8)	10.6 (0.6)	0.1	10.6
Natural Resource Management	1 (1)	20 (0.7)	10 (0.6)	0.5	10.0
Sericulture	4 (4)	10 (0.4)	7 (0.4)	0.7	1.7
Micro/Minor Irrigation	2 (2)	71.3 (2.5)	4.6 (0.3)	0.1	2.3
Integrated Pest Management	2 (2)	0.4 (0.1)	0.4 (0.1)	0.8	0.2
Information Technology	0 (2)	9 (0.4)	0 (0)	0.0	0.0
Grand Total	**205 (227)**	**2915.7 (100)**	**1983.1 (100)**	**0.7**	**9.7**

Source: www.rkvy.nic.in as on April, 2013;

Note: *Figures in the parenthesis in column 2 indicates no. of projects w.r.t. allocation

Figures in the parenthesis in column 3 and 4 indicates the percentage to the respective total

INM: Integrated Nutrient Management; PHM-Post Harvest Management

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 5.1.2: Sectors Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Seed	0.0	0.0	10.0	0.7	10.0	4.4	80.0	94.9	10(100)	482.8(100)
Horticulture	16.7	0.4	38.9	9.2	27.8	23.7	16.7	66.7	18(100)	371.1(100)
Animal husbandry	9.7	0.7	58.1	25.4	22.6	42.0	9.7	32.0	31(100)	346.5(100)
Agriculture mechanization	10.5	0.5	31.6	11.2	31.6	30.7	26.3	57.7	19 (100)	290.0(100)
Research (Agri/Horti/animal husbandry etc	44.3	10.9	55.7	89.1	0.0	0.0	0.0	0.0	61(100)	114.2(100)
Crop development	0.0	0.0	40.0	15.5	20.0	20.5	40.0	64.0	5(100)	99.4(100)
Marketing and post harvest management	0.0	0.0	66.7	27.4	16.7	21.3	16.7	51.4	6(100)	77.8(100)
Dairy development	8.3	0.7	75.0	55.6	16.7	43.7	0.0	0.0	12(100)	69.6(100)
Fisheries	43.5	12.8	56.5	87.2	0.0	0.0	0.0	0.0	23(100)	38.1(100)
Organic farming / bio fertiliser	50.0	1.4	25.0	13.8	25.0	84.9	0.0	0.0	4(100)	26(100)
Extension	40.0	7.2	40.0	22.9	20.0	69.9	0.0	0.0	5(100)	18.6(100)
Fertilisers and INM	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	1(100)	16.3(100)
Innovative programmes/ training/ capacity building/ others	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	1(100)	10.6(100)
Natural resource management	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	1(100)	10(100)
Sericulture	50.0	7.7	50.0	92.3	0.0	0.0	0.0	0.0	4(100)	6.9(100)
Micro/minor irrigation	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	2(100)	4.6(100)
Integrated pest management	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	2(100)	0.3(100)
Grand total	**26.4**	**1.3**	**49.3**	**19.5**	**13.7**	**24.4**	**10.7**	**54.8**	**205**	**1983.1**

Source: http://rkvy.nic.in/ as on April, 2013;

Note:* indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure; INM: Integrated nutrient management
Figures in the parenthesis are percentage to the respective total

Table 5.1.3: Sector-Wise Expenditure by their Status of the Projects (2006-07 to 2011-12)

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not implemented	
	No.	Exp.	No.	Exp	No.	Exp.
Seed	4	195.8	6	287.0	0	0.0
Horticulture	10	302.2	8	69.0	3	0.0
Animal Husbandry	18	273.1	15	73.5	3	0.0
Agriculture Mechanization	16	206.4	4	83.7	0	0.0
Research	28	35.4	33	78.9	0	0.0
Crop Development	5	99.4	0	0.0	0	0.0
Marketing & PHM	5	61.3	1	16.5	1	0.0
Dairy Development	8	43.0	4	26.7	2	0.0
Fisheries	18	22.8	7	15.4	3	0.0
Organic Farming / Bio Fertiliser	1	3.6	2	0.4	3	22.1
Extension	1	0.8	4	17.8	0	0.0
Fertilisers & INM	0	0.0	1	16.3	0	0.0
Innovative Programmes	2	10.6	0	0.0	1	0.0
Natural resource management	1	10.0	0	0.0	0	0.0
Sericulture	4	6.9	0	0.0	0	0.0
Micro/Minor Irrigation	2	4.6	0	0.0	0	0.0
Integrated Pest Management	0	0.0	2	0.3	0	0.0
Information Technology	0	0.0	0	0.0	2	0.0
Grand Total	**123**	**1275.7**	**87**	**685.2**	**18**	**22.1**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: INM: Integrated nutrient management, PHM: Post harvest management
No.: No. of projects

Table 5.1.4: Sector and Sub-Sector Wise Classification by Nature of the Project

(Per cent)

Sectors & Sub-Sectors	Normal project		State Flagship project		National flagship project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Seed	**0.0**	**25.6**	**0.0**	**6.9**	**8.4**	**59.2**	**8.4(40.5)**	**91.7(442.4)**	**100(482.8)**
Others (seed)	0.0	0.0	0.0	0.0	0.0	100.0	0(0)	100(109.9)	100(109.9)
Seed distribution	0.0	32.1	0.0	10.8	0.0	57.1	0(0)	100(307.9)	100(307.9)
Seed farm	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(3.5)	100(3.5)
Seed processing centers and storage	0.0	34.4	0.0	0.0	65.6	0.0	65.7(40.5)	34.4(21.2)	100(61.6)
Horticulture	**1.0**	**74.7**	**0.2**	**2.7**	**6.4**	**15.0**	**7.6(28.2)**	**92.5(343)**	**100(371.2)**
Area expansion	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(246.3)	100(246.3)
Development of horticulture farms/ facilities	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(4.4)	100(4.4)
Fruits	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(3.2)	100(3.2)
Nurseries and green houses	0.0	0.0	100.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Others (horticulture)	24.9	75.1	0.0	0.0	0.0	0.0	24.9(3.6)	75.2(10.8)	100(14.4)
Vegetable	0.0	16.6	0.0	5.7	23.3	54.3	23.3(23.9)	76.8(78.5)	100(102.3)
Animal husbandry	**1.3**	**57.5**	**3.2**	**13.8**	**0.0**	**24.1**	**4.6(15.8)**	**95.5(330.8)**	**100(346.5)**
Animal health	3.8	46.1	12.5	37.6	0.0	0.0	16.3(14.5)	83.8(74.8)	100(89.3)
Breed improvement	0.0	1.9	0.0	12.3	0.0	85.8	0(0)	100(68.2)	100(68.2)
Extension and training	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.4)	100(2.4)
Feed and fodder	0.0	81.3	0.0	18.8	0.0	0.0	0(0)	100(32)	100(32)
Infrastructure	1.7	98.3	0.0	0.0	0.0	0.0	1.7(1.3)	98.4(73.2)	100(74.5)
Others (animal husbandry)	0.0	68.9	0.0	0.0	0.0	31.1	0(0)	100(80.4)	100(80.4)
Agriculture mechanisation	**0.0**	**67.8**	**11.4**	**2.6**	**7.2**	**11.0**	**18.7(54.1)**	**81.4(236.1)**	**100(290.1)**
Custom hiring centres	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(99.7)	100(99.7)
Machines and equipment assistance	0.0	64.7	0.0	0.0	14.0	21.3	14.1(21.1)	86(129)	100(150)
Others (agri. Mechanisation)	0.0	0.0	81.5	18.5	0.0	0.0	81.5(33)	18.6(7.5)	100(40.5)

Research (agri/horti/animal husbandry etc.)	**0.0**	**89.9**	**8.6**	**1.5**	**0.0**	**0.0**	**8.7(9.9)**	**91.4(104.4)**	**100(114.3)**
Agri facility	0.0	80.6	0.0	19.4	0.0	0.0	0(0)	100(6.2)	100(6.2)
Agri research project	0.0	94.4	5.0	0.6	0.0	0.0	5.1(4.9)	95(91.5)	100(96.3)
Agri research/ teaching facility (infrastructure)	0.0	25.6	74.4	0.0	0.0	0.0	74.5(5)	25.6(1.8)	100(6.8)
Others (research-agri, horti& animal husbandry)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(5.1)	100(5.1)
Crop development	**0.0**	**79.5**	**0.0**	**20.5**	**0.0**	**0.0**	**0(0)**	**100(99.5)**	**100(99.5)**
Coarse cereals	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(8)	100(8)
Others (crop development)	0.0	26.9	0.0	73.1	0.0	0.0	0(0)	100(28)	100(28)
Paddy	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(38.5)	100(38.5)
Pulses	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(25.1)	100(25.1)
Marketing and post harvest management	**51.4**	**27.4**	**0.0**	**21.2**	**0.0**	**0.0**	**51.5(40)**	**48.6(37.9)**	**100(77.9)**
Godowns and warehouses	75.9	24.1	0.0	0.0	0.0	0.0	75.9(40)	24.2(12.8)	100(52.8)
Others (marketing & phm)	0.0	34.2	0.0	65.8	0.0	0.0	0(0)	100(25.2)	100(25.2)
Dairy development	**4.7**	**57.0**	**38.3**	**0.0**	**0.0**	**0.0**	**43.1(30)**	**57(39.7)**	**100(69.7)**
Dairy units to farmers	0.0	0.0	100.0	0.0	0.0	0.0	100(6)	0(0)	100(6)
Milk processing	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(6.9)	100(6.9)
Promotion of milk collection centres	5.8	57.8	36.4	0.0	0.0	0.0	42.2(24)	57.9(32.9)	100(56.8)
Fisheries	**43.7**	**34.5**	**20.3**	**1.6**	**0.0**	**0.0**	**64(24.4)**	**36.1(13.8)**	**100(38.2)**
Farmers fish ponds/ assistance including training	4.9	78.8	16.3	0.0	0.0	0.0	21.3(2)	78.8(7.3)	100(9.2)
Fish marketing	63.2	0.0	36.8	0.0	0.0	0.0	100(9.5)	0(0)	100(9.5)
Infrastructure/ ponds of fisheries/ dept/ agency	48.8	35.0	16.3	0.0	0.0	0.0	65.1(11)	35(5.9)	100(16.9)
Others (fisheries)	76.7	0.0	0.0	23.3	0.0	0.0	76.7(2)	23.4(0.6)	100(2.6)
Organic farming / bio fertiliser	**0.0**	**98.6**	**0.0**	**1.4**	**0.0**	**0.0**	**0(0)**	**100(26.1)**	**100(26.1)**
Others (organic farming & bio-fertilizer)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(22.1)	100(22.1)
Promotion of organic farming	0.0	90.9	0.0	9.1	0.0	0.0	0(0)	100(4)	100(4)
Extension	**0.0**	**4.0**	**84.0**	**12.0**	**0.0**	**0.0**	**84.1(15.7)**	**16(3)**	**100(18.6)**
Infrastructure	0.0	0.0	100.0	0.0	0.0	0.0	100(13)	0(0)	100(13)
Kvks / knowledge centres / dissemination	0.0	15.0	52.4	32.6	0.0	0.0	52.4(2.7)	47.7(2.4)	100(5.1)
New approaches to extension	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(0.6)	100(0.6)

Fertilisers and INM	**0.0**	**0.0**	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(16.3)**	**100(16.3)**
Fertiliser labs	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(16.3)	100(16.3)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(10.6)**	**100(10.6)**
Innovative programmes	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(10.6)	100(10.6)
Natural resource management	**0.0**	**0.0**	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(10)**	**100(10)**
Others (NRM)	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(10)	100(10)
Sericulture	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(7)**	**100(7)**
Cocoon production	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Others (sericulture)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(6.8)	100(6.8)
Micro/minor irrigation	**0.0**	**43.8**	**0.0**	**56.2**	**0.0**	**0.0**	**0(0)**	**100(4.6)**	**100(4.6)**
Drip irrigation	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(2.6)	100(2.6)
Sprinkler and drip irrigation	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Integrated pest management	**0.0**	**5.7**	**0.0**	**94.3**	**0.0**	**0.0**	**0(0)**	**100(0.4)**	**100(0.4)**
Promotion of IPM	0.0	5.7	0.0	94.3	0.0	0.0	0(0)	100(0.4)	100(0.4)
Grand Total	**3.4**	**55.4**	**5.3**	**8.6**	**4.3**	**23.0**	**13(258.2)**	**87(1724.9)**	**100(1983.1)**

Source: http://rkvy.nic.in/ as on April, 2013

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 5.1.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004 05 prices)

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. Crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	2823	2011	4833	19833	24.4	10.3	
2003-04*	3196	1598	4795	22117	21.7	8.9	
2004-05	3117	3526	6644	23274	28.5	11.8	
2005-06	3675	5931	9606	27737	34.6	16.1	
2006-07	4196	7489	11685	32225	36.3	19.2	
10th Plan	**17007**	**20555**	**37562**	**125186**	**29**	**13**	
2007-08	5660	9337	14997	40601	36.9	21.0	
2008-09	5980	6596	12576	40793	30.8	17.4	
2009-10	5704	8075	13779	39996	34.5	19.1	
2010-11	6259	5991	12249	41235	29.7	15.8	**2.1**
2011-12*	8012	6741	14753	49823	29.6	18.9	
11th Plan	**31615**	**36739**	**68354**	**212447**	**32**	**18**	
% change over 10th plan	**85.9**	**78.7**	**82.0**	**69.7**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes irrigation and flood control

Budgetary expenditure is accounts only Developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 5.1.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sectors

(Rs. Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	2034.6 (5.3)	8677.9 (9.1)	326.5
2	Soil and Water Conservation	100.8 (0.3)	163.1 (0.2)	61.8
3	Animal Husbandry	953 (2.5)	2103.5 (2.2)	120.7
4	Dairy Development	3.7 (0.1)	19.1 (0.1)	423.3
5	Fisheries	134.5 (0.4)	267 (0.3)	98.6
6	Forestry and Wild Life	1414.4 (3.7)	1563.1 (1.7)	10.5
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	0 (0)	0 (0)	0.0
9	Agricultural Research and Education	622.1 (1.7)	1713.2 (1.8)	175.4
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	815.2 (2.2)	1041.5 (1.1)	27.8
12	Other Agricultural Programmes	25.5 (0.1)	58.6 (0.1)	129.9
13	Major and Medium Irrigation	10703.1 (27.7)	27663.5 (28.9)	158.5
14	Minor Irrigation	418.2 (1.1)	1344.6 (1.5)	221.5
15	Flood Control and Drainage	323.3 (0.9)	438.9 (0.5)	35.8
16	Others	21093.3 (54.6)	50825.7 (53.1)	141.0
	Total	**38641 (100)**	**95879.1 (100)**	**148.1**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others

Figures in the parenthesis are percentage to the respective total

Table 5.1.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin at 2004-05 prices

(Per cent)

Year	Agriculture and Allied (%)	Industry (%)	Services (%)
1999-00	27.8	23.9	48.1
2000-01	29.1	22.8	47.9
2001-02	27.5	22.9	49.5
2002-03	24.7	24.1	51.3
2003-04	26.0	23.4	50.6
2004-05	25.1	24.3	50.6
2005-06	24.3	24.4	51.3
2006-07	22.3	25.8	51.9
2007-08	23.3	25.5	51.1
2008-09	22.0	25.6	52.4
2009-10	21.1	25.2	53.7
2010-11	20.6	24.7	54.6
2011-12	19.3	24.7	56.0
2012-13	19.7	23.1	57.3

Source: CSO, MOSPI, 2013

Table 5.1.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-7.8	2.7	96	116	120.2	48727
2003-04	15.1	9.3	101	124	122.2	53317
2004-05	4.4	8.2	103	125	121.2	54560
2005-06	6.1	9.6	107	134	124.4	55644
2006-07	2.0	11.2	101	128	126.3	60083
10th Plan Average	**4.0**	**8.2**	**102**	**125**	**122.9**	**54466**
2007-08	17.4	12.0	108	136	126.1	66533
2008-09	0.8	6.9	109	138	127.3	66349
2009-10	0.2	4.5	100	126	125.7	72327
2010-11	7.3	9.7	112	145	129.7	69312
2011-12	0.8	7.8	112	145	129.7	69851
11th Plan Average	**5.3**	**8.2**	**108**	**138**	**127.7**	**68874**

Source: Directorate of Economics and Statistics, GOI
Note:*land productivity = agricultural GSDP/ha of NSA

Table 5.1.9: Trend in Input Use in Andhra Pradesh

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertiliser consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	36.1	45.4	37.6	125.5	39.2	128.4
2003-04	36.3	47.8	35.9	131.6	38.7	145.3
2004-05	38.8	49.9	37.6	128.5	39.8	158.6
2005-06	43.9	60.0	40.9	136.5	44.9	203.6
2006-07	44.5	60.7	43.9	136.3	47.4	221.8
10th Plan Average	**39.9**	**52.7**	**39.2**	**131.7**	**42.0**	**171.5**
2007-08	46.4	62.9	43.2	135.3	46.3	196.6
2008-09	48.2	67.4	44.4	139.9	48.7	226.4
2009-10	42.1	57.6	42.2	136.8	45.9	225.7
2010-11	50.3	71.5	45.0	142.1	49.3	278.4
2011-12	50.3	71.5	45.0	142.1	49.3	266.1
11th Plan Average	**47.5**	**66.2**	**43.9**	**139.2**	**47.9**	**238.6**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column 6= Gross irrigated area /Gross sown area*100

Table 5.1.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	2.4	3.4	0.5	2.6	3.9	1.3
Wheat	-4.8	11.4	19.3	-0.6	13.2	10.1
Jowar	-7.5	-5.7	1.5	-5.0	4.3	13.6
Bajra	-3.3	10.6	4.4	-1.9	19.5	15.3
Maize	12.4	16.3	1.8	4.0	12.8	8.8
Ragi	-5.9	-7.3	-2.4	-6.5	-8.1	-1.4
Small Millets	-9.3	-9.4	-1.3	-2.3	21.3	19.5
Coarse Cereals	0.8	9.9	7.5	-0.5	10.4	12.6
Total Cereals	1.5	4.1	1.6	1.2	5.2	3.1
Gram	18.8	17.2	1.3	-1.1	-2.1	-1.5
Arhar/Tur	-0.1	3.3	1.3	5.8	8.1	-0.8
Other Pulses	-3.6	-1.0	2.8	-20.1	-22.3	-21.0
Total Pulses	1.2	5.0	4.3	0.1	-0.8	-0.8
Total Food grains	1.1	4.1	2.1	0.6	4.6	3.1
Groundnut	-3.0	-2.0	-2.6	2.4	35.5	19.4
Sesamum	2.2	14.2	11.2	-4.2	-4.9	2.8
Castor	-2.8	5.7	9.4	-20.3	-4.2	-7.4
Safflower	-6.4	11.6	18.2	-5.4	2.2	6.7
Niger seed	-5.2	-8.1	-3.2	-10.1	-6.3	3.8
Sunflower	12.9	9.4	-1.4	-17.6	-14.5	3.4
Soya bean	44.7	64.3	11.3	8.1	11.0	12.1
Total Oilseeds	-0.8	0.4	-0.5	-1.6	15.7	11.2
Cotton	-0.2	9.5	9.8	14.6	21.9	-10.0
Mesta	-3.3	-3.1	0.9	-13.7	-15.4	-16.3
Total Fibres	-0.7	4.2	5.9	-6.5	-1.3	-16.2
Sugarcane	4.3	4.5	0.4	-3.7	-3.0	0.0

Source: Directorate of Economics and Statistics, GOI

Table 5.1.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	13.2	19.5	11.6	22.5
2003-04	5.7	12.4	0.9	14.1
2004-05	4.3	0.9	5.4	-9.7
2005-06	5.1	1.3	4.1	4.5
2006-07	4.1	5.9	-3.1	-3.8
10th plan	**6.5**	**8.0**	**3.8**	**5.5**
2007-08	12.4	14.9	10.3	17.9
2008-09	7.2	8.6	4.3	24.0
2009-10	9.0	12.4	5.7	4.2
2010-11	7.4	10.0	3.8	4.8
2011-12*	-	-	-	17.2
11th plan	**9.0**	**11.5**	**6.0**	**13.6**

Source: BAHS, www.Indiastat.com
Note: *For Milk, Meat and Egg 2011-12 data are not available

5.2 GOA

5.2.1. Background Information

The RKVY programme was implemented in India in 2007 to combat the overall decline in Indian agriculture throughout the 1990's, where overall crop output had fallen to 2.2 per cent growth (Subramanyan and Sekhar, 2003). Similarly, this was true in Goa and RKVY projects in the State are designed to increase the agriculture growth rate to a target of 4 per cent. In order to understand whether RKVY initiatives in Goa have been successful, it is important to analyze the reasons for such a precipitous decrease in the growth in the agriculture.

As a State, Goa does not necessarily thrive on the success of it agrarian sectors. This has led to extreme underinvestment in all areas relating to agricultural production. There is a general paucity of readily available and affordable inputs in the State. This production problem is further exacerbated by the lack of efficient markets for goods in Goa. Studies have noted that delays in market transactions have had clear impacts on the supply of regular produce which has led to un-organized sectors picking up surplus goods (Pednekar, 2010).

However, even with dysfunctional markets, input availability is a serious problem in the State. High input costs have undermined start up enterprises in poultry and livestock production, something which also affects farming. Research on new farm enterprise suggests heavy subsidies are necessary for both water and electricity along with other inputs such animal feed (Swain et al., 2009). Given the negative effect water subsidies have had on Tamil Nadu, it seems that using government price supports in this matter is not a sustainable long term solution.

5.2.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across agriculture and allied sectors, which is presented in Table 5.2.1. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector during the 11th FYP. The sectors in the tables are arranged in descending order considering expenditure. In the present study we shall focus our concentration on the expenditure actually incurred considering its importance over the allocation. Specifically, these are the projects which have contributed significantly for achieving the targeted agricultural growth rate in the State. With respect to expenditure across sectors, two major sectors (animal husbandry and agricultural mechanization) contributed 84.5 per cent of the total expenditure and remaining 16 minor sectors utilized only 15.5 per cent of the total expenditure in the State, as represented in figure 5.2.

By looking at the ratio of expenditure to allocation of funds provided by the RKVY project, it is possible to discern which sectors held the highest priority of the State. In order to facilitate the cardinal ranking of sectors based on the State's preference, four distinct ratio ranges were constructed. However, the case of Goa is an interesting outlier as hardly any of the allotted RKVY funds have been spent. Out of all the sectors, only one (marketing and PHM) has an expenditure allocation ratio greater than 0.5. The other significant sectors (animal husbandry, agriculturemechanization, and fisheries) have only spent 40 per cent, 30 per cent and 20 per cent of allocated funds on projects while all other expenditure is very marginal in 4 other sectors (dairy development, fertilizer, crop development and extensions).All other sectors have not made any expenditure using RKVY funds. As such creating a cardinal ranking system based on State preferences for sectors seems quite difficult considering how few RKVY projects have actually been funded. As such, aside from Marketing and PHM (which has used all its expenditure allocation), all other project allocations seem to have been inadequately planned.

Further expenditure per project was highest in the animal husbandry sector with Rs.2.1 crores and lowest in the fertilizer and INM sector with Rs.0.1 crores. Similarly, expenditure and allocation both follow the same trend with respect to the other sectors.Expenditure per project of all minor sectors was found to be lower when compared with all major sectors. The above results are clearly seen in the Table 5.2.1, which represent the distribution of allocation, expenditure and expenditure per project across sectors.

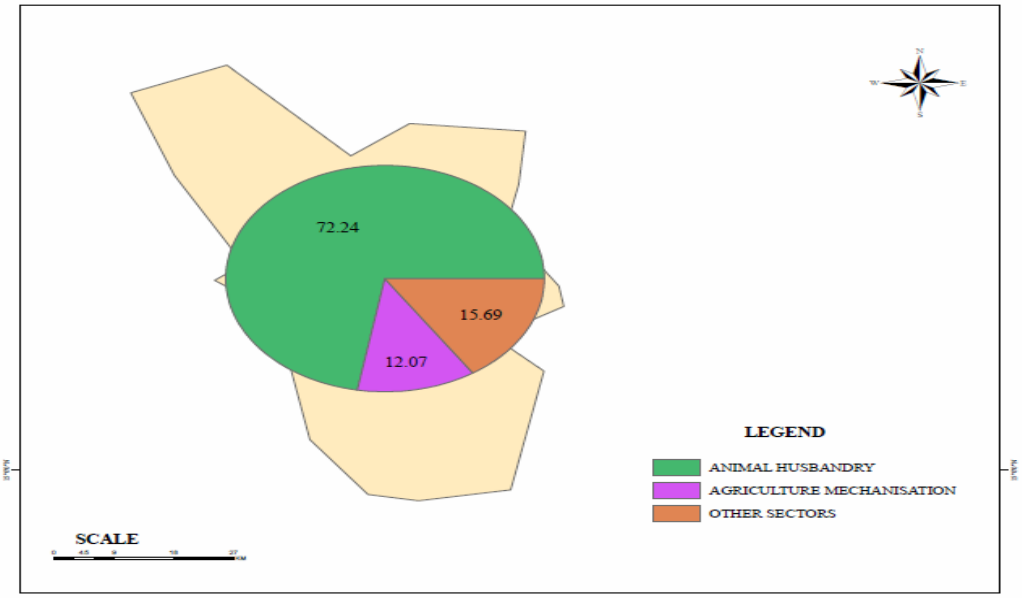


Figure 5.2: Share of Expenditure across Sectors

Note: Other sectors include dairy development, fertilizers and INM, crop development, marketing and post harvest management, fisheries, extension, horticulture, information technology, innovative programmes/ training/ capacity building/ others, integrated pest management, micro/minor irrigation, natural resource management, nonfarm activities, organic farming / bio fertilizer, research (agri/horti/animal husbandry etc.) and seed.

5.2.3. Sector-Wise Size of the Projects based on the Expenditure

The numbers and magnitude of projects undertaken and expenditure incurred under RKVY during the 11th FYP is presented in Table 5.2.2. The total amount spent under RKVY per project have been divided into Rs. 0-1 crore and Rs. 1-10 crore. Out of the total expenditure, 92.3 per cent of the projects incurred only 40 per cent of the expenditure at the bottom spending of less 1 crore and most of the sectors had projects in this category. On the other extreme, around 1.5 per cent of the projects incurred around 69.1 per cent amount having each project spending of Rs. 1 to 10 crore. The sectors falling under the category of Rs. 1 to 10 crore includes animal husbandry.

5.2.4. Sector-Wise Expenditure according to Status

The sector-wise status-wise expenditure are presented in the Table 5.2.3. Out of total expenditure incurred, about 8.6 per cent was spent on projects completed or substantially completed (6 no.) and 82.9 per cent was spent on projects either approved or projects in progress and ongoing (58 no). Out of all sectors, animal husbandry and fertilizer and INM sector only spent on completed and substantially completed projects. Apart from the above mentioned sectors none of the sectors had spent any expenditure. Completed andsubstantially completed projects although the projects were meant to be completed in 11th five year plan but it has been spilled over to 12th five year plan.

Animal husbandry sector has highest number of approved and ongoing project and projects in progress with an expenditure of Rs. 4.00 crores followed by agriculture mechanization, dairy development and crop development with expenditure of Rs. 0.7, Rs. 0.3 and Rs. 0.2 crores respectively. Fertilizers and INM, and marketing & PHM have a lesser expenditure on approved and ongoing project and projects in progress with an expenditure of Rs.0.1 and Rs. 0.1 crore respectively. Sectors like fisheries, extension, horticulture, innovative programmes, natural resource management, seed, information technology; integrated pest management and so on has no expenditure with respect to approved and ongoing project and projects in progress.

5.2.5. Sector and Sub-Sector Wise distribution of Project by Nature

Table 5.2.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure of normal and national flagship projects in Goa. There is no State flagship project in Goa. Out of total expenditure of Rs. 5.8 crore, about 3 per cent was spent on development of infrastructure in agriculture and allied activities and the remaining 87 per cent was spent on non-infrastructure projects. Infrastructure expenditure of normal project accounted for 3 per cent of the total expenditure. Conversely, non-infrastructure expenditure of normal and national flagship projects accounted for 93.6 per cent and 3.3 per cent of the total expenditure, respectively.

5.2.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 5.2 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Goa. By looking at the differences between expected output, expected outcomes and actual outputs and actual outcomes, the impact of RKVY in terms of output and outcome is measured.

5.2.7. Concluding Remarks

In Goa, RKVY project comprises of 18 sectors which includes 36 sub sectors. Out of the 18 sectors, 2 sectors absorbed 84.4 per cent of the expenditure. Among the major sectors, animal husbandry utilized the most funds followed by agriculture mechanization. For the State to develop the infrastructure and assets in the agriculture and allied sectors, RKVY allocated significant share of funds (3per cent of the total expenditure). A strong focus is given to expenditure because RKVY's impact can be measured based on which expenditures are made. The State has managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects, primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

While there hasn't been a significant amount of expenditure in Goa, it is still important to note what sustainable agriculture in the State entails. This can provide an idea of where RKVY funds should go if and when expenditure for projects occurs. To facilitate this, the development plan as laid out by the Goa 2035: Vision and Road Map report submitted to the Chief Minister of Goa. The general agriculture focus of this report revolves around the reliance of the rural areas of Goa on agriculture for sustained economic growth. As it stands currently, general productivity of the land is far lower than desired suggesting that actions which can increase production per hectare. The State also currently has a need to manage water in a way where intensive agriculture can be sustainable for rural populations.

As such we expect RKVY spending to be based around resource efficacy (specifically water/irrigation practices) and agriculture mechanization in order to increase production per hectare to desired levels. The report notes that soil quality in the arable areas is quiet high and therefore low levels of fertilizer are currently used. This suggests that the land can support more intensive farming practices without the threat of resource degradation as detailed in the Goa 2035: Vision and Road Map report.

Attempts were made to analyze the growth of the agricultural sector before and after RKVY's initiation in Goa. While it is difficult to accurately separate all the individual effect RKVY has on agriculture in Goa, there are some interesting trends to discuss. Table 5.2.5 shows that overall State outlay on the 11th year plan, which has increased by 74.4 per cent. Agriculture expenditure as a percentage of the State budget has increased from 9.5 per cent in the 10th year plan to 10.3 per cent in the 11th year plan. Parsing the data to percentage agriculture expenditure to Gross State domestic Product (GSDP) share of agriculture expenditure increased from 16 per cent to 27.2 per cent, implying that agriculture has had a larger impact on the economy of Goa. Within the agriculture sector, the largest increases were seen in Major/minor irrigation, soil and water conservation, forest and wildlife and crop husbandry (Table 5.2.6).

Table 5.2.7 shows the share of the agriculture sectors contribution to GDSP, which has been steadily declining while Industry and Services sectors held relatively constant. Interestingly, there was a large increase in the last year of the 11th year project, jumping from 5.2 per cent to 11.8 per cent. Growth in agriculture GSDP decreased from the 10th year average of 6.5 per cent to 11th year average of 3.5 per cent and growth of agriculture as a share of GDSP decreased from 14 per cent to 9.1 per cent while all other indicators stayed constant(Table 5.2.8). Table 5.2.9 depicts the trend in inputs used in the agriculture sector in Goa where all factors remained constant except for the irrigation indicators. Per cent irrigated area to net sown area increased from 17.4 per cent to 25.8 per cent while irrigation intensity dropped from 162.5 per cent to 109.1 per cent which is expected. The growth rate in area, yield and production was also a mixed bundle where productivity increased in rice and total cereals whereas it was declined in pulses and other pulses (Table 5.2.10). Average annual growth in production of livestock products and fishery in Goa presented in Table 5.2.11 indicates that there is significant increase in egg production when compared across 10th and 11th FYP. There was a large decline in production of milk, meat and fish across 10th and 11th FYP.

5.2.8. How has RKVY Addressed the Challenges Facing Agriculture in Goa?

There has been hardly any spending on allocated RKVY projects and it is hard to say RKVY has had any meaningful impact on the agriculture sector. That being said, it is possible to look at the allocation for RKVY projects in sectors related to problems experienced by farmers in rural Goa. The largest allocated sectors in Goa are for the horticulture, innovative programs and natural resource management sectors. Projects in Horticulture have some focus on reducing input costs for cash crops grown in the State, but none of the projects have a mandate to smooth agriculture production or fix markets. Perhaps a more permanent solution would have been to allocate more funds set aside to ensure market access which has adversely affected agriculture production.

TABLES

Table 5.2.1: Sector-Wise Allocation and Expenditure under RKVY during 11th FYP

Sectors	No. of project expenditure	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure allocation ratio	Expenditure per Project (Rs. in crore)
Animal Husbandry	2 (7)	11.1 (10.1)	4.2 (72.4)	0.4	2.1
Agriculture Mechanization	1 (4)	2.5 (2.3)	0.7 (12.1)	0.3	0.7
Dairy Development	2 (7)	8.3 (7.5)	0.3 (5.2)	0.0	0.2
Fertilisers& INM	3 (8)	4.6 (4.2)	0.3 (4.9)	0.1	0.1
Crop Development	1 (4)	2.1 (1.9)	0.2 (3.4)	0.1	0.2
Marketing & PHM	0 (1)	0.1 (0.1)	0.1 (1.4)	1.0	0.0
Fisheries	1 (4)	0.2 (0.2)	0.1 (0.7)	0.2	0.0
Extension	2 (9)	2.5 (2.2)	0.1 (0.3)	0.0	0.0
Horticulture	1 (5)	29.1 (26.5)	0 (0)	0.0	0.0
Information Technology	0 (1)	3 (2.8)	0 (0)	0.0	0.0
Innovative Programmes	0 (4)	17.3 (15.7)	0 (0)	0.0	0.0
Integrated Pest Management	0 (1)	1.3 (1.2)	0 (0)	0.0	0.0
Micro/Minor Irrigation	0 (1)	0.1 (0.1)	0 (0)	0.0	0.0
Natural Resource Management	0 (2)	17 (15.5)	0 (0)	0.0	0.0
Non Farm Activities	0 (3)	2.3 (2.1)	0 (0)	0.0	0.0
Organic Farming / Bio Fertiliser	0 (1)	0.2 (0.2)	0 (0)	0.0	0.0
Research	0 (5)	2.3 (2.1)	0 (0)	0.0	0.0
Seed	0 (3)	6.8 (6.2)	0 (0)	0.0	0.0
Grand Total	**13 (70)**	**110.1 (100)**	**5.8 (100)**	**0.1**	**0.4**

Source: www.rkvy.nic.in as on April, 2013;

Note: *Figures in the parenthesis indicates no. of projects w.r.t. allocation

Figures in the parenthesis indicates the percentage to the respective total

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

INM: Integrated Nutrient Management; PHM-Post Harvest Management

Table 5.2.2: Sectors Classification of Projects according to their Expenditure

(per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd
Animal husbandry	50	4.5	16.7	95.5	2(100)	4.2(100)
Agriculture mechanisation	100	100	0	0	1(100)	0.7(100)
Dairy development	100	100	0	0	2(100)	0.3(100)
Fertilisers and INM	100	100	0	0	3(100)	0.3(100)
Crop development	100	100	0	0	1(100)	0.2(100)
Marketing and post harvest management	100	100	0	0	1(100)	0.0(100)
Fisheries	100	100	0	0	1(100)	0.0(100)
Extension	100	100	0	0	2(100)	0.0(100)
Grand Total	**92.3**	**40.0**	**1.5**	**69.1**	**13(100)**	**5.8 (100)**

Source: http://rkvy.nic.in/ as on April, 2013;
Note: * indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure;
INM: Integrated nutrient management;
Figures in the parenthesis are percentage to the respective total

Table 5.2.3: Sector-Wise Expenditure by their Status of the Projects (2006-07 to 2011-12)

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not implemented	
	No.	Exp.	No.	Exp	No.	Exp.
Animal Husbandry	6	4	1	0.2	0	0
Agriculture Mechanization	4	0.7	0	0	0	0
Dairy Development	7	0.3	0	0	0	0
Fertilisers & INM	5	0.1	2	0.2	1	0
Crop Development	4	0.2	0	0	0	0
Marketing & PHM	1	0.1	0	0	0	0
Fisheries	3	0.0	1	0.0	0	0
Extension	7	0.0	2	0.0	0	0
Horticulture	5	0.0	0	0	0	0
Information Technology	1	0.0	0	0	0	0
Innovative Programmes	2	0.0	0	0	2	0
Integrated Pest Management	1	0.0	0	0	0	0
Micro/Minor Irrigation	0	0	0	0	1	0
Natural Resource Management	2	0.0	0	0	0	0
Non Farm Activities	3	0.0	0	0	0	0
Organic Farming / Bio Fertiliser	0	0	0	0	1	0
Research	4	0.0	0	0	1	0
Seed	3	0.0	0	0	0	0
Grand Total	58	5.4	6	0.4	6	0

Source: http://rkvy.nic.in/ as on April, 2013.
Note: INM: Integrated nutrient management, PHM: Post harvest management

Table 5.2.4: Sector and Sub-Sector Wise Nature of the Project

(Per cent)

Sectors and Sub-sectors	Normal project		National flagship project	Total		Grand Total
	Infra structure	Non infra structure	Non infra structure	Infra structure	Non infra structure	
Animal husbandry	**0.0**	**100.0**	**0.0**	**0(0)**	**100(4.2)**	**100(4.2)**
Breed improvement	0.0	100.0	0.0	0(0)	100(0.2)	100(0.2)
Infrastructure	0.0	100.0	0.0	0(0)	100(4)	100(4)
Agriculture mechanisation	**0.0**	**100.0**	**0.0**	**0(0)**	**100(0.7)**	**100(0.7)**
Machines and equipment assistance	0.0	100.0	0.0	0(0)	100(0.7)	100(0.7)
Dairy development	**0.0**	**100.0**	**0.0**	**0(0)**	**100(0.3)**	**100(0.3)**
Dairy units to farmers	0.0	100.0	0.0	0(0)	100(0.3)	100(0.3)
Others (dairy development)	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Fertilisers and INM	**35.7**	**64.3**	**0.0**	**35.8(0.1)**	**64.3(0.2)**	**100(0.3)**
Soil health cards and soil testing	0.0	100.0	0.0	0(0)	100(0.2)	100(0.2)
Soil testing lab	100.0	0.0	0.0	100(0.1)	0(0)	100(0.1)
Crop development	**0.0**	**0.0**	**100.0**	**0(0)**	**100(0.2)**	**100(0.2)**
Paddy	0.0	0.0	100.0	0(0)	100(0.2)	100(0.2)
Marketing and post harvest management	**100.0**	**0.0**	**0.0**	**100(0.1)**	**0(0)**	**100(0.1)**
Setting up/ strengthening of market infrastructure	100.0	0.0	0.0	100(0.1)	0(0)	100(0.1)
Fisheries	**0.0**	**100.0**	**0.0**	**0(0)**	**100(0.1)**	**100(0.1)**
Farmers fish ponds/ assistance including training	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Extension	**0.0**	**100.0**	**0.0**	**0(0)**	**100(0.1)**	**100(0.1)**
Training/ study tour	0.0	100.0	0.0	0(0)	100(0.1)	100(0.1)
Grand total	**3.1**	**93.6**	**3.3**	**3(0.2)**	**97(5.7)**	**100(5.8)**

Source: http://rkvy.nic.in/ as on April, 2013

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 5.2.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. Crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	52	25	77	1280	6.0	9.4	
2003-04*	68	58	126	1576	8.0	13.5	
2004-05	65	69	134	1667	8.1	13.4	
2005-06	85	165	249	1845	13.5	20.2	
2006-07	87	155	243	2026	12.0	23.4	
10th Plan	**357**	**473**	**830**	**8394**	**9.5**	**16.0**	
2007-08	93	144	237	2055	11.5	22.5	
2008-09	101	133	234	2137	10.9	24.0	
2009-10	128	136	264	2499	10.6	26.9	**0.3**
2010-11	139	146	285	2724	10.5	28.0	
2011-12*	216	206	422	5223	8.1	34.8	
11th Plan	**677**	**765**	**1442**	**14638**	**10.3**	**27.2**	
% change over 10th plan	**89.8**	**61.6**	**73.7**	**74.4**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes Irrigation and flood control

Budgetary expenditure is accounts only Developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 5.2.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sectors

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	88 (10.2)	222.5 (10.5)	152.8
2	Soil and Water Conservation	10.5 (1.3)	28.8 (1.4)	176.4
3	Animal Husbandry	45.9 (5.3)	96.8 (4.6)	110.9
4	Dairy Development	19.1 (2.3)	46.2 (2.2)	142.2
5	Fisheries	45.7 (5.3)	112.5 (5.3)	146.0
6	Forestry and Wild Life	65.1 (7.6)	169.9 (8)	161.1
7	Plantations	1.1 (0.2)	0 (0)	-100.0
8	Food Storage and Warehousing	-0.1 (-0.1)	72.4 (3.4)	-144720.0
9	Agricultural Research and Education	6 (0.7)	7.7 (0.4)	28.3
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	34.5 (4)	64.5 (3.1)	86.8
12	Other Agricultural Programmes	1.9 (0.3)	4 (0.2)	110.7
13	Major and Medium Irrigation	38.3 (4.5)	108.1 (5.1)	182.4
14	Minor Irrigation	43.9 (5.1)	125 (5.9)	184.9
15	Flood Control and Drainage	0 (0)	0 (0)	0.0
16	Others	466 (53.9)	1078.7 (50.5)	131.5
	Total	**865.6 (100)**	**2136.4 (100)**	**146.8**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others

Figures in the parenthesis are percentage to the respective total

Table 5.2.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agriculture and Allied (%)	Industry (%)	Services (%)
1999-00	11.8	38.3	49.8
2000-01	10.1	39.9	50.1
2001-02	10.0	41.4	48.6
2002-03	9.1	43.3	47.6
2003-04	9.1	46.0	44.8
2004-05	7.9	47.0	45.2
2005-06	9.0	45.8	45.2
2006-07	6.9	47.7	45.4
2007-08	6.6	47.0	46.4
2008-09	5.6	45.8	48.6
2009-10	5.1	45.9	49.0
2010-11	4.8	45.1	50.1
2011-12	5.2	42.9	51.9
2012-13	11.8	38.3	49.8

Source: CSO, MOSPI, 2013.

Table 5.2.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	4.0	14.1	1	2	116.3	58142
2003-04	14.4	14.8	1	2	119.9	66516
2004-05	6.4	23.4	1	2	126.1	74486
2005-06	23.6	7.5	1	2	124.1	90022
2006-07	-16.0	10.0	1	2	125.5	75628
10th Plan Average	**6.5**	**14.0**	**1**	**2**	**122.4**	**72959**
2007-08	1.5	5.5	1	2	126.9	78503
2008-09	-7.3	10.0	1	2	123.0	72249
2009-10	0.8	10.2	1	2	121.2	74479
2010-11	3.5	10.2	1	2	122.1	77699
2011-12	19.0	9.4	1	2	122.1	92485
11th Plan Average	**3.5**	**9.1**	**1**	**2**	**123.1**	**79083**

Source: Directorate of Economics and Statistics, GOI
Note:*land productivity = agricultural GSDP/ha of NSA

Table 5.2.9: Trend in Input Use in Goa

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	0.2	0.4	17.0	162.5	23.8	32.3
2003-04	0.2	0.4	17.0	166.7	23.7	36.3
2004-05	0.2	0.4	17.9	166.7	23.7	34.1
2005-06	0.2	0.4	17.5	158.3	22.4	32.7
2006-07	0.2	0.4	17.5	158.3	22.1	35.0
10th Plan Average	**0.2**	**0.4**	**17.4**	**162.5**	**23.1**	**34.1**
2007-08	0.4	0.4	26.1	111.4	22.9	41.9
2008-09	0.4	0.4	25.9	102.9	21.7	47.8
2009-10	0.3	0.4	22.0	131.0	23.8	53.5
2010-11	0.4	0.4	27.5	100.0	22.5	46.1
2011-12	0.4	0.4	27.5	100.0	22.5	47.6
11th Plan Average	**0.3**	**0.4**	**25.8**	**109.1**	**22.7**	**47.4**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100; Column6= Gross irrigated area /Gross sown area*100

Table 5.2.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	1.4	1.6	0.0	-2.2	-0.7	1.4
Coarse Cereals	-3.3	-5.7	-1.4	6193.2	7153.3	-4.7
Total Cereals	1.4	1.6	0.0	23.6	40.8	2.3
Other Pulses	5.0	15.6	9.8	-28.5	-32.6	-24.1
Total Pulses	5.0	15.6	9.8	-2.3	-11.9	-8.3

Source: Directorate of Economics and Statistics, GOI

Table 5.2.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	2.2	300.0	0.5	9.5
2003-04	4.3	0.0	-0.5	14.2
2004-05	18.8	-	-87.2	1033.7
2005-06	-1.8	-	0.0	-89.4
2006-07	1.8	-	-7.5	-2.4
10th plan	**5.1**	**150.0**	**-19.0**	**193.1**
2007-08	1.8	150.0	12.6	-67.4
2008-09	1.7	20.0	-2.0	157.9
2009-10	0.0	0.0	-0.7	-1.0
2010-11	1.7	16.7	0.7	9.3
2011-12*	-	-	-	-3.5
11th plan	**1.3**	**46.7**	**2.7**	**19.1**

Source: BAHS, www.Indiastat.com; **Note**: *For Milk, Meat and Egg 2011-12 data are not available

5.3 KARNATAKA

5.3.1. Background Information

The RKVY programme was implemented in India in 2007 to combat the overall decline in Indian agriculture throughout the 1990's, where overall crop output had fallen to 2.2 per cent growth (Subramanyan and Sekhar, 2003). Similarly, this was true in Karnataka and RKVY projects in the State are designed to increase the agriculture growth rate to a target of 4 per cent. In order to understand whether RKVY initiatives in Karnataka have been successful, it is important to analyze the reasons for such a precipitous decrease in the growth in the agriculture.

The study of agriculture in Karnataka implies the clear understanding of how various inputs needed for production to create a negative feedback loop that creates the depressed economic growth in agriculture. As it currently stands, farmers need to purchase inputs (such as fertilizers) as there is a chronic lack of livestock biomass in the region. In such conditions, self sustainable agriculture is simply not possible and any attempts to create a virtuous cycle through increasing crop yields means the use of more expensive chemical fertilizers and inputs that degrade soil quality which are harmful to future crop yields (Purushothaman, Sheetal Patil and Irene Francis, 2012a). The farmer is now left more impoverished with the probability of future crop yields being unable to make up the income gap between inputs and outputs.

Research into why previous programmes failed to alleviate low growth in rural Karnataka highlight two distinct problems. Firstly, there is a severe scarcity of water for the amount of arable land in the State. Only 26.5 per cent of the land under crop production is irrigated which in turn makes drought much for devastating to the agriculture sector (Karnataka State Action Plan on Climate Change). Interestingly, the marginal gains of new inputs are much higher on irrigated farms than on rain fed farms which implies that the programmes implemented would have had a greater positive effect on agricultural growth had it been applied to more irrigated farms. Secondly, there is severe soil degradation in much of the arable land which has clearly harmed crop yields over the years (Purushothaman, Sheetal Patil and Irene Francis, 2012b). This lack of productivity per hectare is also having an effect on labour in rural Karnataka where seasonal unemployment grows from 12 per cent to 39 per cent as a growing season ends.

5.3.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors, which is presented in Table 5.3.1. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector during the 11th FYP. The sectors in the tables are arranged in

descending order considering expenditure. It is evident that the allocation and expenditure would move in the same direction. In the present study we shall focus our concentration on the expenditure actually incurred considering its importance over the allocation. Specifically, these are the projects which have contributed significantly for achieving the targeted agricultural growth rate in the State. With respect to expenditure across sectors, there are eight major sectors: innovative programmes, agriculture mechanization, horticulture, research, animal husbandry, seed, marketing and post harvest management, and crop development, which accounted for 83.4 per cent of the total expenditure while the remaining 11 minor sectors utilized only 16.6 per cent of the total expenditure in the State (Figure 5.3).

The ratio of expenditure to allocation point out whether there was any diversion taking place in the priorities set initially as well to see the absorption capacity of funds in relation to allocation. By looking at the ratio of expenditure to allocation of funds provided by the RKVY project, it is possible to discern which sectors held the highest priority of the State. In order to facilitate the cardinal ranking of sectors based on the State's preference, four distinct ratio ranges were constructed. For Karnataka, these ranges are (0.3 - 0.4), (0.4 - 0.6), (0.6 -0.8) and (0.8 or greater). Sectors within the higher brackets (0.6 - 0.8) and (0.8 or greater) generally had close to the correct allocation of funds to expenditure while those in the lower brackets (0.3 - 0.4) and (0.4 - 0.6) had little expenditure based on their allocation, suggesting that perhaps the allocation requested for those sectors was not adequately planned.

Based on the above ratios, we find that 15 sectors fall within the highest 2 brackets of expenditure ratios. Of these 15 sectors, 8 of them represent the highest contributors to total expenditure totalling 83.4 per cent; 3 of them (horticulture, animal husbandry and marketing) falling in the (0.6 to 0.8) bracket while the other 5 (Innovative Programs, Agriculture Mechanization, Research, Seed and Crop Development) fall in the highest bracket of (0.8 or greater). Only 4 sectors fall within the bottom two expenditure ratio brackets suggesting that those 4 sectors (Information Technology, Integrated Pest Management, Organic Farming and Extensions) had funding misallocated to their projects. Further it is evident from the table that overall expenditure-allocation ratio was 0.8 in Karnataka meaning that out of total allocated amount under RKVY, only 80 per cent was actually spent.

Expenditure per project was the highest in innovative programmes with Rs. 28.4 crores and lowest was the integrated pest management sector with Rs. 1.5 crores. Interestingly, expenditure per project of a few minor sectors (fisheries, natural resource management, organic farming/bio fertilizer and micro/minor Irrigation) was found to be higher when compared with few major sectors (horticulture, research, animal husbandry).

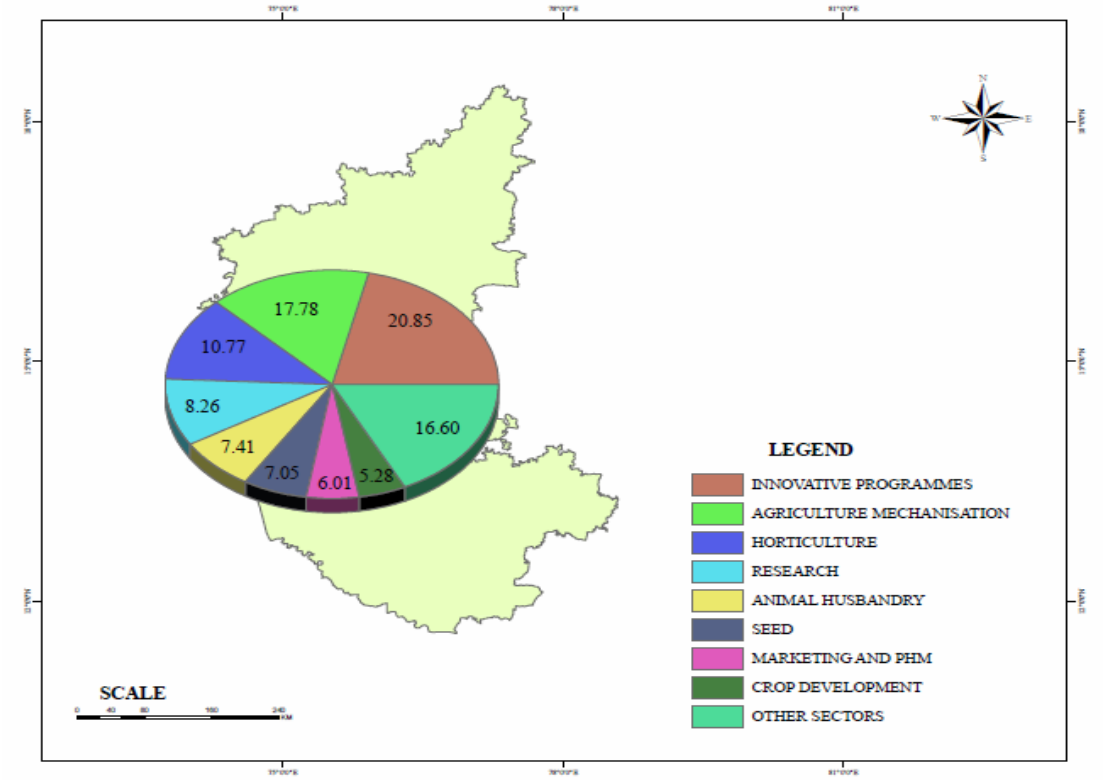


Figure 5.3: Share of Expenditure across Sectors

Note: Other sectors: Fisheries, micro/minor irrigation, organic farming / bio fertilizer, extension, natural resource management, non farm activities, sericulture, fertilizers and INM, information technology, integrated pest management and dairy development.

Spending through RKVY on various projects in the agriculture and allied sectors can have positive externalities. An example of this can be found in the heavy spending in agricultural mechanization sector. Projects put in place to increase mechanization in horticulture and paddy reduces the labour needed per unit of production. With more free man hours it is possible that there has been an increase in value added components to production. The extra man hours liberated thanks to increased mechanization in rural Karnataka can help in any number of sectors outside of agriculture.

A similar (but perhaps more quantifiable) phenomena occurs in animal husbandry. Increases in livestock, increase natural fertilizers from animal by-products (such as manure) and has lessened the need for purchasing chemical fertilizer. This in turn increases soil quality as farmers in Karnataka are reducing their consumption of chemical fertilizers which have an adverse effect on soil quality.

There are also positive externalities expected to be generated in the long run due to RKVY projects. Both the innovative programs sector and research sector have numerous projects which have long term effects on the growth of the agricultural sector in the State. Programs such as

providing e-trading capabilities for farmer to access agriculture markets in Karnataka provide both the consumer and the producer an optimal outcome, ensuring that the rural farmer can get the market rate for his produce without undue delay. This sort of high tech approach is also found when examining the RKVY project concerning integrated farming systems in Karnataka, ensuring that farmsteads all over the State have grow the most productive crops given their surroundings, climate and soil quality. This type program benefits the long term sustainability of the States agriculture sector as well as provides increasing access to technology to rural areas.

5.3.3. Sector-Wise Size of the Projects based on the Expenditure

The numbers and magnitude of projects undertaken and expenditure incurred under RKVY during the 11th FYP is presented in Table 5.3.2. The total amount spent under RKVY per project have been divided into Rs 0-1 crore, Rs 1-10 crore, Rs 10-25 crore and above Rs 25 crore. Out of the total expenditure, 54.7 per cent of the projects incurred only 21.3 per cent of the expenditure at the bottom spending between Rs.1 to Rs.10 crore amounts on each project. Most of the sectors had projects in this category. On the other extreme, around 7.7 per cent of the projects incurred around 49 per cent amount having each project spending above 25 crore and 23.1 per cent of projects spent around 1.34 per cent of the total amount spending between zero to 1 crore and 14.6 per cent of projects spent around 28.4 per cent of the total amount spending between Rs.10 to Rs. 25 crore on each project. The sectors falling under the category of above 25 crores includes innovative programmes, agriculture mechanization, seed, marketing and PHM, crop development and micro/minor irrigation.

5.3.4. Sector-Wise Expenditure according to Status

The sector-wise status-wise expenditure are presented in the Table 5.3.3. Out of total expenditure incurred, about 87 per cent was spent on projects completed or substantially completed (166 no.) and on an average 13 per cent was spent on projects either approved or projects in progress and ongoing (124 no). Out of all sectors, crop development, micro/minor irrigation, information technology and dairy development spent whole amount on completed and substantially completed projects. Only natural resource management sector spent least percentage of total expenditure on completed and substantially completed projects. Only one percent of the projects (3 no.) are either abandoned or not implemented considering number of projects as per allocations.

5.3.5. Sector and Sub-Sector Wise distribution of Project by Nature

Table 5.3.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure of normal, State flagship and national flagship projects in Karnataka. Out of total expenditure of Rs.1908.1 crores, about 15.6 per cent was spent on development of infrastructure

in agriculture and allied activities and the remaining 84.4 per cent was spent on non-infrastructure projects. Infrastructure expenditure of normal, State flagship and national flagship projects accounted for 10.3 per cent, 5.2 per cent and 0.1 per cent of the total expenditure, respectively. Conversely, non-infrastructure expenditure of normal and State flagship accounted for 78.6 per cent and 5.8 per cent of the total expenditure, respectively. About 90 per cent of the total infrastructure expenditure incurred by only five sectors namely research, micro/minor irrigation, animal husbandry, seed, and marketing and PHM.

5.3.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 5.3 presents the summary of the expected and actual output, the expected and actual outcome of the major sectors of RKVY projects in Karnataka as provided in the website. By looking at the difference of expected and actual outputs and outcomes the total impact captured in terms of output and outcome was attempted for the available information.

5.3.7. Concluding Remarks

Among the major sectors, innovative programmes utilized the most funds followed by agriculture mechanization, horticulture, research, animal husbandry, seed, marketing. For the State to develop infrastructure and assets in the agriculture and allied sectors, RKVY allocated a significant share of funds (15.6 per cent of the total expenditure).These sectors might have played a crucial role for development of agriculture and allied activities in the State. There is a major focus given to expenditure because its impact can be seen based on the expenditures are made. The State has managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the stated goals have been met considering the available secondary information. In order to validate the results from the available secondary data of RKVY projects, primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

Considering the wealth of funding RKVY has provided to the State, there is an expectation that RKVY has a transformative and lasting effect on agriculture in Karnataka. In order to accomplish this, there is an expectation that some of the projects using RKVY funds help promote and ensure the long term health of the agriculture sector in the State. To examine the effectiveness of RKVY in this regard, conclusions concerning sustainable agriculture are drawn from the State Action plan on Climate Change to determine if projects in various sectors have helped ensure the long term growth of the agricultural sector.

Within the Karnataka State Action plan, many concerns were raised concerning the levels of irrigated farm land in the state. Karnataka is the State at most risk for drought in South India and thus the blue print for sustainable agriculture was based around increase irrigation to smooth the effects of bad weather conditions (sub-optimal monsoon seasons for example). Coupled with that were concerns over soil erosion as well, due to depleting natural resources in rural areas.

Overall the effect of RKVY is mixed in terms of long term sustainability. There are quite a few programs in the Research and Innovation sector concerning climate change but none that tackle the basic lack of irrigation in the State. Overall infrastructure spending is only 15 per cent of total expenditure and of that 15 per cent the vast majority of funding went to the 8 major sectors and not to micro/minor irrigation. The total infrastructure spending and spending on infrastructure projects concerning irrigation probably needed to be much higher in order to help alleviate the risk of drought. That being said there are programs concerning rural water management in the State which can certainly help, but even so more attention should have been given to the lack of irrigation in Karnataka.

In terms of soil erosion, there is a program to ameliorate poor quality top soil to ensure productivity on previously more nutrient rich land. There are also long term initiatives regarding the breeding of crops which can withstand more extreme conditions including nutrient poor soil. As mentioned earlier, there is a chance that external benefits from the well funded animal husbandry sector can help invigorate the soil with animal by-products rather than a reliance on chemical fertilizer.

A modest effort was made to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor alone.Table 5.3.5 shows that although revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 57.7 per cent in the 11th Plan over 10th Plan, however, percentage of agriculture share in the State budget declined from 23 per cent in the 10th Plan to 21 per cent during the 11th Plan. Out of total expenditure in agriculture in the State, RKVY shared 27.9 per cent of the total expenditure. Although agriculture share in State total budget declined in the 11th Plan but agriculture expenditure as a share of State GSDP increased from 15 per cent in the 10th Plan to 16 per cent in the 11th Plan. This also suggests that GSDP from other sectors have increased faster than the GSDP from agriculture in the State from 10th to 11th Plan. Looking at sub sector budgetary expenditure (Table 5.3.6), the highest per cent change over the previous Plan happened in dairy development, crop husbandry, forest and wildlife and fisheries, some of these also received prime priority under RKVY.

Gross State Domestic Product (GSDP) at factor cost (2004-05) by industry of origin shows that the relative share of agriculture and allied activities to the total GSDP declined from 28.1 per cent in 1999-00 to 15.9 per cent in 2011-12, whereas the share of services has increased significantly in the same period(Table 5.3.7). The trend indicates the growth rate in agriculture and allied sectors has decreased over a year's which is more clearly seen in the Table 8. It is evident from the table that agricultural GSDP grew at a rate of 2.1 per cent in the 10th Plan to 6.6 per cent in the 11th Plan in the State. There was no significant increase in the net sown area, gross cropped and irrigated area, cropping and irrigation intensity and very significant increase in land productivity to the tune of 32 per cent during the above mentioned period (Table 5.3.8 &5.3.9). However, such increases in land productivity per hectare in value terms that may be due to inflation factor (Table 5.3.9). The growth rate in area, yield and production was also a mixed bundle where productivity increased in food grains and oilseeds whereas it was declined in coarse cereals, rice, wheat, jowar, tur, etc (Table 5.3.10).Average Annual growth in production of livestock products and fishery in Karnataka presented in Table 5.3.11 indicates that there is significant increase in milk, meat, egg and fish production when compared across 10th and 11th FYP. The rate of growth is highest in fish and egg production followed by milk and meat production.

5.3.8. Has RKVY Addressed the Challenges Facing Agriculture in Karnataka?

Major challenges facing agriculture in Karnataka include the scarcity of water, the cost of inputs and soil degradation. RKVY spending in the State focuses on some sectors (animal husbandry and crop development) that can have long term benefits to agriculture growth, while ignoring other important sectors (such as micro/minor irrigation). It is expected that the increase in livestock can help reduce the input costs that are currently cutting into farm incomes in Karnataka. Having access to organic fertilizers can also ensure high soil quality in the State while reducing the reliance on chemical fertilizers that cost more and leave the soil of a poor quality in the long run.

That being said, there is a lot of expenditure on innovative programmes in order to modernize cultivation and crop production in the State. The marginal benefits of these programs are much smaller than what could have been achieved. Ensuring that the States crop producing regions were irrigated would have meant larger returns on investment in the innovative programs sector. As there hasn't been large scale investment into the irrigation of farmland, it is hard to envisage the quantity of money invested in these projects to have a lasting impact on the welfare of its farmers and productivity. It is possible that high spending in agricultural mechanization and crop development sectors can create higher yields thanks to more intensive farming and new drought resistant crop varieties, but the marginal benefit of these programs in conjunction with infrastructure devoted to increasing irrigation in the State would have led to higher returns on investment.

TABLES

Table 5.3.1: Sector-Wise Allocation and Expenditure under 11th Five Year Plan

Sectors	No. of project (exp)	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure allocation ratio	Exp. per Project (Rs. crore)
Innovative programmes	14 (16)	411.8 (17.2)	397.9 (20.9)	1.0	28.4
Agriculture mechanization	12 (15)	366.5 (15.3)	339.2 (17.8)	0.9	28.3
Horticulture	39 (42)	264.4 (11)	205.5 (10.8)	0.8	5.3
Research	53 (68)	180.5 (7.5)	157.6 (8.3)	0.9	3.0
Animal husbandry	36 (43)	236 (9.9)	141.4 (7.5)	0.6	3.9
Seed	11 (13)	154.4 (6.5)	134.6 (7.1)	0.9	12.2
Marketing & PHM	20 (23)	167.4 (7)	114.6 (6.1)	0.7	5.7
Crop development	9 (9)	112 (4.7)	100.8 (5.3)	0.9	11.2
Fisheries	5 (5)	72 (3)	68.8 (3.7)	1.0	13.8
Micro/minor irrigation	2 (2)	55 (2.3)	55 (2.9)	1.0	27.5
Organic farming / bio fertilizer	6 (7)	88.9 (3.7)	46.8 (2.5)	0.5	7.8
Extension	10 (11)	139.8 (5.9)	45.2 (2.4)	0.3	4.5
Natural Resource Management	5 (5)	49 (2.1)	40.9 (2.2)	0.8	8.2
Non farm activities	9 (11)	41.2 (1.8)	28.6 (1.5)	0.7	3.2
Sericulture	8 (8)	19.5 (0.9)	13.3 (0.7)	0.7	1.7
Fertilizers and INM	3 (4)	11 (0.5)	6 (0.4)	0.5	2.0
Information Technology	1 (4)	21 (0.9)	5(0.3)	0.2	5.0
Integrated Pest Management	3 (4)	13.9 (0.6)	4.5 (0.3)	0.3	1.5
Dairy development	1 (1)	3 (0.2)	3 (0.2)	1.0	3.0
Grand total	247 (291)	2406.7 (100)	1908.1 (100)	0.8	7.7

Source: www.rkvy.nic.in as on April, 2013;

Note: *Figures in the parenthesis indicates no. of projects w.r.t. allocation;

Figures in the parenthesis indicates the percentage to the respective total;; if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost; INM: Integrated Nutrient Management; PHM-Post Harvest Management

Table 5.3.2: Sectors Classification of Projects according to their Expenditure

(per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Innovative programmes	0.0	0.0	42.9	4.0	14.3	8.3	42.9	87.8	14(100)	397.9(100)
Agriculture mechanization	16.7	0.3	33.3	5.9	0.0	0.0	50.0	93.8	12(100)	339.2(100)
Horticulture	12.8	1.5	61.5	24.6	25.7	74.0	0.0	0.0	39(100)	205.5(100)
Research	41.5	4.7	45.3	34.5	13.2	60.8	0.0	0.0	53(100)	157.6(100)
Animal husbandry	13.9	2.0	77.8	60.8	5.6	18.5	2.8	18.7	36(100)	141.4(100)
Seed	36.4	1.2	27.3	7.0	27.3	36.2	9.1	55.7	11(100)	134.6(100)
Marketing & PHM	15.0	1.4	75.0	49.8	5.0	21.1	5.0	27.8	20(100)	114.6(100)
Crop development	55.6	2.3	11.1	9.1	0.0	0.0	33.3	88.7	9(100)	100.8(100)
Fisheries	0.0	0.0	20.0	4.1	80.0	95.9	0.0	0.0	5(100)	68.8(100)
Micro/minor irrigation	0.0	0.0	0.0	0.0	50.0	18.2	50.0	81.8	2(100)	55(100)
Organic farming / bio fertilizer	16.7	1.1	50.0	28.3	33.3	70.6	0.0	0.0	6(100)	46.8(100)
Extension	30.0	4.9	50.0	44.1	20.0	51.0	0.0	0.0	10(100)	45.2(100)
NRM	20.0	2.3	40.0	25.0	40.0	72.7	0.0	0.0	5(100)	40.9(100)
Non farm activities	11.1	1.8	88.9	98.3	0.0	0.0	0.0	0.0	9(100)	28.6(100)
Sericulture	37.5	6.1	62.5	93.9	0.0	0.0	0.0	0.0	8(100)	13.3(100)
Fertilizers and INM	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	3(100)	6(100)
IT	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	5(100)
IPM	66.7	18.6	33.3	81.4	0.0	0.0	0.0	0.0	3(100)	4.5(100)
Dairy development	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	3(100)
Grand Total	**23.1**	**1.3**	**54.7**	**21.3**	**14.6**	**28.4**	**7.7**	**49**	**247(100)**	**1908.1(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure; INM: Integrated nutrient management
Figures in the parenthesis are percentage to the respective total

Table 5.3.3: Sector-Wise Allocation and Expenditure by their Status of the Projects

(Rs. Crore)

Sectors	In progress/ ongoing		Completed/Substantially completed		Abandoned/ not implemented	
	No.	**Exp.**	**No.**	**Exp.**	**No.**	**Exp.**
Innovative programmes	4	4.0	12	393.8	0	0
Agriculture mechanisation	5	31.8	10	307.4	0	0
Horticulture	20	63.8	22	141.7	0	0
Research	41	56.6	27	101.0	0	0
Animal husbandry	15	32.7	28	108.6	0	0
Seed	5	7.0	8	127.5	0	0
Marketing & PHM	5	7.4	18	107.2	0	0
Crop development	1	0.0	8	100.7	0	0
Fisheries	2	15.9	3	52.9	0	0
Micro/minor irrigation	0	0	2	55.0	0	0
Organic farming / bio fertiliser	2	4.7	5	42.0	0	0
Extension	4	14.5	7	30.7	0	0
Natural Resource Management	3	18.2	2	22.7	0	0
Non farm activities	3	5.5	7	23.1	1	0
Sericulture	7	7.3	1	6.0	0	0
Fertilisers & INM	2	3.0	2	3.0	0	0
Information Technology	3	0.0	1	5.0	0	0
IPM	2	0.2	2	4.2	0	0
Dairy development	0	0	1	3.0	0	0
Grand Total	**124**	**272.5**	**166**	**1635.5**	**1**	**0**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: INM: Integrated nutrient management and PHM: Post harvest management

Table 5.3.4: Sector and Sub-Sector Wise Classification by Nature of the Project

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		National flagship project	Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Infra structure	Non infra structure	
Innovative programmes/ training/ capacity building/ others	**1.2**	**97.8**	**1.0**	**0.0**	**0.0**	**2.2(8.7)**	**97.9(389.2)**	**100(397.9)**
Innovative programmes	0.7	99.3	0.0	0.0	0.0	0.7(2.7)	99.4(385.2)	100(387.9)
Others (innovative programmes, training & others)	20.0	40.0	40.0	0.0	0.0	60(6)	40(4)	100(10)
Agriculture mechanisation	**0.1**	**98.2**	**0.0**	**1.6**	**0.0**	**0.2(0.5)**	**99.9(338.7)**	**100(339.2)**
Machines and equipment assistance	0.0	98.4	0.0	1.6	0.0	0(0)	100(336.7)	100(336.7)
Others (agri. Mechanisation)	19.9	80.1	0.0	0.0	0.0	19.9(0.5)	80.2(2.1)	100(2.6)
Horticulture	**0.3**	**72.8**	**1.2**	**25.7**	**0.0**	**1.5(3.1)**	**98.6(202.5)**	**100(205.5)**
Area expansion	0.0	100.0	0.0	0.0	0.0	0(0)	100(15.5)	100(15.5)
Development of horticulture farms/ facilities	0.0	71.8	0.0	28.2	0.0	0(0)	100(72.9)	100(72.9)
Floriculture	34.6	65.4	0.0	0.0	0.0	34.7(0.6)	65.4(1)	100(1.6)
Fruits	0.0	18.5	23.4	58.1	0.0	23.5(2.6)	76.6(8.3)	100(10.9)
Others (horticulture)	0.0	56.8	0.0	43.2	0.0	0(0)	100(56.7)	100(56.7)
Post harvest management	0.0	77.8	0.0	22.2	0.0	0(0)	100(6.8)	100(6.8)
Tissue culture	0.0	100.0	0.0	0.0	0.0	0(0)	100(1)	100(1)
Vegetable	0.0	100.0	0.0	0.0	0.0	0(0)	100(40.4)	100(40.4)
Research (agri/horti/animal husbandry/ etc.)	**47.6**	**31.1**	**11.4**	**9.0**	**1.0**	**60(94.5)**	**40.1(63.2)**	**100(157.6)**
Agri facility	90.5	0.7	0.0	2.2	6.6	97.2(22)	2.9(0.7)	100(22.7)
Agri research project	36.2	63.6	0.0	0.2	0.0	36.2(27)	63.9(47.5)	100(74.5)
Agri research/ teaching facility (infrastructure)	59.8	0.0	39.1	1.1	0.0	99(45.6)	1.1(0.5)	100(46.1)
Others (research-agri, horti& animal husbandry)	0.0	10.1	0.0	89.9	0.0	0(0)	100(14.5)	100(14.5)
Animal husbandry	**25.5**	**49.1**	**16.9**	**8.5**	**0.0**	**42.5(60)**	**57.6(81.4)**	**100(141.4)**
Animal health	36.0	18.6	24.4	20.9	0.0	60.5(34.7)	39.6(22.7)	100(57.4)
Breed improvement	88.8	11.2	0.0	0.0	0.0	88.8(9.5)	11.3(1.2)	100(10.7)
Extension and training	0.0	100.0	0.0	0.0	0.0	0(0)	100(16.3)	100(16.3)
Feed and fodder	0.0	100.0	0.0	0.0	0.0	0(0)	100(27)	100(27)
Infrastructure	61.5	38.5	0.0	0.0	0.0	61.6(2)	38.5(1.3)	100(3.3)
Others (animal husbandry)	36.6	37.5	25.9	0.0	0.0	62.5(6.7)	37.6(4)	100(10.7)
Poultry	0.0	55.7	44.3	0.0	0.0	44.4(7.2)	55.7(9)	100(16.2)

Seed	**28.7**	**70.5**	**0.0**	**0.7**	**0.0**	**28.8(38.7)**	**71.3(96)**	**100(134.6)**
Seed certification	0.0	80.0	0.0	20.0	0.0	0(0)	100(2.5)	100(2.5)
Seed farm	0.0	100.0	0.0	0.0	0.0	0(0)	100(7.4)	100(7.4)
Seed processing centers and storage	70.6	29.4	0.0	0.0	0.0	70.6(24)	29.5(10)	100(34)
Seed production	16.1	83.3	0.0	0.6	0.0	16.2(14.7)	83.9(76.1)	100(90.7)
Marketing and PHM	**20.0**	**72.1**	**0.2**	**7.8**	**0.0**	**20.2(23.2)**	**79.9(91.5)**	**100(114.6)**
Cold storages and cold chains	0.0	100.0	0.0	0.0	0.0	0(0)	100(1)	100(1)
Godowns and warehouses	100.0	0.0	0.0	0.0	0.0	100(18)	0(0)	100(18)
Others (marketing &phm)	1.7	85.4	0.0	13.0	0.0	1.7(1.1)	98.4(64.5)	100(65.6)
Setting up/ strengthening of market infrastructure	12.6	85.3	0.8	1.3	0.0	13.4(4.1)	86.7(26.1)	100(30.1)
Crop development	**1.1**	**98.4**	**0.5**	**0.0**	**0.0**	**1.7(1.7)**	**98.4(99.1)**	**100(100.8)**
Coarse cereals	0.0	100.0	0.0	0.0	0.0	0(0)	100(26)	100(26)
Oilseeds and pulses	0.1	99.2	0.8	0.0	0.0	0.9(0.6)	99.2(63.4)	100(64)
Others (crop development)	10.1	89.9	0.0	0.0	0.0	10.2(1.1)	89.9(9.8)	100(10.9)
Fisheries	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(68.8)**	**100(68.8)**
Farmers fish ponds/ assistance including training	0.0	100.0	0.0	0.0	0.0	0(0)	100(18.7)	100(18.7)
Infrastructure/ ponds of fisheries/ dept/ agency	0.0	100.0	0.0	0.0	0.0	0(0)	100(16)	100(16)
Others (fisheries)	0.0	100.0	0.0	0.0	0.0	0(0)	100(34.2)	100(34.2)
Micro/minor irrigation	**18.2**	**0.0**	**81.8**	**0.0**	**0.0**	**100(55)**	**0(0)**	**100(55)**
Diggies	0.0	0.0	100.0	0.0	0.0	100(45)	0(0)	100(45)
Farm ponds	100.0	0.0	0.0	0.0	0.0	100(10)	0(0)	100(10)
Organic farming / bio fertiliser	**0.0**	**80.7**	**3.2**	**16.1**	**0.0**	**3.3(1.5)**	**96.8(45.3)**	**100(46.8)**
Others (organic farming & bio-fertilizer)	0.0	0.0	0.0	100.0	0.0	0(0)	100(7)	100(7)
Promotion of organic farming	0.0	90.8	6.9	2.3	0.0	7(1.5)	93.1(20.3)	100(21.8)
Vermi composting	0.0	100.0	0.0	0.0	0.0	0(0)	100(18)	100(18)
Extension	**7.9**	**81.0**	**0.0**	**11.1**	**0.0**	**7.9(3.6)**	**92.2(41.6)**	**100(45.2)**
Kvks / knowledge centres / dissemination	80.0	20.0	0.0	0.0	0.0	80.1(3.6)	20(0.9)	100(4.5)
New approaches to extension	0.0	81.9	0.0	18.1	0.0	0(0)	100(27.7)	100(27.7)
Others (extension)	0.0	100.0	0.0	0.0	0.0	0(0)	100(13)	100(13)
Natural Resource Management	**2.3**	**97.7**	**0.0**	**0.0**	**0.0**	**2.3(1)**	**97.8(40)**	**100(40.9)**
Land reclamation	100.0	0.0	0.0	0.0	0.0	100(1)	0(0)	100(1)
Water conservation structures and watershed dev	0.0	100.0	0.0	0.0	0.0	0(0)	100(40)	100(40)
Non Farm Activities	**0.0**	**89.5**	**0.0**	**10.5**	**0.0**	**0(0)**	**100(28.6)**	**100(28.6)**
Others (NFA)	0.0	100.0	0.0	0.0	0.0	0(0)	100(9.5)	100(9.5)
Post harvest processing facilities	0.0	84.3	0.0	15.7	0.0	0(0)	100(19.2)	100(19.2)

Sericulture	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(13.3)**	**100(13.3)**
Cocoon production	0.0	100.0	0.0	0.0	0.0	0(0)	100(6.5)	100(6.5)
Others (sericulture)	0.0	100.0	0.0	0.0	0.0	0(0)	100(6.9)	100(6.9)
Fertilisers & INM	**50.0**	**50.0**	**0.0**	**0.0**	**0.0**	**50(3)**	**50(3)**	**100(6)**
Other labs	0.0	100.0	0.0	0.0	0.0	0(0)	100(1)	100(1)
Soil health cards and soil testing	100.0	0.0	0.0	0.0	0.0	100(3)	0(0)	100(3)
Soil testing lab	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Information technology	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(5)**	**100(5)**
Development of it facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(5)	100(5)
Integrated pest management	**4.6**	**0.0**	**95.4**	**0.0**	**0.0**	**100(4.5)**	**0(0)**	**100(4.5)**
Pest surveillance	100.0	0.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Promotion of ipm	0.0	0.0	100.0	0.0	0.0	100(4.3)	0(0)	100(4.3)
Dairy development	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(3)**	**100(3)**
Dairy units to farmers	0.0	100.0	0.0	0.0	0.0	0(0)	100(3)	100(3)
Grand Total	**10.3**	**78.6**	**5.2**	**5.8**	**0.1**	**15.6(298.6)**	**84.4(1609.6)**	**100(1908.1)**

Source*:* http://rkvy.nic.in/ as on April, 2013

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crores.

Table 5.3.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004 05 prices)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. Crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expd. to Agri. expen.
2002-03	1398	26	1424	15906	9.0	4.9	
2003-04*	1870	2495	4365	17428	25.0	17.3	
2004-05	2279	3029	5307	18771	28.3	17.0	
2005-06	2900	3148	6048	21118	28.6	17.6	
2006-07	3064	3700	6764	26397	25.6	20.3	
10th Plan	**11510**	**12398**	**23908**	**99620**	**23**	**15**	
2007-08	4045	2969	7013	27731	25.3	18.7	
2008-09	2836	2383	5219	28674	18.2	13.6	
2009-10	3367	2938	6305	32235	19.6	15.8	
2010-11	3494	3249	6743	33322	20.2	14.6	**4.1**
2011-12*	4233	3503	7736	35151	22.0	17.0	
11th Plan	**17974**	**15042**	**33016**	**157114**	**21**	**16**	
% change over 10th plan	**56.2**	**21.3**	**38.1**	**57.7**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes irrigation and flood control

Budgetary expenditure is accounts only Developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 5.3.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	2009.1 (8.2)	5939.1 (12.9)	195.6
2	Soil and Water Conservation	815 (3.4)	956.5 (2.1)	17.4
3	Animal Husbandry	828.3 (3.4)	2034.2 (4.5)	145.6
4	Dairy Development	30.9 (0.2)	1081.9 (2.4)	3411.4
5	Fisheries	173 (0.8)	448.2 (1)	159.1
6	Forestry and Wild Life	1420.4 (5.8)	3732.8 (8.1)	162.8
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	2546.9 (10.4)	4465.5 (9.7)	75.3
9	Agricultural Research and Education	572.9 (2.4)	1151.6 (2.5)	101.0
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	2404.7 (9.8)	3454.8 (7.5)	43.7
12	Other Agricultural Programmes	0 (0)	0 (0)	0.0
13	Major and Medium Irrigation	330.3 (1.4)	680.4 (1.5)	106.1
14	Minor Irrigation	556.3 (2.3)	703.7 (1.6)	26.5
15	Flood Control and Drainage	2.3 (0.1)	1.7 (0.1)	-25.4
16	Others	12904.1 (52.5)	21496.5 (46.6)	66.6
	Total	**24593.7 (100)**	**46146.5 (100)**	**87.6**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others

Figures in the parenthesis are percentage to the respective total

Table 5.3.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin at Constant 2004-05 Prices

(Per cent)

Year	Agriculture and Allied (%)	Industry (%)	Services (%)
1999-00	28.1	27.0	43.8
2000-01	25.8	27.3	46.0
2001-02	22.3	29.1	48.2
2002-03	19.7	30.7	49.5
2003-04	16.6	31.5	52.2
2004-05	18.7	30.3	51.0
2005-06	18.6	29.7	51.7
2006-07	16.4	31.6	52.0
2007-08	16.4	31.1	52.5
2008-09	15.7	30.5	53.8
2009-10	16.1	29.7	54.2
2010-11	17.0	29.5	53.5
2011-12	15.9	28.4	55.7
2012-13	15.3	27.7	57.0

Source: CSO, MOSPI, 2013.

Table 5.3.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-7.5	4.5	98	115	117.2	29402
2003-04	-12.8	3.5	98	115	116.3	25611
2004-05	23.7	9.9	105	128	122.0	29707
2005-06	9.9	10.5	105	130	124.0	32624
2006-07	-2.8	10.0	101	124	123.1	32964
10th Plan Average	**2.1**	**7.7**	**102**	**123**	**120.5**	**30061**
2007-08	12.4	12.6	104	129	123.7	35926
2008-09	2.3	7.1	102	124	121.6	37624
2009-10	4.1	1.3	104	129	123.7	38290
2010-11	16.2	10.2	105	131	124.1	43979
2011-12	-1.9	4.9	105	131	124.1	43123
11th Plan Average	**6.6**	**7.2**	**104**	**129**	**123.5**	**39788**

Source: Directorate of Economics and Statistics, GOI
Note:*land productivity = agricultural GSDP/ha of NSA

Table 5.3.9: Trend in Inputs Use in Karnataka

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	Net sown area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	Fertiliser consumption (Kg/ha of GCA)
2002-03	25	28	25	116	25	91
2003-04	24	27	24	113	24	79
2004-05	28	33	27	118	26	100
2005-06	30	36	28	122	28	117
2006-07	29	36	29	122	29	114
10th Plan Average	**27**	**32**	**27**	**118**	**26**	**100**
2007-08	31	38	30	121	29	117
2008-09	32	39	32	122	32	142
2009-10	34	41	33	121	32	160
2010-11	35	43	33	123	33	164
2011-12	35	43	33	123	33	181
11th Plan Average	**33**	**41**	**32**	**122**	**32**	**153**

Source: Directorate of Economics and Statistics, GOI

Note: Column 4 = Net irrigated area /Net sown area*100

Column 6= Gross irrigated area /Gross sown area*100

Table 5.3.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	0.7	8.3	5.2	0.4	3.0	2.6
Wheat	0.8	8.2	6.2	-3.3	0.8	3.9
Jowar	-4.5	6.3	11.1	-4.2	-0.3	4.1
Bajra	15.2	21.6	7.6	-3.7	25.3	26.5
Maize	11.5	19.7	4.8	7.3	10.3	3.2
Ragi	-6.1	0.9	3.8	3.7	14.4	7.9
Small Millets	-9.1	-9.1	0.1	-9.5	-9.6	-0.2
Coarse Cereals	-0.9	7.8	7.6	0.6	8.3	7.2
Total Cereals	-0.6	7.2	6.1	0.3	5.9	5.3
Gram	8.8	5.0	0.3	5.8	11.1	5.2
Arhar/Tur	4.4	21.3	15.3	7.3	16.4	3.8
Other Pulses	6.0	-2.6	-3.9	-22.0	-9.1	-7.5
Total Pulses	5.2	3.8	-0.2	0.4	9.2	7.5
Total Food grains	0.8	6.9	5.0	0.2	6.1	5.6
Groundnut	-1.0	-1.9	-3.6	-1.5	14.8	12.7
Sesamum	8.6	24.9	13.1	-2.4	-2.2	0.3
Rapeseed & Mustard	-7.3	-4.0	1.3	1.0	10.0	7.0
Linseed	-8.7	28.4	30.9	-4.8	-9.0	-5.9
Castor	0.1	4.1	3.4	-20.5	-17.5	-16.7
Safflower	-2.0	-1.0	3.6	-7.1	-10.1	-2.4
Niger seed	-4.9	-5.7	-0.7	-4.2	9.3	17.0
Sunflower	18.0	20.3	2.0	-19.0	-16.1	8.9
Soya bean	26.7	26.4	1.2	9.4	16.7	12.7
Total Oilseeds	7.1	7.0	-1.5	-9.5	-0.1	11.0
Cotton	-4.0	16.9	12.7	8.3	15.5	-9.8
Mesta	-17.4	-19.3	-6.0	10.0	0.0	-22.8
Total Fibers	-4.3	16.1	12.6	-12.0	-4.6	-13.2
Sugarcane	0.5	4.3	2.7	6.6	7.8	0.6

Source: Directorate of Economics and Statistics, GOI

Table 5.3.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	-5.4	-0.2	-1.7	6.7
2003-04	-15.0	-0.2	-13.3	-3.5
2004-05	1.6	2.1	2.6	-2.3
2005-06	2.7	1.0	3.6	18.5
2006-07	2.5	7.0	6.3	-1.7
10th plan	**-2.7**	**1.9**	**-0.5**	**3.5**
2007-08	2.9	2.8	3.5	1.8
2008-09	6.9	4.6	17.4	21.6
2009-10	6.3	3.5	22.8	16.1
2010-11	6.1	4.2	5.4	25.4
2011-12*	-	-	-	3.8
11th plan	**5.5**	**3.8**	**12.3**	**13.7**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

5.4 KERALA

5.4.1. Background Information

The RKVY programme was implemented in 2007 in India to combat the overall decline in Indian agriculture throughout the 1990's, where overall crop output had fallen to 2.2 per cent growth (Subramanyan and Sekhar, 2003). Similarly, this was true in Kerala and RKVY projects in the state are designed to increase the agriculture growth rate to a target of 4 per cent. In order to understand whether RKVY initiatives in Kerala have been successful, it is important to analyze the reasons for such a precipitous decrease in the growth in the agriculture.

Kerala is unique amongst Indian states due to the changing cropping pattern that started as decline the productivity of traditional cash crops (such as pepper) during the 1990's. There has been a shift to less labour intensive crops (in part due to increasing labour costs) (Nair and Menon, 2006), but these new crops are more skill intensive (like pineapple). The lack of technical expertise to grow these new cash crops also necessitates the intensive use of more expensive inputs such as chemical fertilizers (which negatively affects long term soil quality). Shifts from previous cropping patterns have also had effects on the ability for markets to store new agriculture products and value added products (Jeromi, 2007). There are also problems with water availability due competition between traditional cash crops and new crops being produced in Kerala. This intension is further compounded due to the lack of new high yield plants amongst traditional cash crops in the State. Based on these conditions, three major problems seem to lack of expertise with new crops and production methods, a lack of market access and market's ability to absorb new products and general water scarcity given the diversification of agriculture production in the State.

5.4.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors, which is presented in Table 5.4.1. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector during the 11th FYP. The sectors in the tables are arranged in descending order considering expenditure. In the present study we shall focus our concentration on the expenditure actually incurred considering its importance over the allocation. Specifically, these are the projects which have contributed significantly for achieving the targeted agricultural growth rate in the State. With respect to expenditure across sectors, the 5 major sectors (crop development, animal husbandry, fisheries, horticulture, and research) have contributed 77.5 per cent of the total expenditure and the remaining 15 minor sectors utilized only 22.5 per cent of the total expenditure in the State (Fig.5.4).

The ratio of expenditure to allocation point out whether there was any diversion taking place in the priorities set initially as well to see the absorption capacity of funds in relation to allocation. By looking at the ratio of expenditure to allocation of funds provided by the RKVY project, it is possible to discern which sectors held the highest priority of the State. In order to facilitate the cardinal ranking of sectors based on the State's preference, four distinct ratio ranges were constructed. For Kerala, these ranges are (0.3 - 0.4), (0.4 - 0.6), (0.6 - 0.8) and (0.8 or greater). Sectors within the higher brackets (0.6 - 0.8) and (0.8 or greater) generally had close to the correct allocation of funds to expenditure while those in the lower brackets (0.3 - 0.4) and (0.4 - 0.6) had little expenditure based on their allocation, suggesting that perhaps the allocation requested for those sectors was incorrect. It is expected that sector projects which had most of their projects funded with very little excess RKVY expenditure available are sectors in which the State had a strong interest in having RKVY projects succeed and thus grow those relevant sectors.

Based on the above criteria, it was found that 14 sectors had relatively high expenditure to allocation ratios indicating that these 14 sectors had relatively correct allocation for the RKVY projects in those sectors. Furthermore, these 14 sectors include the five major sectors in Kerala (crop development, animal husbandry, fisheries, horticulture and research). Conversely, six sectors were found to fall in the (0.3 - 0.4) and (0.4 - 0.6) ratio brackets, suggesting that perhaps these sectors were allocated too much money for prospective RKVY projects. Further it is evident from the table that overall expenditure-allocation ratio was 0.6 in Kerala meaning that out of total allocated amount under RKVY only 60 per cent was actually spent.

In general it is possible to acknowledge that the funds provided by RKVY to the State have been broadly spent as allocated to the various State projects. In terms of the 5 major sectors, crop development, fisheries and horticulture were perhaps of a lesser priority than other two major sectors due to those sectors having lower allocation to expenditure ratios. That being said considering how high all the major sectors are in terms of allocation to expenditure ratios; it is hard to conclusively say that some of these sectors did not have the correct amount of funds properly allocated to them.

Further expenditure per project was incurred highest in the agriculture mechanization sector with Rs.1.5 crores and lowest was in the non farm activities and sericulture sector with Rs. 0.1 crore. Interestingly, expenditure per project of a few minor sectors (agriculture mechanization) was found to be higher when compared with all major sectors.

Spending through RKVY on various projects in the agriculture and allied sectors can have positive externalities in both the short and long run. In case of Kerala, high investment sectors like animal husbandry can create virtuous cycles in the agricultural sectors. For example, there

have been many RKVY projects in Kerala devoted to the growth of livestock. Animal by products can then be harnessed by livestock producers to reduce costs in terms of fertilizer (natural manure) and increase soil quality (due to a lack of reliance on chemical fertilizers which can degrade essential soil nutrients). These positive externalities are tangible in quantitative terms that are not captured by the RKVY project evaluation (i.e. the value of manure/other use animal by-product on the open market). The RKVY projects such as "Identification of hybrids and Aromatic varieties of rice for Kerala" or "Women empowerment through organic cultivation of vegetables" has little tangible short run benefits but contributes significantly to the long run health of the agricultural sector. Additionally, consider the latter project concerning Women Empowerment. While the long run success of this project may be somewhat marginal to the success of agriculture in Kerala.

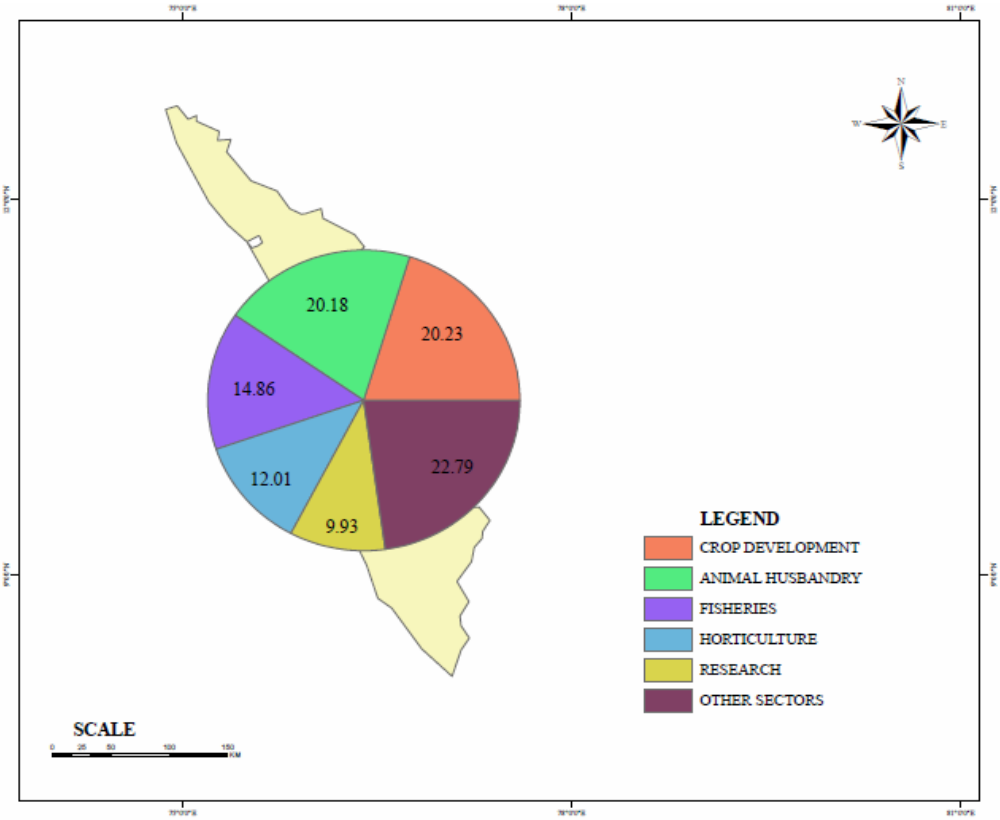


Figure 5.4: Share of Expenditure across Sectors

Note: Other sectors:agriculture mechanization, extension, natural resource management, dairy development, marketing and post harvest management, micro/minor irrigation, seed, nonfarm activities, fertilizers and INM, organic farming / bio fertiliser innovative programmes/ training/ capacity building/ others, integrated pest management, sericulture, information technology cooperatives and cooperation

5.4.3. Sector-Wise Size of the Projects based on the Expenditure

The numbers and magnitude of projects undertaken and expenditure incurred under RKVY during the 11th FYP is presented in Table 5.4.2. The total amount spent under RKVY per project have been divided into Rs. 0-1 crore, Rs. 1-10 crore, Rs. 10-25 crore and above Rs. 25 crore. Out of the total expenditure, 84.7 per cent of the projects incurred only 25.1 per cent of the expenditure at the bottom spending less than Rs. 1 crore amounts on each project. Most of the sectors had projects in this category. On the other extreme, around 14.8 per cent of the projects incurred around 58.7 per cent amount having each project between Rs. 1 to 10 crore, 0.3 per cent of the projects incurred around 6.9 per cent amount having each project between Rs. 10 to 25 crore and only 0.2 per cent of projects spent around 9.3 per cent of the total amount spending above Rs. 25 crore on each project. The sectors falling under the category of above 25 crores includes crop development and agriculture mechanization.

5.4.4. Sector-Wise Expenditure according to Status

The sector-wise status-wise expenditure are presented in the Table 5.4.3. The crop development sector has the highest number of completed and substantially completed projects with an expenditure of Rs.95.2 crore followed by fisheries, horticulture and research with Rs. 75.5, Rs. 55.6 and Rs. 40.1 crores. Cooperatives and cooperation has the least number of completed and substantially completed projects with an expenditure of Rs. 0.01 crores followed by information technology and sericulture with an expenditure of Rs. 0.3, and Rs. 0.9 crores, respectively. Animal husbandry sector has the highest number of approved and ongoing project and projects in progress with an expenditure of Rs. 117.4 crores followed by crop development, agriculture mechanization and research with an expenditure of Rs.33.5, Rs. 34 and Rs. 23.1 crores respectively.Non farm activities, innovative programmes, and organic farming & bio fertilizer have a lower number of approved and ongoing project and projects in progress with an expenditure of Rs.0.1, Rs.0.2 and Rs.0.4 respectively. Sectors like sericulture, integrated pest management information technology and cooperatives and cooperation have no expenditure with respect to approved and ongoing projects and projects in progress. The research sector has the highest number of abandoned/not implemented projects with no expenditure followed by micro/minor irrigation, crop development, horticulture and nonfarm activities sectors respectively.

5.4.5. Sector and Sub-Sector Wise distribution of Project by Nature

Table 5.4.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure of normal, State flagship and national flagship projects in Kerala. Out of total expenditure of Rs.636.3 crores, about 51 per cent was spent on development of infrastructure in agriculture and allied activities and the remaining 49 per cent was spent on non-infrastructure

projects. Infrastructure expenditure of normal, State flagship and national flagship projects accounted for 43.1 per cent, 7.5 per cent and 0.4 per cent of the total expenditure, respectively. Conversely, non-infrastructure expenditure of normal, State flagship and national flagship projects accounted for 48.5 per cent, 0.3 per cent and 0.2 per cent of the total expenditure, respectively.

5.4.6. Major Sector-Wise Stated and Actual Goals

Appendix Table 5.4 presents the summary of expected and actual output, expected and actual outcome of the major sectors of RKVY projects in Kerala. By examining the difference between expected and actual outputs and outcomes the, impact in terms of output and outcome is captured.

5.4.7. Concluding Remarks

In Kerala, the RKVY project is comprised of 20 sectors which include 48 sub sectors. Out of the 20 sectors, 5 sectors accounted for 77.5 per cent of the total expenditure. Among the major sectors, crop development, utilized most of the funds which was followed by animal husbandry, fisheries, horticulture and research in that order. These sectors might have probably played a crucial role for development of agriculture and allied activities in the State. For the State to develop its infrastructure and assets in the agriculture and allied sectors, RKVY had allocated a significant share of funds (51 per cent of the total expenditure). The major focus is given to the expenditure because impact can be depicted clearly on which expenditures are made. The State managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects, a primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

The RKVY project has invested a significant amount of money into the growth and development of the agriculture and allied sectors in Kerala. It should be expected that given this outlay, sectors that provide the most promising levels of growth in the long run have been adequately funded in order to future proof the gains made during the 11th year plan. To understand what is required of sustainable development, the benchmarks used are based on the suggestions made by the Department of the Environment and Climate Change in their State report for Kerala. The reports suggestions for sustainable growth in agriculture considered both farms and fisheries. In terms of farming, the report suggested the introduction of a large variety of crops such as paddy, coffee, tea and rubber which can withstand increasing temperature and water stress. In terms of fisheries,

the biggest concern was with general ecological conservation and programmes concerning the planting of mangroves to ensure healthy fish stocks.

For both concerns raised by the State report, RKVY spending has clearly helped in providing funding for these sectors, particularly in the growth of paddy which attracted a significant share of funds. Other sorts of horticultural programs have also been undertaken many of which focuses on diversifying crop production in Kerala. In terms of Fisheries, many programmes in the sector are based around the restructuring of hatcheries (prawn) and the creation of programmes to monitor the population health of various commercial fish.

Attempts were made to analyze the growth of the agricultural sector before and after RKVY's initiation in Kerala. While it is difficult to accurately separate all the individual effects RKVY has on agriculture in Kerala, there are some interesting trends to discuss. Table 5.4.5 shows that overall State outlay on the 11th Five Year Plan has increased by 40.2 per cent. Agriculture expenditure as a percentage of the State budget has increased from 13.1 per cent in the 10th year plan to 15 per cent in the 11th year plan. Similarly, agricultural expenditure as a percentage of Gross State Domestic Product (GSDP) increased from 6.1 per cent to 10.3 per cent.

Expenditure growth within individual agriculture sectors show that crop husbandry, others and food storage and warehousing had the largest percentage increases from the 10th year plan (Table 5.4.6). However, Table 5.4.7 shows how the agriculture sector's contribution to the total GSDP of Kerala had been decreasing steadily until 2011-12 whereas it increased dramatically to 22 per cent from the previous year's 9.1 per cent contribution. The long term trend of agriculture showed reduced importance to Kerala's GSDP is also seen in the overall growth rate of the agriculture sector in relation to GSPD growth. There had been higher average rates of growth in the agriculture sector (as a share of GSDP) during the 10th year plan (at a growth rate of 0.9 per cent) than the 11th year plan (a growth rate of -1.3 per cent). These figures suggest that while there have been increases in State spending on agriculture, as an overall share of contribution to GSDP, the contribution of agriculture has decreased slightly (Table 5.4.8).

Similarly, there have been no great changes in terms of the average trend of input use in the agriculture sectors (Table 5.4.9). Table 5.4.10 describes average annual growth in area, production and yield across both the 10th year plan and the 11th year plan. Here, it is evident that large gains made in major crops in Kerala during the 10th year plan have not been continued at the same rate during the 11th year plan. Consider the case of Sugarcane where production increased by 35.6 per cent during the 10th year plan which then decreased by -5.7 per cent during the 11th year plan. Likewise, large decreases were seen in pulse production in Kerala where area, production and yield all had respectable increases (12.9 per cent, 13.8 per cent and 5.3 per cent respectively) but then suffered significant decreases in area and production during the 11th year plan (-12.3 per cent and -9.6 per cent). Average Annual growth in production of livestock

products and fishery in Kerala presented in Table 5.4.11 indicates that there is significant increase in milk and meat production only when compared across 10th and 11th FYP. The rate of growth is highest in meat and fish production followed by milk and egg production.

5.4.8 How has RKVY Addressed the Challenges Facing Agriculture in Kerala?

RKVY spending in Kerala has been focused on 5 sectors with major expenditure in sectors like crop development, horticulture and research. Within those sectors there are projects devoted to the problem areas of soil erosionand expertise of new crop development/horticulture. There aren't large expenditures related to water scarcity, it is possible that programs in the crop development and horticulture sectors can help alleviate the water demands of both new crop production and the traditional cash crops being grown in Kerala. Increases in animal husbandry have a positive effect on both the increase of possible storage for agriculture products at market and the introduction of livestock which can in turn provide a means to self sustaining farm inputs (manure and general biomass).

It is unfortunate that there isn't more spending on general irrigation projects and market development. Many RKVY projects in Kerala focus on increasing productivity and updates on previous infrastructure (revamping hatcheries in the Fisheries sector for example). As such there is a risk that without the irrigation systems in place, gains from investment in other sectors will not be effective. Furthermore, there is a risk that productivity gains are also compromised by lack of market access and storage which can make and increases in yields meaningless. It is possible that increase demand for market access and more mature market places opens up areas for potential private investment in order to bridge the gap between valued added/new agriculture markets and what the market place in Kerala can currently support.

TABLES

Table 5.4.1: Sector-Wise Allocation and Expenditure under RKVY during11th FYP

Sectors	No. of project	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure allocation ratio	Expenditure per Project (Rs. in crore)
Crop Development	101 (101)*	210.5 (21.2)	128.6 (20.3)	0.6	1.3
Animal Husbandry	178 (179)	176.7 (17.8)	128.4 (20.2)	0.7	0.7
Fisheries	125 (125)	152.7 (15.4)	94.5 (14.9)	0.6	0.8
Horticulture	93 (93)	135.3 (13.6)	76.3 (12.1)	0.6	0.8
Research	152(152)	76.3 (7.7)	63.2 (10)	0.8	0.4
Agriculture Mechanization	36 (36)	105.9 (10.7)	54.3 (8.6)	0.5	1.5
Extension	46 (47)	29.2 (3)	23.3 (3.7)	0.8	0.5
Natural Resource Management	42 (42)	26.5 (2.7)	21.8 (3.5)	0.8	0.5
Dairy Development	50 (50)	25.5 (2.6)	15.1 (2.4)	0.6	0.3
Marketing & PHM	26 (26)	10.6 (1.1)	8.2 (1.3)	0.8	0.3
Micro/Minor Irrigation	23 (23)	21.0 (2.2)	6.8 (1.1)	0.3	0.3
Seed	13 (13)	5.5 (0.6)	4.2 (0.7)	0.8	0.3
Non Farm Activities	20 (20)	5.3 (0.6)	2.4 (0.4)	0.4	0.1
Fertilisers & INM	3 (3)	1.9 (0.2)	1.9 (0.3)	1.0	0.6
Organic Farming / Bio Fertiliser	12 (12)	3.5 (0.4)	1.8 (0.3)	0.5	0.2
Innovative Programmes	10 (10)	4.7 (0.5)	1.7 (0.3)	0.4	0.2
Integrated Pest Management	5 (5)	1.8 (0.2)	1.7 (0.3)	0.9	0.3
Sericulture	9 (9)	1.2 (0.2)	0.9 (0.2)	0.7	0.1
Information technology	1 (1)	0.3 (0.1)	0.3 (0.1)	1.0	0.3
Cooperatives and Cooperation	2 (2)	0.2 (0.1)	0.0 (0.1)	0.3	0.0
Grand Total	947 (949)	995.3 (100)	636.22 (100)	0.6	0.7

Source: www.rkvy.nic.in as on April, 2013; **Note:** *Figures in the parenthesis indicates no. of projects w.r.t. allocation
INM: Integrated Nutrient Management; PHM-Post Harvest Management; Figures in the parenthesis indicates the percentage to the respective total; if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 5.4.2: Sectors Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Crop development	75.3	12.7	22.8	46.1	1.0	17.2	1.0	24.0	101(100)	128.7(100)
Animal husbandry	83.3	20.7	16.8	79.3	0.0	0.0	0.0	0.0	179(100)	128.5(100)
Fisheries	82.4	29.9	17.6	70.1	0.0	0.0	0.0	0.0	125(100)	94.6(100)
Horticulture	75.3	18.2	22.6	53.3	2.2	28.5	0.0	0.0	93(100)	76.4(100)
Research (agri/horti/animal husbandry etc.)	86.9	25.9	13.2	74.1	0.0	0.0	0.0	0.0	152(100)	63.3(100)
Agriculture mechanisation	80.6	12.7	16.7	34.8	0.0	0.0	2.8	52.5	36(100)	54.4(100)
Extension	91.5	47.5	8.5	52.5	0.0	0.0	0.0	0.0	47(100)	23.4(100)
Natural resource management	90.5	41.6	9.5	58.4	0.0	0.0	0.0	0.0	42(100)	21.9(100)
Dairy development	90.0	53.1	10.0	47.0	0.0	0.0	0.0	0.0	50(100)	15.2(100)
Marketing and post harvest management	92.3	71.4	7.7	28.6	0.0	0.0	0.0	0.0	26(100)	8.3(100)
Micro/minor irrigation	95.7	70.9	4.4	29.1	0.0	0.0	0.0	0.0	23(100)	6.9(100)
Seed	92.3	64.9	7.7	35.2	0.0	0.0	0.0	0.0	13(100)	4.3(100)
Non farm activities	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	20(100)	2.5(100)
Fertilisers and inm	66.7	21.1	33.3	79.0	0.0	0.0	0.0	0.0	3(100)	1.9(100)
Organic farming / bio fertiliser	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	12(100)	1.9(100)
Innovative programmes/ training/ capacity building/ others	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	10(100)	1.8(100)
Integrated pest management	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	5(100)	1.8(100)
Sericulture	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	9(100)	1(100)
Information technology	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1(100)	0.4(100)
Cooperatives and cooperation	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	2(100)	0.1(100)
Grand Total	**84.7**	**25.1**	**14.8**	**58.7**	**0.3**	**6.9**	**0.2**	**9.3**	**949(100)**	**636.3(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure; INM: Integrated nutrient management; Figures in the parenthesis are percentage to the respective total

Table 5.4.3: Sector-Wise Expenditure by their Status of the Projects (2006-07 to 2011-12)

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/ Substantially completed		Abandoned/not implemented	
	No.	Exp.	No.	Exp	No.	Exp.
Crop Development	41	33.5	57	95.2	3	0
Animal Husbandry	129	117.4	49	11.0	0	0
Fisheries	20	19.0	105	75.5	0	0
Horticulture	31	20.8	60	55.6	2	0
Research	32	23.1	108	40.1	12	0
Agriculture Mechanization	13	34.0	23	20.3	0	0
Extension	17	10.5	29	12.9	0	0
NRM	10	10.7	32	11.2	0	0
Dairy Development	13	1.2	37	14.0	0	0
Marketing & PHM	3	0.6	23	7.6	0	0
Micro/Minor Irrigation	7	3.4	12	3.5	4	0
Seed	5	1.7	8	2.5	0	0
Non Farm Activities	6	0.1	13	2.3	1	0
Fertilisers & INM	0	0	3	1.9	0	0
Organic Farming / Bio Fertiliser	2	0.4	10	1.5	0	0
Innovative Programmes	3	0.2	7	1.6	0	0
Integrated Pest Management	0	0	5	1.7	0	0
Sericulture	0	0	9	0.9	0	0
Information Technology	0	0	1	0.3	0	0
Cooperatives And Cooperation	1	0.0	1	0.1	0	0
Grand Total	**333**	**276.7**	**592**	**359.5**	**22**	**0**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: INM: Integrated nutrient management and PHM: Post harvest management

Table 5.4.4: Sector and Sub-Sector Wise Nature of the Project

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		National flagship project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Crop development	**18.9**	**57.1**	**24.0**	**0.0**	**0.0**	**0.0**	**43(55.3)**	**57.1(73.5)**	**100(128.7)**
Areca nut	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.9)	100(0.9)
Banana	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Coconut	12.9	87.1	0.0	0.0	0.0	0.0	12.9(0.9)	87.2(5.7)	100(6.6)
Oilseeds and pulses	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.7)	100(1.7)
Others (crop development)	26.1	73.9	0.0	0.0	0.0	0.0	26.1(6.4)	74(18.1)	100(24.5)
Paddy	18.4	48.5	33.1	0.0	0.0	0.0	51.5(48.1)	48.6(45.3)	100(93.3)
Sugarcane	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.2)	100(1.2)
Vegetable	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Animal husbandry	**31.1**	**68.7**	**0.0**	**0.1**	**0.0**	**0.0**	**31.2(40)**	**68.9(88.5)**	**100(128.5)**
Animal health	1.0	99.0	0.0	0.0	0.0	0.0	1.1(0.2)	99(14)	100(14.2)
Breed improvement	79.7	20.3	0.0	0.0	0.0	0.0	79.8(6)	20.3(1.6)	100(7.5)
Feed and fodder	20.0	80.0	0.0	0.0	0.0	0.0	20.1(12.2)	80(48.7)	100(60.9)
Infrastructure	26.7	73.3	0.0	0.0	0.0	0.0	26.8(3)	73.3(8.2)	100(11.2)
Others (animal husbandry)	51.7	47.8	0.0	0.5	0.0	0.0	51.7(17.3)	48.4(16.2)	100(33.5)
Poultry	98.1	1.9	0.0	0.0	0.0	0.0	98.1(1.5)	2(0.1)	100(1.5)
Fisheries	**32.4**	**61.4**	**2.9**	**0.4**	**1.8**	**1.0**	**37.2(35.2)**	**62.9(59.5)**	**100(94.6)**
Farmers fish ponds/ assistance including training	3.7	89.1	0.0	0.0	0.0	7.2	3.8(0.5)	96.3(11.9)	100(12.3)
Fish marketing	87.2	12.8	0.0	0.0	0.0	0.0	87.2(0.9)	12.9(0.2)	100(1)
Infrastructure/ ponds of fisheries/ dept/ agency	36.1	55.1	0.0	0.0	8.8	0.0	45(8.7)	55.1(10.6)	100(19.2)
Others (fisheries)	36.1	58.7	4.5	0.6	0.0	0.2	40.6(25.2)	59.5(37)	100(62.2)
Horticulture	**34.6**	**51.0**	**13.6**	**0.8**	**0.0**	**0.0**	**48.3(36.9)**	**51.8(39.6)**	**100(76.4)**
Banana	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Coconut	50.7	39.9	9.4	0.0	0.0	0.0	60.1(16.8)	40(11.2)	100(27.9)
Development of horticulture farms/ facilities	31.7	59.1	0.0	9.1	0.0	0.0	31.8(2.1)	68.3(4.5)	100(6.6)
Floriculture	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Fruits	9.9	90.1	0.0	0.0	0.0	0.0	10(0.4)	90.1(3.2)	100(3.6)
Mushroom	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)

Nurseries and green houses	2.6	97.4	0.0	0.0	0.0	0.0	2.6(0.1)	97.5(1.2)	100(1.2)
Others (horticulture)	70.5	29.5	0.0	0.0	0.0	0.0	70.6(3.6)	29.5(1.5)	100(5.1)
Post harvest management	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Vegetable	20.6	53.9	25.5	0.0	0.0	0.0	46.2(14.1)	53.9(16.5)	100(30.5)
Research (agri/horti/animal husbandry /etc.)	**64.3**	**35.7**	**0.0**	**0.0**	**0.0**	**0.0**	**64.4(40.7)**	**35.7(22.6)**	**100(63.3)**
Agri facility	100.0	0.0	0.0	0.0	0.0	0.0	100(0.1)	0(0)	100(0.1)
Agri research project	65.5	34.5	0.0	0.0	0.0	0.0	65.6(39.5)	34.5(20.8)	100(60.3)
Agri research/ teaching facility (infrastructure)	21.2	78.8	0.0	0.0	0.0	0.0	21.2(0.5)	78.9(1.8)	100(2.3)
Others (research-agri, horti& animal husbandry)	100.0	0.0	0.0	0.0	0.0	0.0	100(0.7)	0(0)	100(0.7)
Agriculture mechanisation	**88.4**	**5.3**	**4.9**	**0.0**	**1.4**	**0.0**	**94.8(51.5)**	**5.3(2.9)**	**100(54.4)**
Custom hiring centres	100.0	0.0	0.0	0.0	0.0	0.0	100(31.6)	0(0)	100(31.6)
Machines and equipment assistance	72.2	12.7	11.7	0.0	3.5	0.0	87.4(19.8)	12.7(2.9)	100(22.7)
Others (agri. Mechanisation)	100.0	0.0	0.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Extension	**64.0**	**35.4**	**0.6**	**0.0**	**0.0**	**0.0**	**64.6(15.2)**	**35.5(8.3)**	**100(23.4)**
Infrastructure	78.2	21.8	0.0	0.0	0.0	0.0	78.2(11.7)	21.9(3.3)	100(15)
Kvks / knowledge centres / dissemination	38.5	61.5	0.0	0.0	0.0	0.0	38.5(0.1)	61.6(0.1)	100(0.1)
New approaches to extension	31.9	67.1	1.0	0.0	0.0	0.0	33(2.5)	67.1(5)	100(7.4)
Others (extension)	0.0	0.0	100.0	0.0	0.0	0.0	100(0.1)	0(0)	100(0.1)
Training/ study tour	100.0	0.0	0.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Natural resource management	**90.2**	**8.5**	**1.4**	**0.0**	**0.0**	**0.0**	**91.6(20.1)**	**8.5(1.9)**	**100(21.9)**
Land reclamation	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Others (nrm)	93.7	4.5	1.8	0.0	0.0	0.0	95.5(15.9)	4.6(0.8)	100(16.7)
Water conservation structures and watershed dev	79.7	20.3	0.0	0.0	0.0	0.0	79.7(4.2)	20.4(1.1)	100(5.2)
Dairy development	**74.1**	**25.9**	**0.0**	**0.0**	**0.0**	**0.0**	**74.2(11.3)**	**25.9(4)**	**100(15.2)**
Assistance to dairy unions/ farmers (inc training)	64.8	35.2	0.0	0.0	0.0	0.0	64.9(4.5)	35.2(2.5)	100(7)
Dairy units to farmers	92.5	7.5	0.0	0.0	0.0	0.0	92.6(3)	7.5(0.3)	100(3.2)
Others (dairy development)	98.9	1.1	0.0	0.0	0.0	0.0	99(2.8)	1.1(0.1)	100(2.9)
Promotion of milk collection centres	45.8	54.2	0.0	0.0	0.0	0.0	45.9(1.1)	54.2(1.3)	100(2.3)
Marketing and post harvest management	**58.2**	**30.7**	**0.0**	**11.0**	**0.0**	**0.0**	**58.3(4.8)**	**41.8(3.5)**	**100(8.3)**
Cold storages and cold chains	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(1)	100(1)
Godowns and warehouses	100.0	0.0	0.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Others (marketing &phm)	60.3	39.7	0.0	0.0	0.0	0.0	60.3(3)	39.8(2)	100(5)
Setting up/ strengthening of market infrastructure	62.9	37.1	0.0	0.0	0.0	0.0	63(1)	37.1(0.6)	100(1.6)
Micro/minor irrigation	**93.3**	**6.7**	**0.0**	**0.0**	**0.0**	**0.0**	**93.4(6.5)**	**6.7(0.5)**	**100(6.9)**
Check dams/ water courses bunds	100.0	0.0	0.0	0.0	0.0	0.0	100(2.8)	0(0)	100(2.8)

Farm ponds	100.0	0.0	0.0	0.0	0.0	0.0	100(0.2)	0(0)	100(0.2)
Others (micro & minor irrigation)	100.0	0.0	0.0	0.0	0.0	0.0	100(1.1)	0(0)	100(1.1)
Pump sets (diesel/electric)	84.5	15.5	0.0	0.0	0.0	0.0	84.5(2.5)	15.6(0.5)	100(3)
Seed	**21.7**	**63.6**	**14.7**	**0.0**	**0.0**	**0.0**	**36.5(1.6)**	**63.6(2.7)**	**100(4.3)**
Others (seed)	100.0	0.0	0.0	0.0	0.0	0.0	100(0.8)	0(0)	100(0.8)
Seed distribution	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Seed farm	20.1	0.0	79.9	0.0	0.0	0.0	100(0.8)	0(0)	100(0.8)
Seed processing centers and storage	1.5	98.5	0.0	0.0	0.0	0.0	1.5(0.1)	98.6(2.5)	100(2.5)
Non farm activities	**98.5**	**1.5**	**0.0**	**0.0**	**0.0**	**0.0**	**98.6(2.4)**	**1.5(0.1)**	**100(2.5)**
Others (nfa)	98.1	1.9	0.0	0.0	0.0	0.0	98.1(1.8)	2(0.1)	100(1.9)
Post harvest processing facilities	100.0	0.0	0.0	0.0	0.0	0.0	100(0.6)	0(0)	100(0.6)
Fertilisers and INM	**10.5**	**89.5**	**0.0**	**0.0**	**0.0**	**0.0**	**10.6(0.2)**	**89.5(1.7)**	**100(1.9)**
Fertiliser labs	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Others (fertilizer & INM)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.5)	100(1.5)
Soil testing lab	100.0	0.0	0.0	0.0	0.0	0.0	100(0.2)	0(0)	100(0.2)
Organic farming / bio fertiliser	**53.6**	**46.4**	**0.0**	**0.0**	**0.0**	**0.0**	**53.7(1)**	**46.4(0.9)**	**100(1.9)**
Promotion of bio fertilizer	100.0	0.0	0.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Promotion of organic farming	42.5	57.5	0.0	0.0	0.0	0.0	42.6(0.7)	57.5(0.9)	100(1.5)
Vermi composting	100.0	0.0	0.0	0.0	0.0	0.0	100(0.1)	0(0)	100(0.1)
Innovative programmes/ training/ capacity building/ others	**82.0**	**18.0**	**0.0**	**0.0**	**0.0**	**0.0**	**82(1.5)**	**18.1(0.4)**	**100(1.8)**
Innovative programmes	63.0	37.0	0.0	0.0	0.0	0.0	63.1(0.5)	37(0.3)	100(0.8)
Others (innovative programmes, training & others)	97.0	3.0	0.0	0.0	0.0	0.0	97(1)	3.1(0.1)	100(1)
Integrated pest management	**35.6**	**64.4**	**0.0**	**0.0**	**0.0**	**0.0**	**35.6(0.7)**	**64.5(1.2)**	**100(1.8)**
IPM labs	31.7	68.3	0.0	0.0	0.0	0.0	31.7(0.5)	68.4(1.1)	100(1.6)
Promotion of IPM	74.0	26.0	0.0	0.0	0.0	0.0	74.1(0.2)	26(0.1)	100(0.2)
Sericulture	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(1)**	**100(1)**
Cocoon production	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
Others (sericulture)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Information technology	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100(0.4)**	**0(0)**	**100(0.4)**
Development of it facilities	100.0	0.0	0.0	0.0	0.0	0.0	100(0.4)	0(0)	100(0.4)
Cooperatives and cooperation	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(0.1)**	**100(0.1)**
Other facilities	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Grand total	**43.1**	**48.5**	**7.5**	**0.3**	**0.4**	**0.2**	**51(324.4)**	**49(311.9)**	**100(636.3)**

Source: http://rkvy.nic.in/ as on April, 2013

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 5.4.5: Trend in budgetary expenditure on agriculture and allied sector (at 2004 05 prices)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of agri. Expenditure to RKVY expenditure
2002-03	963	196	1160	9424	12.3	5.8	
2003-04*	1052	236	1289	9663	13.3	6.5	
2004-05	947	208	1156	9826	11.8	5.5	
2005-06	1052	242	1294	9993	12.9	5.9	
2006-07	1205	184	1388	9261	15.0	6.8	
10th Plan	**5219**	**1067**	**6286**	**48167**	**13.1**	**6.1**	
2007-08	1208	252	1461	10580	13.8	7.2	
2008-09	1470	281	1751	11979	14.6	8.5	
2009-10	1572	316	1888	12783	14.8	9.3	**4.6**
2010-11	1703	459	2163	14036	15.4	11.1	
2011-12*	2252	740	2992	18163	16.5	15.6	
11th Plan	**8206**	**2048**	**10254**	**67541**	**15.0**	**10.3**	
% change over 10th plan	**57.2**	**92.0**	**63.1**	**40.2**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes irrigation and flood control

Budgetary expenditure is accounts only Developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 5.4.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sectors

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	1182.9 (18.8)	2741.4 (19.9)	131.8
2	Soil and Water Conservation	166.2 (2.7)	256.4 (1.9)	54.3
3	Animal Husbandry	580 (9.2)	1185 (8.6)	104.3
4	Dairy Development	94.5 (1.5)	261 (1.9)	176.4
5	Fisheries	359.8 (5.7)	988 (7.2)	174.6
6	Forestry and Wild Life	745.5 (11.8)	1138.6 (8.3)	52.7
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	496.6 (7.9)	1842.1 (13.4)	271.0
9	Agricultural Research and Education	356.6 (5.7)	731.4 (5.3)	105.1
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	468.1 (7.5)	1214.7 (8.8)	159.5
12	Other Agricultural Programmes	95.5 (1.6)	48.9 (0.4)	-48.8
13	Major and Medium Irrigation	478.7 (7.6)	850.2 (6.2)	77.6
14	Minor Irrigation	365.1 (5.8)	718.2 (5.2)	96.7
15	Flood Control and Drainage	58.1 (1)	115.2 (0.9)	98.2
16	Others	874.9 (13.9)	1744.6 (12.7)	99.4
	Total	**6321.9 (100)**	**13835.1 (100)**	**118.8**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others

Figures in the parenthesis are percentage to the respective total

Table 5.4.7: Gross State Domestic Product (GSDP) at Factor Cost by industry of origin at Constant 2004-05 prices

(Per cent)

Year	Agriculture and Allied (%)	Industry (%)	Services (%)
1999-00	22.0	20.9	57.0
2000-01	21.5	20.8	57.6
2001-02	20.7	20.6	58.6
2002-03	19.7	20.7	59.6
2003-04	18.3	21.6	60.2
2004-05	17.5	22.9	59.6
2005-06	16.7	22.9	60.4
2006-07	14.5	22.6	62.9
2007-08	13.1	22.4	64.4
2008-09	12.7	21.4	65.9
2009-10	11.5	21.1	67.5
2010-11	10.1	21.0	68.8
2011-12	9.1	20.6	70.3
2012-13	22.0	20.9	57.0

Source: CSO, MOSPI

Table 5.4.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	1.9	7.3	22	30	135.7	91782
2003-04	-1.4	6.2	22	30	134.9	90463
2004-05	5.2	10.0	22	30	139.0	96723
2005-06	5.0	10.1	21	30	140.1	102637
2006-07	-6.3	7.9	21	29	138.9	97609
10th Plan Average	**0.9**	**8.3**	**22**	**30**	**137.7**	**95843**
2007-08	-1.2	8.8	21	28	132.2	96961
2008-09	2.0	5.6	21	27	129.0	98883
2009-10	-1.6	9.2	21	27	128.4	97803
2010-11	-4.6	8.1	21	26	127.8	93650
2011-12	-1.0	9.5	21	26	127.8	92681
11th Plan Average	**-1.3**	**8.2**	**21**	**27**	**129.0**	**95995**

Source: Directorate of Economics and Statistics, GOI
Note:*land productivity = agricultural GSDP/ha of NSA

Table 5.4.9: Trend in Inputs Use in Kerala

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertiliser consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	3.8	4.3	17.3	113.2	14.4	68.1
2003-04	3.8	4.3	17.5	110.7	14.4	64.2
2004-05	3.9	4.6	18.2	115.8	15.2	56.7
2005-06	4.0	4.6	18.8	114.7	15.4	57.0
2006-07	3.9	4.9	18.7	125.0	16.8	70.0
10th Plan Average	**3.9**	**4.5**	**18.1**	**115.9**	**15.2**	**63.2**
2007-08	3.9	4.6	18.6	117.3	16.5	75.4
2008-09	3.9	4.6	18.7	117.4	17.0	94.5
2009-10	3.9	4.6	18.6	117.9	17.0	95.9
2010-11	4.2	4.7	20.0	112.5	17.6	106.2
2011-12	4.2	4.7	20.0	112.5	17.6	112.9
11th Plan Average	**4.0**	**4.6**	**19.2**	**115.5**	**17.2**	**97.0**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column 6= Gross irrigated area /Gross sown area*100

Table 5.4.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	-3.9	-1.5	2.2	-4.5	-1.4	2.9
Ragi	9.4	22.2	8.2	-7.1	9.0	6.6
Total Cereals	-4.3	-1.7	2.5	-4.5	-1.4	2.9
Total Pulses	12.9	13.8	5.3	-12.3	-9.6	-1.8
Total Food grains	-4.3	-1.7	2.5	-4.9	-1.6	3.2
Total Oilseeds	7.7	14.7	10.0	-10.9	0.8	10.6
Sugarcane	18.6	35.6	4.7	-5.5	-5.7	4.2

Source: Directorate of Economics and Statistics, GOI

Table 5.4.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	-11.0	-74.9	-32.7	1.0
2003-04	-12.7	-0.8	-5.1	0.9
2004-05	-4.1	123.1	-6.3	-0.9
2005-06	1.9	-35.6	-0.2	-6.1
2006-07	2.7	35.7	0.3	6.4
10th plan	**-4.6**	**9.5**	**-8.8**	**0.3**
2007-08	6.3	68.4	15.4	-1.5
2008-09	8.3	-3.1	9.1	29.8
2009-10	2.8	-4.8	8.2	-19.3
2010-11	5.4	5.1	3.2	-2.5
2011-12*	-	-	-	1.7
11th plan	**5.7**	**16.4**	**9.0**	**1.6**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

5.5 TAMIL NADU

5.5.1. Background Information

The RKVY programme was implemented in 2007 in India to combat the overall decline in Indian agriculture throughout the 1990's, where overall crop output had fallen to 2.2 per cent growth (Subramanyan and Sekhar, 2003). Similarly, this was true in Tamil Nadu and RKVY projects in the State are designed to increase the agriculture growth rate to a target of 4 per cent. In order to understand whether RKVY initiatives in Tamil Nadu have been successful, it is important to analyze the reasons for such a precipitous decrease in the growth in the agriculture.

Much of the literature concerning agriculture in Tamil Nadu focuses on the need for better water management and access to more developed market facilities. Interestingly, the water management issue does not refer to a lack of irrigation *per se* but rather to how water costs are accounted for and how the costing and distribution of water to land under cultivation. Understanding water management in Tamil Nadu is critical to understand the fortunes of its agricultural sector because of the prevalence of rice. Rice production in Tamil Nadu accounts for 1/3 of the total cropped area which requires large water commitments. As such the negative growth experienced in the rice sub-sector in Tamil Nadu during the 1990's had a severe dampening effect on rest of the rural economy in Tamil Nadu (Ramasamy et al., 2003).

The knock on effect of poor water management in Tamil Nadu is remarkable as it has had negative effects on previous State projects to increase overall crop yields. Many rural farmers are unwilling to adopt new and more efficient rice production methods in part because of the freely available water which is subsidized by Tamil Nadu. As such there is no incentive to change the inputs needed for more efficient, water saving production methods (such as moving towards mechanized planting rather than women's field labour) (Senthilkumar et al., 2008). Due to the water demands required for the current un-optimized level of rice production, potential growth in other crops has similarly been stunted (Senthilkumar et al., 2011). There are also issues concerning pest management which was found to have had destroyed roughly 30 per cent of new hybrid rice strains grown during pervious.

The marketing problem of agriculture in Tamil Nadu is less to do with more access but rather the facility of those markets to actually sell value added agriculture goods. This coupled general needs for greater access to markets for farmers has also stunted possible beneficial changes in cropping patterns. As it stands the marginal benefits of increased market access and agriculture marketing are currently not being exploited efficiently by the agriculture sector of the State (Shilpi and Deininger, 2008).

5.5.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors, which is presented in Table 5.5.1. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector during the 11th FYP. The sectors in the tables are arranged in descending order considering expenditure. In the present study we shall focus our concentration on the expenditure actually incurred considering its importance over the allocation. Specifically, these are the projects which have contributed significantly for achieving the targeted agricultural growth rate in the State. With respect to expenditure across sectors, seven major sectors: crop development, innovative programmes/ training/ capacity building/ others, agriculture mechanization, marketing and post harvest management, horticulture, animal husbandry, dairy development contributed 84.4 per cent of the total expenditure and remaining 13 minor sectors accounted for only 15.6 per cent of the total expenditure in the State (fig.5.5).

The ratio of expenditure to allocation point out whether there was any diversion taking place in the priorities set initially as well to see the absorption capacity of funds in relation to allocation. By looking at the ratio of expenditure to allocation of funds provided by the RKVY project, it is possible to discern which sectors held the highest priority of the State. In order to facilitate the cardinal ranking of sectors based on the State's preference, four distinct ratio ranges were constructed. For the State of Tamil Nadu these ranges are (0.15 - 0.6), (0.6 - .08), (0.8 - 0.85) and (0.85 or greater). Sectors within the highest three brackets (0.6 - 0.8), (0.8 - 0.85) and (0.85 or greater) generally had close to the correct allocation of funds to expenditure, while those projects in the lower brackets (0.15 - 0.6) had relatively little expenditure based on their allocation, suggesting that perhaps the allocation requested for those sectors was incorrect. It is expected that sector/projects which had most of their projects funded with very little excess RKVY expenditure available are sectors in which the State had a strong interest in having RKVY projects succeed.

Based on the above ratios, we find that only four sectors fall with the lowest bracket (cooperatives and cooperation, research, non farm and natural resource management) and therefore have perhaps have been misallocated funds from RVKY. In contrast to those four, all other sectors have had allocation close their expenditure. As compared other South Indian States, Tamil Nadu has been relatively efficient in the allocation of RKVY funding with all major expenditure accurately allocated for. In terms of cardinal ranking of State sector preferences, crop development, innovative programs, agriculture mechanization and marketing all have the highest expenditure to allocation ratios, but it is difficult to draw many conclusions from that fact considering the high ratio of allocation to expenditure that has occurred across most of the agriculture and allied sectors in Tamil Nadu. It is evident from the table that overall expenditure-

allocation ratio was 0.8 in Tamil Nadu meaning that out of total allocated amount under RKVY; Only 80 per cent was actually spent.

Further expenditure per project of a few minor sectors (seed, organic farming/bio fertilizer etc.) were found to be higher when compared with few major sectors (marketing and post harvest management, animal husbandry and dairy development).

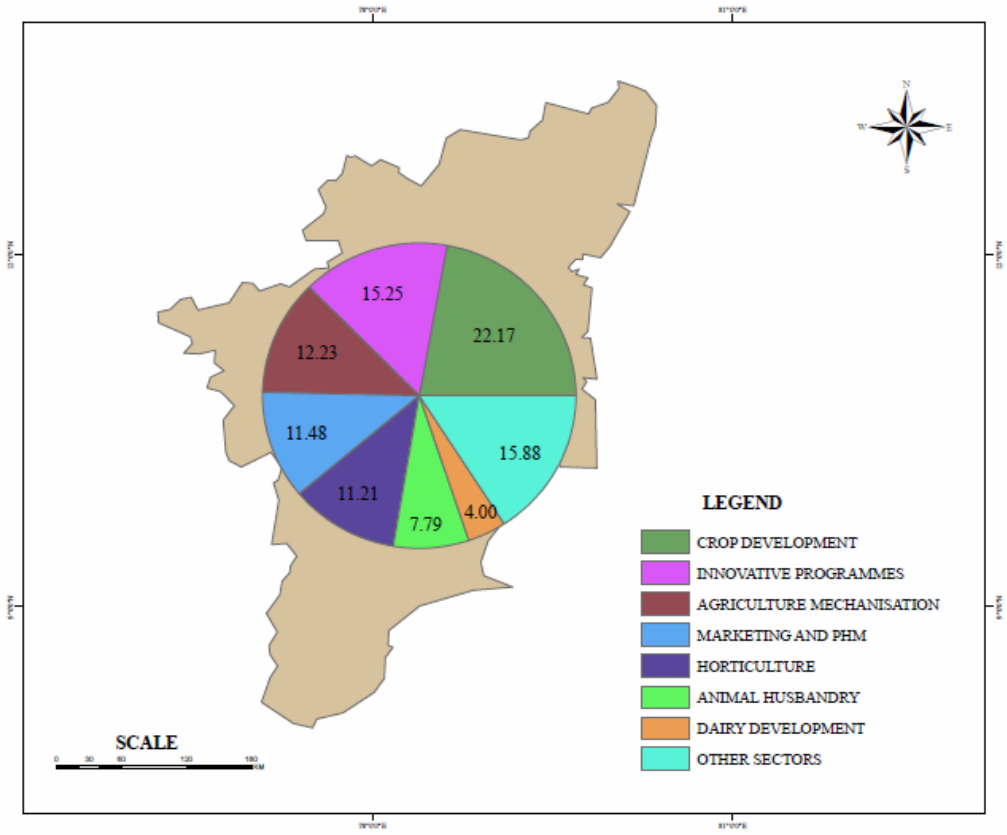


Figure 5.5: Share of expenditure across Sectors

Note: Other sectors include fisheries, seed, micro/minor irrigation, organic farming / bio fertilizer, extension, information technology, fertilizers and INM, cooperatives and cooperation, integrated pest management, research (agri/horti/animal husbandry etc), non farm activities, sericulture and natural resource management.

Spending through RKVY on various projects in the agriculture and allied sectors can have positive externalities not captured while studying the impact of RKVY in Tamil Nadu. An example of this can be found in the heavy spending in the animal husbandry sector which has likely produced quantifiable positive externalities thanks to increased livestock production. Increases in livestock, increases natural fertilizers from animal by-products (such as manure) and has lessened the need for purchasing chemical fertilizer. This in turn increases soil quality as farmers in Tamil Nadu can perhaps reduce their consumption of chemical fertilizers which have

an adverse effect on soil quality. In Tamil Nadu the increase of livestock production has necessitated RKVY funding to go into vaccinates to prevent transmissible disease.

There are also long term externalities in crop development. Unlike other South Indian States, many programs in the crop development sector are based around the increasing production of cotton. As such there is a clear sense that the State is trying to grow other industries (specifically textiles) due to the interlinked supply and demand of cotton and textile production. This implies long term gains manufacturing industries that are otherwise decoupled from agricultural growth.

5.5.3. Sector-Wise Size of the Projects based on the Expenditure

The numbers and magnitude of projects undertaken and expenditure incurred under RKVY during the 11th FYP is presented in Table 5.5.2. The total amount spent under RKVY per project have been divided into Rs. 0-1 crore, Rs. 1-10 crore, Rs. 10-25 crore and above Rs. 25 crore. Out of the total expenditure, 41.2 per cent of the projects incurred only 4.2 per cent of the expenditure at the bottom spending less than Rs. 1 crore amounts on each project. Most of the sectors had projects in this category. On the other extreme, around 2.8 per cent of the projects incurred around 30.6 per cent amount having each project above Rs. 25 crore, Only 48.3 per cent of projects spent around 39.6 per cent of the total amount spending between Rs 1 to Rs. 10 crore on each project and 7.7 per cent of projects spent around 25.6 per cent of the total amount spending between Rs. 10 to Rs. 25 crore. The sectors falling under the category of above Rs. 25 crores includes crop development, innovative programmes, agriculture mechanization, marketing, and PHM and horticulture.

5.5.4. Sector-Wise Expenditure according to Status

The sector-wise status-wise expenditure are presented in the Table 5.5.3. Out of total expenditure incurred, about 40 per cent was spent on projects completed or substantially completed (133 no.) and 60 per cent was spent on projects either approved or projects in progress and ongoing (240 no). Out of all sectors, agriculture mechanization and innovative programmes spent large amount on completed and substantially completed projects. Crop development, marketing and post harvest management and horticulture sector spent more on in progress and ongoing projects. Only non farm activities sector spent least percentage of total expenditure on completed and substantially completed projects.

5.5.5. Sector and Sub-Sector Wise distribution of Project by Nature

Table 5.5.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure of normal, State flagship and national flagship projects in Tamil Nadu. Out of total expenditure of Rs.1334.3 crores, about 31.4 per cent was spent on development of infrastructure

in agriculture and allied activities and the remaining 68.6 per cent was spent on non-infrastructure projects. Infrastructure expenditure of normal and national flagship projects accounted for 25.5 per cent, and 5.9 per cent of the total expenditure. Conversely, non-infrastructure expenditure of normal, State flagship and national flagship project accounted for 62.6 per cent, 0.8 per cent and 5.2 per cent of the total expenditure, respectively.

5.5.6. Major Sector Wise Stated and Actual Goals

Appendix Table 5.5 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Tamil Nadu. By doing so, impact in terms of output and outcome is captured for the available information.

5.5.7. Concluding Remarks

In Tamil Nadu, RKVY project comprises of 20 sectors which includes 66 sub sectors. Out of the 20 sectors, 7 sectors absorbed 84.4 per cent of the expenditure. Among the major sectors, crop development utilized the major funds it was followed by innovative programmes /training /capacity building /others, agriculture mechanization, marketing and post harvest management, horticulture, animal husbandry and dairy development. These sectors might have played a crucial role for development of agriculture and allied activities in the State. In the State to develop the infrastructure and assets in the agriculture and allied sectors, RKVY allocated significant share of funds (31.4 per cent of the total expenditure). The major focus is given to the expenditure because impact can be depicted clearly on which expenditures are made. The State managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects, primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

According to the State Government, the big issues are water management and problems with poor soil quality. There is a strong desire to educate farmers as well so that intensive farming methodologies can help to solve these problems. As such there has been a significant amount of money spent in order to research problems with soil quality and how to increase productivity per hectare of farmland. Interestingly, this is at odds with the increase in livestock production in the State. Livestock takes up far more resources and land than crops which makes the growth of both sectors somewhat incongruous. In any case, there has also been an effort to hand out farming guides to rural farmers and there are several research projects into the arability of poorer soils.

This in tandem with programs of nutrient renewal in previously poor quality soil, so that program will imbue possible rice producing farm land with zinc sulphate to increase productivity.

Attempts were made to analyze the growth of the agricultural sector before and after RKVY's initiation in Tamil Nadu. While it is difficult to accurately separate all the individual effect RKVY has on agriculture in Tamil Nadu, there are some interesting trends to discuss. Table 5.5.5 shows that, overall State outlay on the 11th year plan has increased by 74.3 per cent. Agriculture expenditure as a percentage of the State budget has decreased from 12.7 per cent in the 10th year plan to 12.4 per cent in the 11th year plan. However, agricultural expenditure as a percentage of Gross State Domestic Product (GSDP) increased from 9.9 per cent to 13 per cent. Out of total expenditure in agriculture in the State, RKVY shared 4.8 per cent of the total expenditure.

Food Storage and warehousing had the largest increases within the individual sectors at 2876 per cent growth, but this is mostly due to the low starting expenditure during the 10th year plan as shown in Table 5.5.6. Other large increases in percentage expenditure are found in Fisheries and Other agricultural programmes sectors. Table 5.5.7 depicts the overall percentage contribution of agriculture to Tamil Nadu's GSDP. Here it is clear to see how the agriculture sectors importance to the overall economic growth of the State has been steadily decreasing year on year while the services sector has been picking up the majority of the slack. The industry sector was found to be relatively constant over the years. Table 5.5.8 also corroborates this fact by illustrating the gradual decrease in agricultural growth rate from the 10th year plan to the 11th year plan as both agricultures share of growth in GSDP and overall GSDP. As far as inputs in the agriculture sector are concerned, Table 5.5.9 shows that there have been fairly constant levels of growth in both the 10th year plan and the 11th year plan. However, Table 5.5.10 (which describes major crop production in major crops in Tamil Nadu) shows sharp declines in pulses and castor production from the 10th year plan to the 11th year plan which coincide with relatively large gains in Cotton production. This suggests that much of the constant growth in input factors has been towards more profitable crops such as Cotton. Average Annual growth in production of livestock products and fishery in Tamil Nadu presented in Table 5.5.11 indicates that there is significant increase in milk production only when compared across 10th and 11th FYP.

5.5.8. Has RKVY Addressed the Challenges Facing Agriculture in Tamil Nadu?

RKVY spending in Tamil Nadu was focused on seven major sectors of which four (Crop development, innovative programs, agricultural mechanization and marketing) have the highest expenditure in the State. All of the programs that fall under these sectors are directly tied to the issues of resource conservation (specifically of water) through modern farming techniques and the marketability of agricultural commodities from Tamil Nadu.

Short run expenditure on RKVY projects in the State were mostly based around innovative programs which entail the re-application of modified cultivation, similar to development projects implemented roughly a decade prior. These current programs aim to increase yields while also conserving water usage much like the previous programs in Tamil Nadu. However, it is hard to conclude what lasting benefit these expenditures will have if there isn't widespread adoption amongst farmers. Many studies on rice farming in Tamil Nadu concluded it was the poor pricing of water in Tamil Nadu that made farmers very resistant to change, along with the need for shifting inputs in order for modern cultivation techniques to be sustainable. It maybe that the additional inputs needed are being provided through RKVY funding in agricultural mechanization projects, especially considering the high amount of funding the sector has received.

There have also been large investments in the marketing sector in order to improve access and increase the market capabilities to receive and store produce. Increased access to markets also creates incentives to pursue higher yield farming techniques as well as more commodities can be stored and sold thanks to new market links. There is also a long run expectation to observe changes in cropping patterns which can diversify crop production and conserve natural resources.

An overall perspective on RKVY spending in relation to recent historical challenges to Tamil Nadu agriculture is one of cautious optimism. The programs are targeting the known problem areas (water management and market access), along with increased investment which might alleviate the additional input concerns farmers had when similar projects were implemented. Previous research suggested that the faulty pricing of rural water supply was a major problem and there is no indication that has changed, but enough programs both directly and indirectly related to water conservation are being funded that there is a chance that RKVY expenditure has made a lasting and beneficial impact on Tamil Nadu's agricultural sector.

TABLES

Table 5.5.1: Sector-Wise Allocation and Expenditure under 11th Five Year Plan

Sectors	No. of project (exp)	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure-allocation ratio	Expenditure per Project (Rs. in crore)
Crop development	49 (50)	355.8 (21.1)	295.8 (22.2)	0.8	6.0
Innovative programmes/ training/ capacity building/ others	11 (12)	227 (13.5)	203.5 (15.3)	0.9	18.5
Agriculture mechanization	11 (15)	232.2 (13.8)	163.2 (12.3)	0.7	14.8
Marketing and Post harvest management	33 (33)	166.2 (9.9)	153.2 (11.5)	0.9	4.6
Horticulture	17 (23)	196.9 (11.7)	149.6 (11.3)	0.8	8.8
Animal husbandry	67 (69)	139.6 (8.3)	104 (7.8)	0.7	1.6
Dairy development	35 (40)	76.2 (4.6)	53.4 (4)	0.7	1.5
Fisheries	44 (46)	61.5 (3.7)	47.9 (3.6)	0.8	1.1
Seed	4 (9)	53.8 (3.2)	39.8 (3)	0.7	9.9
Micro/minor irrigation	12 (22)	38.3 (2.3)	30.7 (2.3)	0.8	2.6
Organic farming / bio fertilizer	5 (6)	32.6 (2)	28.2 (2.2)	0.9	5.6
Extension	8 (9)	39.3 (2.4)	24 (1.8)	0.6	3.0
Information technology	8 (9)	21. (1.3)	15.1 (1.2)	0.7	1.9
Fertilizers and INM	4 (6)	14.9 (0.9)	13 (1)	0.9	3.2
Cooperatives and cooperation	6 (8)	15.6 (1)	5.9 (0.5)	0.4	1.0
Integrated pest management	2 (2)	2.1 (0.2)	2.5 (0.2)	1.2	1.2
Research (agri/horti/animal husbandry etc)	7 (9)	5.8 (0.4)	2.3 (0.2)	0.4	0.3
Non farm activities	1 (3)	10.8 (0.7)	2 (0.2)	0.2	2.0
Sericulture	1 (1)	0.5 (0.1)	0.9 (0.1)	1.8	0.9
Natural resource management	0 (1)	0.7 (0.1)	0 (0)	0.0	0.0
Grand total	325 (373)	1690.1 (100)	1334.3 (100)	0.8	4.1

Source: www.rkvy.nic.in as on April, 2013; **Note:** *Figures in the parenthesis indicates no. of projects w.r.t. allocation; INM: Integrated Nutrient Management; PHM-Post Harvest Management; Figures in the parenthesis indicates the percentage to the respective total;; if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 5.5.2: Sectors Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Crop development	26.5	1.9	53.1	42.8	18.4	40.1	2.1	15.2	49(100)	295.8(100)
Innovative programmes/ training/ capacity building/ others	0.0	0.0	45.5	14.7	27.3	20.0	27.3	65.3	11(100)	203.5(100)
Agriculture mechanisation	18.2	0.5	36.4	10.4	18.2	15.3	27.3	73.9	11(100)	163.2(100)
Marketing and post harvest management	33.3	3.3	63.6	41.2	0.0	0.0	3.0	55.5	33(100)	153.2(100)
Horticulture	11.8	0.3	41.2	15.9	41.2	67.1	5.9	16.8	17(100)	149.6(100)
Animal husbandry	49.3	13.4	49.3	74.4	1.5	12.3	0.0	0.0	67(100)	104(100)
Dairy development	51.4	14.8	48.6	85.2	0.0	0.0	0.0	0.0	35(100)	53.4(100)
Fisheries	63.6	22.3	36.4	77.7	0.0	0.0	0.0	0.0	44(100)	47.9(100)
Seed	0.0	0.0	50.0	17.0	50.0	83.1	0.0	0.0	4(100)	39.8(100)
Micro/minor irrigation	50.0	9.9	41.7	52.6	8.3	37.5	0.0	0.0	12(100)	30.7(100)
Organic farming / bio fertiliser	20.0	2.7	80.0	97.4	0.0	0.0	0.0	0.0	5(100)	28.2(100)
Extension	37.5	9.1	62.5	90.9	0.0	0.0	0.0	0.0	8(100)	24(100)
Information technology	50.0	6.1	50.0	93.9	0.0	0.0	0.0	0.0	8(100)	15.1(100)
Fertilisers and INM	50.0	4.8	50.0	95.3	0.0	0.0	0.0	0.0	4(100)	13(100)
Cooperatives and cooperation	66.7	42.1	33.3	57.9	0.0	0.0	0.0	0.0	6(100)	5.9(100)
Integrated pest management	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	2(100)	2.5(100)
Research (agri/horti/animal husbandry etc.)	85.7	48.8	14.3	51.2	0.0	0.0	0.0	0.0	7(100)	2.3(100)
Non farm activities	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	2(100)
Sericulture	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1(100)	0.9(100)
Grand Total	**41.2**	**4.2**	**48.3**	**39.6**	**7.7**	**25.6**	**2.8**	**30.6**	**325(100)**	**1334.3(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure; INM: Integrated nutrient management
Figures in the parenthesis are percentage to the respective total

Table 5.5.3: Sector-Wise Expenditure by their Status of the Projects (2006-07 to 2011-12)

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed	
	No.	Exp.	No.	Exp
Crop Development	35	233.8	15	61.9
Innovative Programmes	7	68.2	5	135.3
Agriculture Mechanization	7	18.6	8	144.5
Marketing & PHM	20	128.4	13	24.7
Horticulture	19	129.7	4	19.8
Animal Husbandry	32	61.7	37	42.3
Dairy Development	24	41.1	16	12.2
Fisheries	28	34.7	18	13.2
Seed	9	39.7	0	0
Micro/Minor Irrigation	17	8.4	5	22.3
Organic Farming / Bio Fertiliser	3	2.2	3	26.0
Extension	5	6.7	4	17.3
Information Technology	6	4.8	3	10.2
Fertilisers & INM	5	5.8	1	7.2
Cooperatives And Cooperation	8	5.9	0	0
Integrated Pest Management	2	2.4	0	0
Research	9	2.3	0	0
Non Farm Activities	2	0.0	1	2.0
Sericulture	1	0.9	0	0
NRM	1	0.0	0	0
Grand Total	240	795.3	133	538.9

Source: http://rkvy.nic.in/ as on April, 2013.

Note: PHM-Post harvest management; INM- Integrated nutrient management

Table 5.5.4: Sector and Sub-Sector Wise Classification by Nature of the Project

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project	National flagship project		Total		Grand Total
	Infra structure	Non infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Crop development	**6.1**	**93.9**	**0.0**	**0.0**	**0.0**	**6.2(18.1)**	**93.9(277.8)**	**100(295.8)**
Coarse cereals	51.0	49.0	0.0	0.0	0.0	51.1(10)	49(9.6)	100(19.6)
Cotton	0.0	100.0	0.0	0.0	0.0	0(0)	100(2.6)	100(2.6)
Oilseeds and pulses	1.5	98.5	0.0	0.0	0.0	1.5(1.8)	98.6(116.4)	100(118.2)
Others (crop development)	3.3	96.7	0.0	0.0	0.0	3.3(1.2)	96.8(35.4)	100(36.6)
Paddy	4.3	95.7	0.0	0.0	0.0	4.4(5.2)	95.7(113.4)	100(118.6)
Sugarcane	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Innovative programmes/ training/ capacity building/ others	**43.4**	**10.6**	**4.7**	**34.0**	**7.3**	**77.5(157.6)**	**22.6(46)**	**100(203.5)**
Innovative programmes	43.4	10.6	4.7	34.0	7.3	77.5(157.6)	22.6(46)	100(203.5)
Agriculture mechanisation	**23.2**	**37.1**	**0.0**	**6.0**	**33.7**	**29.2(47.6)**	**70.9(115.6)**	**100(163.2)**
Machines and equipment assistance	23.2	37.1	0.0	6.0	33.7	29.2(47.6)	70.9(115.6)	100(163.2)
Marketing and post harvest management	**32.2**	**67.8**	**0.0**	**0.0**	**0.0**	**32.2(49.3)**	**67.9(103.9)**	**100(153.2)**
Cold storages and cold chains	86.3	13.7	0.0	0.0	0.0	86.4(23.1)	13.7(3.7)	100(26.8)
Others (marketing &phm)	0.0	100.0	0.0	0.0	0.0	0(0)	100(6.4)	100(6.4)
Setting up/ strengthening of market infrastructure	21.8	78.2	0.0	0.0	0.0	21.9(26.3)	78.2(93.9)	100(120.1)
Horticulture	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(149.6)**	**100(149.6)**
Area expansion	0.0	100.0	0.0	0.0	0.0	0(0)	100(39.1)	100(39.1)
Development of horticulture farms/ facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(20.5)	100(20.5)
Nurseries and green houses	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.4)	100(1.4)
Others (horticulture)	0.0	100.0	0.0	0.0	0.0	0(0)	100(45.7)	100(45.7)
Post harvest management	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
Vegetable	0.0	100.0	0.0	0.0	0.0	0(0)	100(42.7)	100(42.7)
Animal husbandry	**21.4**	**77.6**	**1.0**	**0.0**	**0.0**	**21.4(22.3)**	**78.7(81.8)**	**100(104)**
Animal health	28.2	65.6	6.2	0.0	0.0	28.3(4.8)	71.8(12.1)	100(16.9)
Breed improvement	72.9	27.1	0.0	0.0	0.0	72.9(4.3)	27.2(1.6)	100(5.8)
Extension and training	31.9	68.1	0.0	0.0	0.0	32(3.2)	68.1(6.7)	100(9.9)

Feed and fodder	6.8	93.2	0.0	0.0	0.0	6.9(1.8)	93.2(24.6)	100(26.4)
Infrastructure	14.0	86.0	0.0	0.0	0.0	14(4.7)	86.1(28.8)	100(33.4)
Others (animal husbandry)	9.1	90.9	0.0	0.0	0.0	9.2(0.9)	90.9(8.2)	100(9.1)
Poultry	100.0	0.0	0.0	0.0	0.0	100(2.9)	0(0)	100(2.9)
Dairy development	**21.2**	**78.8**	**0.0**	**0.0**	**0.0**	**21.3(11.4)**	**78.8(42)**	**100(53.4)**
Assistance to dairy unions/ farmers (inc training)	7.8	92.2	0.0	0.0	0.0	7.9(2.5)	92.2(28.6)	100(31)
Dairy units to farmers	100.0	0.0	0.0	0.0	0.0	100(0.7)	0(0)	100(0.7)
Milk processing	11.2	88.8	0.0	0.0	0.0	11.3(0.6)	88.8(4.8)	100(5.4)
Others (dairy development)	78.6	21.4	0.0	0.0	0.0	78.7(6.1)	21.4(1.7)	100(7.7)
Promotion of milk collection centres	18.3	81.7	0.0	0.0	0.0	18.4(1.6)	81.7(7.2)	100(8.8)
Fisheries	**65.4**	**34.6**	**0.0**	**0.0**	**0.0**	**65.4(31.4)**	**34.7(16.6)**	**100(47.9)**
Farmers fish ponds/ assistance including training	49.8	50.2	0.0	0.0	0.0	49.9(3.3)	50.2(3.3)	100(6.5)
Fish marketing	100.0	0.0	0.0	0.0	0.0	100(1.8)	0(0)	100(1.8)
Infrastructure/ ponds of fisheries/ dept/ agency	65.6	34.4	0.0	0.0	0.0	65.7(25.5)	34.4(13.4)	100(38.8)
Others (fisheries)	100.0	0.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Seed	**87.7**	**12.3**	**0.0**	**0.0**	**0.0**	**87.8(34.9)**	**12.3(4.9)**	**100(39.8)**
Seed distribution	100.0	0.0	0.0	0.0	0.0	100(10.8)	0(0)	100(10.8)
Seed farm	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.9)	100(4.9)
Seed production	100.0	0.0	0.0	0.0	0.0	100(24.2)	0(0)	100(24.2)
Micro/minor irrigation	**90.4**	**9.6**	**0.0**	**0.0**	**0.0**	**90.4(27.8)**	**9.7(3)**	**100(30.7)**
Check dams/ water courses bunds	100.0	0.0	0.0	0.0	0.0	100(13.1)	0(0)	100(13.1)
Farm ponds	0.0	100.0	0.0	0.0	0.0	0(0)	100(2.5)	100(2.5)
Percolation tanks/ minor irrigation tanks	100.0	0.0	0.0	0.0	0.0	100(9.4)	0(0)	100(9.4)
Pump sets (diesel/electric)	100.0	0.0	0.0	0.0	0.0	100(5.4)	0(0)	100(5.4)
Sprinkler and drip irrigation	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Organic farming / bio fertiliser	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(28.2)**	**100(28.2)**
Promotion of bio fertilizer	0.0	100.0	0.0	0.0	0.0	0(0)	100(26.7)	100(26.7)
Vermi composting	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.5)	100(1.5)
Extension	**20.6**	**79.4**	**0.0**	**0.0**	**0.0**	**20.7(5)**	**79.4(19.1)**	**100(24)**
Kvks / knowledge centres / dissemination	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
New approaches to extension	0.0	100.0	0.0	0.0	0.0	0(0)	100(16.9)	100(16.9)
Others (extension)	0.0	100.0	0.0	0.0	0.0	0(0)	100(1)	100(1)
Training/ study tour	91.1	8.9	0.0	0.0	0.0	91.2(5)	8.9(0.5)	100(5.5)

Information technology	**66.2**	**33.8**	**0.0**	**0.0**	**0.0**	**66.3(10)**	**33.8(5.1)**	**100(15.1)**
Development of it facilities	55.6	44.4	0.0	0.0	0.0	55.6(6.4)	44.5(5.1)	100(11.5)
Others (it)	100.0	0.0	0.0	0.0	0.0	100(3.6)	0(0)	100(3.6)
Fertilisers and INM	**0.1**	**99.9**	**0.0**	**0.0**	**0.0**	**0.2(0.1)**	**99.9(13)**	**100(13)**
Micro nutrients labs	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Soil health cards and soil testing	0.3	99.7	0.0	0.0	0.0	0.3(0.1)	99.8(5.2)	100(5.2)
Soil testing lab	0.0	100.0	0.0	0.0	0.0	0(0)	100(7.2)	100(7.2)
Cooperatives and cooperation	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(5.9)**	**100(5.9)**
Construction of godowns	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Other facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.8)	100(4.8)
Integrated pest management	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100(2.5)**	**0(0)**	**100(2.5)**
Promotion of IPM	100.0	0.0	0.0	0.0	0.0	100(2.5)	0(0)	100(2.5)
Research (agri/horti/animal husbandry etc.)	**20.3**	**79.7**	**0.0**	**0.0**	**0.0**	**20.4(0.5)**	**79.7(1.9)**	**100(2.3)**
Agri research project	20.2	79.8	0.0	0.0	0.0	20.2(0.5)	79.9(1.9)	100(2.3)
Others (research-agri, horti& animal husbandry)	63.3	36.7	0.0	0.0	0.0	63.3(0.1)	36.8(0.1)	100(0.1)
Non farm activities	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(2)**	**100(2)**
Post harvest processing facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Sericulture	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100(0.9)**	**0(0)**	**100(0.9)**
Others (sericulture)	100.0	0.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Grand total	**25.5**	**62.6**	**0.8**	**5.9**	**5.2**	**31.4(418.6)**	**68.6(915.7)**	**100(1334.3)**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 5.5.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004 05 prices)

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	1765	435	2200	16996	12.9	10.4	
2003-04*	1698	355	2053	17128	12.0	9.9	
2004-05	1758	407	2166	18175	11.9	8.9	
2005-06	1727	429	2156	20344	10.6	7.8	
2006-07	2226	1682	3908	24612	15.9	12.5	
10th Plan	**9175**	**3308**	**12483**	**97256**	**12.7**	**9.9**	
2007-08	2140	1689	3829	26689	14.3	12.8	
2008-09	2565	1633	4199	31997	13.1	14.4	
2009-10	2953	1254	4207	32057	13.1	13.6	**4.8**
2010-11	2659	910	3568	36435	9.8	10.7	
2011-12*	3407	1548	4955	42332	11.7	13.6	
11th Plan	**13724**	**7033**	**20758**	**169510**	**12.4**	**13.0**	
% change over 10th plan	**49.6**	**112.6**	**66.3**	**74.3**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes irrigation and flood control

Budgetary expenditure is accounts only Developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 5.5.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sectors

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	2994.6 (23.8)	7111.7 (26.6)	137.5
2	Soil and Water Conservation	444.7 (3.6)	813.3 (3.1)	82.9
3	Animal Husbandry	660.5 (5.3)	1458.8 (5.5)	120.9
4	Dairy Development	104.9 (0.9)	175.7 (0.7)	67.4
5	Fisheries	286 (2.3)	889.2 (3.4)	211.0
6	Forestry and Wild Life	995.8 (7.9)	1549.8 (5.8)	55.6
7	Plantations	-0.7 (-0.1)	0.1 (0.1)	0.0
8	Food Storage and Warehousing	0.8 (0.1)	22.4 (0.1)	2876.0
9	Agricultural Research and Education	584 (4.7)	1493 (5.6)	155.7
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	2242 (17.8)	4860.9 (18.2)	116.8
12	Other Agricultural Programmes	175.8 (1.4)	466.6 (1.8)	165.5
13	Major and Medium Irrigation	2305.3 (18.3)	3372.5 (12.6)	46.3
14	Minor Irrigation	209.7 (1.7)	327.1 (1.3)	56.0
15	Flood Control and Drainage	65.3 (0.6)	103.6 (0.4)	58.7
16	Others	1559.5 (12.4)	4192.3 (15.7)	168.8
	Total	**12627.6 (100)**	**26836.3 (100)**	**112.5**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others

Figures in the parenthesis are percentage to the respective total

Table 5.5.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin at 2004-05 prices

(Per cent)

Year	Agriculture and Allied (%)	Industry (%)	Services (%)
1999-00	14.9	31.5	53.1
2000-01	14.7	31.9	52.9
2001-02	14.6	29.0	55.8
2002-03	11.4	31.3	57.2
2003-04	10.5	31.6	58.0
2004-05	11.1	31.6	57.2
2005-06	11.1	31.7	57.3
2006-07	10.9	31.2	57.9
2007-08	9.8	30.5	59.7
2008-09	9.1	28.4	62.6
2009-10	8.7	30.9	60.4
2010-11	8.3	31.5	60.2
2011-12	8.4	31.3	60.3
2012-13	7.3	31.7	61.1

Source: CSO, MOSPI, 2013.

Table 5.5.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-20.5	1.8	46	52	113.1	46094
2003-04	-2.4	6.0	47	53	113.4	44027
2004-05	18.0	11.5	51	59	115.5	47796
2005-06	13.3	14.0	52	60	115.0	52616
2006-07	13.2	15.2	51	58	114.0	60953
10th Plan Average	**4.3**	**9.7**	**49**	**57**	**114.2**	**50297**
2007-08	-4.4	6.1	51	58	114.9	59003
2008-09	-2.3	5.5	50	58	115.5	57868
2009-10	6.4	10.8	49	56	113.9	63442
2010-11	7.5	13.1	50	58	116.1	67326
2011-12	9.5	7.4	50	58	116.1	73726
11th Plan Average	**3.3**	**8.6**	**50**	**57**	**115.3**	**64273**

Source: Directorate of Economics and Statistics, GOI

Note:* land productivity = agricultural GSDP/ha of NSA

Table 5.5.9: Trend in Input Use in Tamil Nadu

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertiliser consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	23.1	26.2	50.3	113.5	50.5	114.0
2003-04	21.5	24.8	45.8	115.4	46.6	114.5
2004-05	26.4	30.9	51.7	117.1	52.4	159.1
2005-06	29.2	34.0	55.7	116.3	56.3	183.7
2006-07	28.9	33.1	56.4	114.5	56.6	186.5
10th Plan Average	**25.8**	**29.8**	**52.0**	**115.4**	**52.5**	**151.6**
2007-08	28.6	32.5	56.6	113.5	55.9	185.0
2008-09	29.3	33.9	58.1	115.8	58.3	217.6
2009-10	28.6	32.4	58.5	113.1	58.1	205.8
2010-11	29.1	33.5	58.8	115.0	58.2	220.6
2011-12	29.1	33.5	58.8	115.0	58.2	227.0
11th Plan Average	**29.0**	**33.2**	**58.2**	**114.5**	**57.7**	**211.2**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column 6= Gross irrigated area /Gross sown area*100

Table 5.5.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	0.7	6.3	3.5	-0.1	3.9	4.0
Jowar	-0.5	2.9	4.8	-7.4	-2.4	5.9
Bajra	-7.5	1.0	6.9	-6.5	4.9	12.1
Maize	24.2	61.5	39.1	8.5	21.5	10.6
Ragi	-3.0	1.5	-0.6	-2.6	9.5	12.1
Small Millets	-6.5	11.1	16.4	-7.4	-7.5	-1.0
Coarse Cereals	0.8	17.0	16.5	-1.7	13.3	14.8
Total Cereals	-0.3	6.3	5.3	-0.6	5.5	6.1
Gram	-3.1	-5.1	-2.0	8.1	8.1	0.1
Arhar/Tur	-13.7	-10.0	4.3	5.4	9.2	5.3
Other Pulses	-4.3	7.9	9.7	-16.0	-20.7	-23.4
Total Pulses	-5.0	5.4	8.3	5.1	9.5	5.2
Total Food grains	-1.2	6.2	6.0	0.3	5.6	5.2
Groundnut	-4.0	-0.8	2.0	-5.1	1.5	7.0
Sesamum	-7.2	-7.9	1.0	-1.6	0.0	6.0
Castor	-24.6	-24.0	1.0	-17.0	-17.6	-20.7
Sunflower	33.4	45.9	9.6	-0.1	9.7	2.9
Total Oilseeds	-4.2	-0.5	2.7	-4.9	1.1	6.6
Cotton	-3.6	8.9	8.6	6.3	20.8	-1.8
Total Fibers	-4.4	7.1	8.6	-15.5	0.8	-4.9
Sugarcane	7.4	9.4	0.9	-2.0	-0.6	1.2

Source: Directorate of Economics and Statistics, GOI

Table 5.5.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	-7.3	2.6	-14.3	-9.8
2003-04	2.8	17.1	4.5	8.4
2004-05	0.7	80.9	69.0	-3.1
2005-06	14.4	40.0	-2.7	0.8
2006-07	1.6	84.9	29.3	17.1
10th plan	**2.4**	**45.1**	**17.2**	**2.7**
2007-08	0.5	95.0	4.4	3.1
2008-09	19.1	6.5	5.0	-4.5
2009-10	2.0	9.8	23.1	9.1
2010-11	0.6	-7.2	6.1	5.5
2011-12*	-	-	-	-0.5
11th plan	**5.6**	**26.1**	**9.6**	**2.5**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

6.1 CHHATTISGARH

6.1.1. Background Information

Chhattisgarh, the 26th State of the Indian Union was carved out of Madhya Pradesh in November 2000. Chhattisgarh has a geographical area of 135,190 sq. km, which constitutes 4.11 per cent of the India's geographical area.According to 2011 Population Census, total population of the State was 25 million and it ranked 16th among all the Indian States. The economy of Chhattisgarh is predominantly agrarian based. The State has cultivable land area of 46.77 lakh ha and forest area of 63.53 lakh ha. Net sown area and gross cropped area constituted about 34.74 per cent and 41.95 per cent of total geographical area, respectively. The cropping intensity is estimated at 121 per cent during 2011-12.

Agriculture plays a significant role in the overall growth of the State economy. Chhattisgarh was known as the "rice bowl" of united Madhya Pradesh. After the bifurcation, much emphasis has been given for the development of agriculture in the State of Chhattisgarh. The share of agriculture in GSDP has showed declining trend from 22 per cent in 2002-03 to 18.7 per cent in 2012-13. This is line with the development pattern of the State economy that share of industry and services sectors tend to dominate over time. Notwithstanding, performance of agricultural sector still influences the overall economic growth of the State.

However, agricultural sector in Chhattisgarh continues to suffer from low productivity and low irrigation. There is a great potential to augment agricultural productivity through appropriate technological interventions, which will go a long way in overcoming the backwardness of the economy. RKVY launched in August 2007 has potential to address issues related to low productivity and make appropriate investments to increase growth in agriculture. RKVY was incentivizes the State Governments to accelerate the growth in agricultural sector. States were requested to prepare the comprehensive agricultural plans at the district and State level taking into account the felt needs of the farmers and other stake holders. These meant for facilitating the State Governments to prioritize the developmental activities and take up the investments accordingly to promote growth in agriculture and allied sectors. In addition to State specific problems, RKVY has also provided scope for launching projects for special needs of different States and dry land areas. The present chapter analyses implementation of RKVY in Chhattisgarh at the macro level during the 11th Plan.

6.1.2. Distribution of Allocation and Expenditure under RKVY by Sectors

In Chhattisgarh, 361 projects spreading across 19 sectors have been implemented under RKVY during the 11th Plan. The expenditure on these projects amounted to Rs. 1,538.4 crore (Table

6.1.1). The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture. Although 419 projects were proposed for implementation with the allocation of Rs. 1378.9 crore, only 361 projects were actually implemented. There is considerable gap between allocation and expenditure on different projects implemented across the sectors. Difference between allocation and expenditure may be due to continuation of the certain long terms projects even after the end of the 11th Plan. Nonetheless, only actual expenditure has been taken in to account for the purpose analysis.

It is clear from the Table 6.1.1 and Figure 6.1 that crop development sector has accounted for the highest proportion of total expenditure (39.6 per cent) followed by horticulture (17 per cent) and animal husbandry (7.7 per cent). Other important sectors on which State Government has spent considerable amount under RKVY included fisheries (7.7 per cent), seed (5.9 per cent) and extension (5.6 per cent). These sectors have accounted for about 70 per cent of the total expenditure and hence it can be inferred that the State of Chhattisgarh has given priority for the development of these sectors to promote growth in agriculture. Expenditure on innovative programmes and agriculture mechanization has constituted 3.9 per cent and 2.9 per cent, respectively. Certain sectors such as information technology, dairy development, research and integrated pest management have received low priority under RKVY.

The expenditure-allocation ratio was more than one for the sectors such as fertilizers and INM, and marketing and post harvest management. It might be that actual amount released after probable revision of estimates, was much higher than the allocated amount for getting a ratio of more than one. Further, expenditure-allocation ratio was equal to one for the sectors like non-farm activities, cooperatives and cooperation and information technology. It indicates that these sectors have achieved financial efficiency in spending the allocated amount. For the State as a whole, the overall ratio was 0.8 indicating that out of total allocated amount under RKVY; only 80 percent was actually spent.

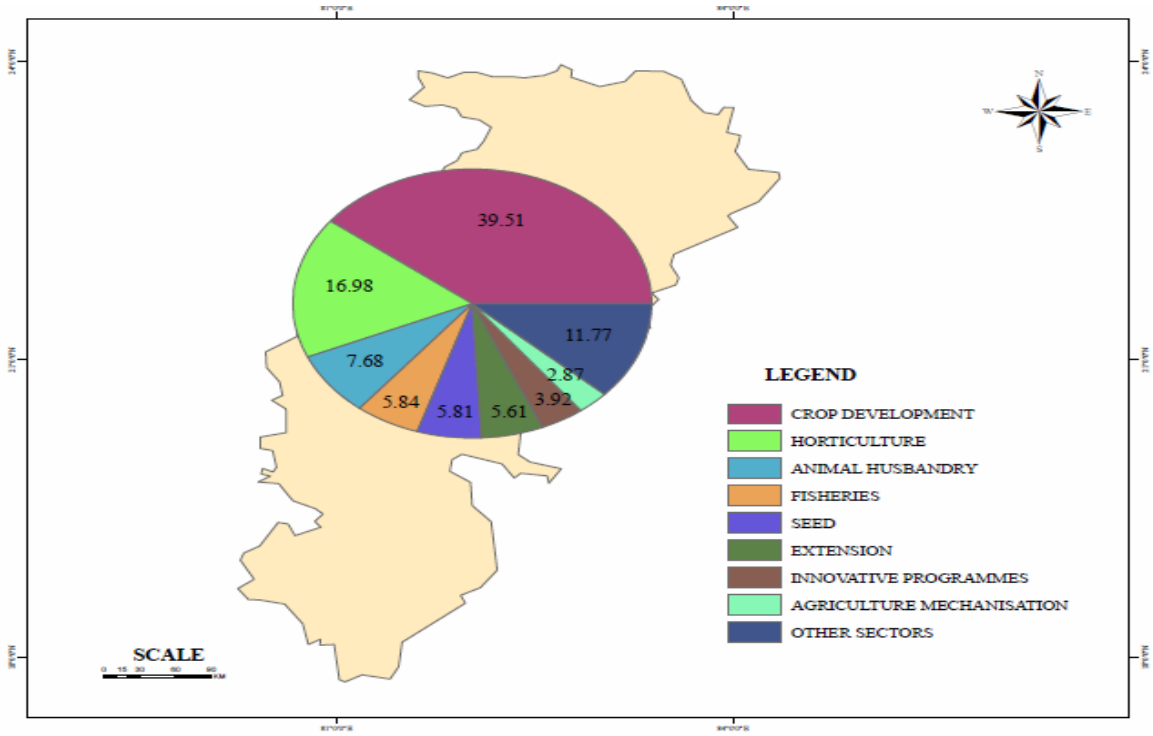


Figure 6.1: Share of Expenditure across Sectors

Note: Minor sectors includes non-farm activities, cooperatives and cooperation, marketing & PHM micro/minor irrigation, organic farming / bio fertilizer, NRM, fertilizers and INM, IPM, research, dairy development, IT

6.1.3. Sector-Wise Size of the Projects based on the Expenditure

Table 6.1.2 presents the distribution of projects and expenditure by size groups. The total amount spent under RKVY has been divided into four categories viz., less than Rs. 1 crore, Rs. 1-10 crore, Rs. 10-25 crore and more than Rs 25 crore. It can be seen that about 46 per cent of the projects accounting for 5.6 per cent of total spending have fallen under the expenditure class of less than one crore rupees. Considering projects up to Rs. 10 crore, total number of projects under this category has constituted about 93 per cent, but they accounted for only 52 per cent of total expenditure. Among sectors, horticulture sector has received the highest priority for spending and about 90 per cent this sector's projects have fallen under the expenditure class of less than Rs. 10 crore. The large sized projects with more than Rs. 25 crore have constituted about one per cent but accounted for 19 per cent of the total expenditure. These have been implemented under the sectors of crop development, extension and non-farm activities.

6.1.4. Sector-Wise Expenditure according to Status

The distribution of projects and expenditure by the status of project implementation is given in Table 6.1.3. The status of project implementation is recorded under three categories viz., in-progress/on-going, completed/substantially completed and abandoned/not yet implemented. Out

of total number of projects, 75 per cent is reported completed/substantially completed and 25 per cent as in progress/on-going. Sectors such as animal husbandry and fisheries showing completion of 75 and 73 projects respectively, which are considered to be relatively high across sectors. It has been reported that 30 projects are in-progress/on-going under animal husbandry by the end of the 11th Plan.

In terms of expenditure, more than 90 per cent was spent on projects completed or substantially completed and the remaining on projects in progress and ongoing. Among the sectors, as per the expenditure norms projects implemented under cooperatives and cooperation, marketing and post harvest management, micro/minor irrigation, organic farming/bio fertilizers, fertilizers and INM and IPM have been reported completed or substantially completed. On the contrary, relatively a high proportion of expenditure has been reported under project on-going for the sectors of crop development, non-farm activities and natural resource management as compared to expenditure reported under completed or substantially completed. Among the completed projects, horticulture has the highest share of expenditure with Rs. 259.7 crore followed by fisheries (Rs. 88.9 crore) and seed (Rs. 88.4 crore).

6.1.5. Sector Wise Distribution of Project by Nature

The discussion on distribution of projects and expenditure by sectors provides some idea about the priorities that the State Government has given for the development of agriculture under RKVY. However, information on distribution of development projects at the sub-sectoral level is more revealing. Analysis at the sub-sectoral level is carried out by identifying projects under normal, State flagship and national flagship projects. This also helps to identify the projects with infrastructure components. While normal projects and State flagship projects have infrastructure components, national flagship projects have only non-infrastructure components.

Table 6.1.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure under normal, State flagship and national flagship projects in Chhattisgarh. Out of total expenditure of Rs.1082 crores, only 2.1 per cent was spent on development of infrastructure in agriculture and allied activities and the remaining 98 per cent was spent on non-infrastructure projects. Infrastructure expenditure under normal and State flagship projects accounted for 2.1 per cent and 0.1 per cent of the total expenditure, respectively. Among the sub-sectors, seed processing centers and storage has had the highest infrastructure spending of Rs. 16.9 crore. The non-infrastructure expenditure under normal, State and National flagship accounted for 95.1 per cent, 1.4 per cent and 5.8 per cent, respectively.

6.1.6. Assessment of RKVY and Concluding Remarks

The State of Chhattisgarh has implemented 361 projects with the expenditure of Rs. 1538.4 crore under the RKVY. Analysis of pattern of expenditure has revealed that crop development sector has accounted for the highest share followed by horticulture and animal husbandry. Certain sectors like information technology, dairy development and agricultural research has received relatively a priority for spending. The expenditure-allocation ratio was more than one for the sectors such as fertilizers & INM, and marketing & PHM. Similarly, projects implemented under non-farm activities, cooperatives and cooperation and information technology have registered allocation-expenditure ratio of one. It implies that these projects have achieved the financial efficiency in spending the allocated amount.

However, it would be interesting to analyze the expenditure pattern under RKVY in conjunction with growth performance of agriculture, input use and State budgetary allocation[1]. An important thrust under RKVY is to incentivize the State Governments, which would in turn increase the budgetary allocation for agriculture and allied sector and thus achieve high growth in the sector. It can be noted from Table 6.1.5 that total budgetary allocation at 2004-05 prices during the 10th Plan was Rs. 5447 crore under revenue component, which has considerably increased to Rs. 8078 crore during the 11th Plan. Interestingly, capital expenditure on agriculture has risen by 46.3 per cent between the two plan periods. This implies that the RKVY has played a catalyzing role to accelerate the public expenditure on agriculture. Although State total budget outlay increased by 81.5 per cent in the 11th Plan over 10th Plan, share of agriculture in the State budget declined from 28 per cent to 23 per cent. Out of total expenditure on agriculture, RKVY share has been estimated at 6.1 per cent.Analysis of composition of budgetary expenditure does not seem to be in correspondence with priority given for spending on different sectors under RKVY, with the highest amount spent on irrigation and flood control followed by food storage and warehousing (Table 6.1.6).

The contribution of agriculture and allied activities to the total GSDP declined from 22.04 per cent in 2002-03 to 19.24 per cent in 2011-12 (Table 6.1.7). While share of service sector has increased over time, contribution of industry showing declining trend during the recent years. Annual growth in agricultural GSDP during the 10th Plan was 4.0 per cent, which has considerably increased to 6.9 per cent during the 11th Plan (Table 6.1.8). The average annual growth in overall GSDP respective plan periods was 8.8 per cent and 7.7 per cent. With a higher growth in agricultural GSDP, land productivity has registered by and large increasing trend over time, with an average of Rs. 22,886 /ha in 10th Plan to Rs. 29,551/ha in the 11th Plan.

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[1]Attempt was also made to analyse the impact in terms of output and outcome and examine any divergence from stated goals and actual implementation. The expected output and outcome are available for the sub-components of the sectors (Table 12). But, it is very difficult to assess whether the expected goals have been achieved across the sub-components of the sectors due to lack of reliable data. However, efforts will be made to examine the actual output and outcome for some selected projects through field survey.

There seems to be perceptible increase in the use of improved inputs during the recent years. While area under irrigation increased marginally, irrigation intensity has risen by 6 percentage points between 10th and 11th Plan periods (Table 6.1.9). The proportion of net irrigated area to net sown are increased from 24.8 per cent in the 10th Plan to 28.5 per cent in the 11th Plan. Similarly, average fertiliser consumption increased from 61.3 Kg/ha to 91.8 Kg/ha. The use of fertiliser has increased significantly from 76.9 Kg/ha in 2007-08 to 107.1 Kg/ha in 2011-12.

Improvement in the use of yield enhancing inputs has led to increase in the yield of most crops during the recent period. Average annual growth in the yield of rice, ragi, barley and tur was relatively high during the eleventh plan as compared to that of in the tenth plan (Table 6.1.10). During the eleventh plan, annual growth in rice yield was the highest at 21.7 per cent, which had actually registered negative growth in the tenth plan. Similarly, annual growth in livestock products was also quite high in the most recent period (Table 6.1.11). Milk production registered average annual growth rate of 4.9 per cent in the eleventh plan as compared to 1.3 per cent in the tenth plan. The above discussion clearly brings out that RKVY has beneficial impact on agricultural growth in the State of Chhattisgarh.

TABLES

Table 6.1.1: Sector-Wise Allocation and Expenditure under RKVY during 11th FYP

Sectors	No. of project (exp)	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure allocation ratio	Expenditure per Project (Rs. in crore)
Crop Development	9(11)	290.0(21.1)	607.9(39.6)	0.9	67.5
Horticulture	77(81)	299.6(21.8)	261.2(17)	0.5	3.4
Animal Husbandry	46(74)	166.9(12.2)	118.2(7.7)	0.7	2.6
Fisheries	70(76)	92.1 (6.7)	89.7(5.9)	1.0	1.3
Seed	31(39)	125.6 (9.2)	89.4(5.9)	0.7	2.9
Extension	34(36)	96.5(7.1)	86.3(5.7)	0.9	2.5
Innovative Programmes	10(12)	61.4(4.5)	60.3(4)	1.0	6.0
Agriculture Mechanization	12(12)	53.0(3.9)	44.1(2.9)	0.8	3.7
Non Farm Activities	1(1)	42.3(3.1)	42.3(2.8)	1.0	42.4
Cooperatives And Cooperation	4(4)	35.4(2.6)	35.4(2.4)	1.0	8.9
Marketing & PHM	12(12)	29.0(2.2)	31.1(2.1)	1.1	2.6
Micro/Minor Irrigation	8(9)	28.3(2.1)	24.6(1.7)	0.9	3.1
Organic Farming / Bio Fertilizer	8(11)	20.3(1.5)	18.3(1.2)	0.9	2.3
NRM	1(1)	15(1.1)	9.3(0.7)	0.6	9.3
Fertilizers & INM	6(6)	5.7(0.5)	6.9(0.5)	1.2	1.2
IPM	8(9)	4.8(0.4)	4.7(0.4)	1.0	0.6
Research	16(17)	6.1(0.5)	4.5(0.3)	0.7	0.3
Dairy Development	7(7)	5.1(0.4)	2.5(0.2)	0.5	0.4
IT	1(1)	1(0.1)	1(0.1)	1.0	1.0
Grand Total	361(419)	1378.9(100)	1538.4(100)	0.8	4.3

Source: www.rkvy.nic.in as on April, 2013

Note: Figures in parenthesis under No. of project refers to projects as per allocation.
Figures in the parenthesis in other columns indicate the percentage to the respective total;
INM: Integrated Nutrient Management; IPM: Integrated Pest Management; NRM: Natural resource management ;PHM: Post Harvest Management; IT: Information Technology;
if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 6.1.2: Project Classification according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**
Agriculture mechanization	50.0	4.4	33.3	16.4	16.7	79.3	0.0	0.0	12(100)	44.4(100)
Animal husbandry	43.5	7.6	50.0	42.3	6.5	50.2	0.0	0.0	46(100)	118.2(100)
Cooperatives and cooperation	0.0	0.0	50.0	6.4	50.0	93.6	0.0	0.0	4(100)	35.4(100)
Crop development	44.5	0.9	22.2	7.0	11.1	7.0	22.2	85.2	9(100)	151.7(100)
Dairy development	85.7	60.0	14.3	40.0	0.0	0.0	0.0	0.0	7(100)	2.5(100)
Extension	55.9	6.2	41.2	55.1	0.0	0.0	3.0	38.8	34(100)	86.3(100)
Fertilizers and INM	50.0	12.0	50.0	88.0	0.0	0.0	0.0	0.0	6(100)	67.0 (100)
Fisheries	48.6	15.5	51.4	84.5	0.0	0.0	0.0	0.0	70(100)	89.8(100)
Horticulture	39.0	5.1	50.7	52.1	10.4	42.8	0.0	0.0	77(100)	261.2(100)
IT	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	1(100)
Innovative programmes	30.0	0.5	40.0	36.3	30.0	63.2	0.0	0.0	10(100)	60.4(100)
Integrated pest management	75.0	36.4	25.0	63.6	0.0	0.0	0.0	0.0	8(100)	4.7(100)
Marketing & PHM	16.7	5.1	83.3	94.9	0.0	0.0	0.0	0.0	12(100)	31.2(100)
Micro/minor irrigation	37.5	7.2	62.5	92.8	0.0	0.0	0.0	0.0	8(100)	24.8(100)
NRM	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	9.3(100)
Non farm activities	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	1(100)	42.4(100)
Organic farming / bio fertilizer	37.5	5.4	62.5	94.6	0.0	0.0	0.0	0.0	8(100)	18.4(100)
Research	87.5	56.0	12.5	44.0	0.0	0.0	0.0	0.0	16(100)	4.5(100)
Seed	45.2	5.0	48.4	67.1	6.5	27.9	0.0	0.0	31(100)	89.4(100)
Grand Total	**46.3**	**5.6**	**46.8**	**46.6**	**5.8**	**28.9**	**1.1**	**18.9**	**361(100)**	**1082.24(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure;
INM: Integrated nutrient management
Figures in the parenthesis are percentage to the respective total

Table 6.1.3: Sector-Wise Allocation and Expenditure by Status of the Projects (2006-07 to 2011-12)

(Rs. crore)

Sectors	In progress/Ongoing		Completed/Substantially completed	
	No.	Expenditure	No.	Expenditure
Crop Development	8	607.4	3	0.5
Horticulture	6	1.5	75	259.7
Animal Husbandry	30	48.9	44	69.3
Fisheries	3	0.9	73	88.9
Seed	8	1.1	31	88.4
Extension	14	59.8	22	26.5
Innovative Programmes	6	56.0	6	4.3
Agriculture Mechanization	4	1.3	8	42.9
Non Farm Activities	1	42.4	0	0
Cooperatives And Cooperation	0	0	4	35.4
Marketing & PHM	0	0	12	31.2
Micro/Minor Irrigation	1	0	8	24.7
Organic Farming / Bio Fertilizer	3	0	8	18.4
NRM	1	9.3		0
Fertilizers & INM	0	0	6	7.0
Integrated Pest Management	0	0	9	4.8
Research	15	2.5	2	2.0
Dairy Development	5	2.2	2	0.3
IT	0	0	1	1.0
Grand Total	105	833.3	314	705.2

Source: http://rkvy.nic.in/ as on April, 2013.

Note: PHM-Post harvest management; INM- Integrated nutrient management

Table 6.1.4: Sector and Subsector Wise Nature of the Projects

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		National Flagship project	Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Non infra structure	Infra structure	Non infra structure	
Horticulture	**0.0**	**95.7**	**0.0**	**4.3**	**0.0**	**0(0)**	**100(261.3)**	**100(261.3)**
Area expansion	0.0	100.0	0.0	0.0	0.0	0(0)	100(44.5)	100(44.5)
Development of horticulture farms/ facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(10.2)	100(10.2)
Floriculture	0.0	95.9	0.0	4.1	0.0	0(0)	100(25.4)	100(25.4)
Fruits	0.0	100.0	0.0	0.0	0.0	0(0)	100(28.7)	100(28.7)
Nurseries and green houses	0.0	58.0	0.0	42.0	0.0	0(0)	100(24.2)	100(24.2)
Others (horticulture)	0.0	100.0	0.0	0.0	0.0	0(0)	100(53.2)	100(53.2)
Post harvest management	0.0	100.0	0.0	0.0	0.0	0(0)	100(5.1)	100(5.1)
Vegetable	0.0	100.0	0.0	0.0	0.0	0(0)	100(70.3)	100(70.3)
Crop development	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(151.7)**	**100(151.7)**
Coarse cereals	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.6)	100(4.6)
Oilseeds and pulses	0.0	100.0	0.0	0.0	0.0	0(0)	100(10.7)	100(10.7)
Others (crop development)	0.0	100.0	0.0	0.0	0.0	0(0)	100(48.1)	100(48.1)
Paddy	0.0	100.0	0.0	0.0	0.0	0(0)	100(87.9)	100(87.9)
Wheat	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Animal husbandry	**0.0**	**98.7**	**0.0**	**1.3**	**0.0**	**0(0)**	**100(118.3)**	**100(118.3)**
Animal health	0.0	100.0	0.0	0.0	0.0	0(0)	100(12.9)	100(12.9)
Breed improvement	0.0	91.7	0.0	8.3	0.0	0(0)	100(18.5)	100(18.5)
Extension and training	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.8)	100(3.8)
Feed and fodder	0.0	100.0	0.0	0.0	0.0	0(0)	100(2.1)	100(2.1)
Infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(57.9)	100(57.9)
Others (animal husbandry)	0.0	100.0	0.0	0.0	0.0	0(0)	100(23.3)	100(23.3)
Poultry	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Fisheries	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(89.8)**	**100(89.8)**
Farmers fish ponds/ assistance including training	0.0	100.0	0.0	0.0	0.0	0(0)	100(23.8)	100(23.8)
Fish marketing	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.6)	100(4.6)
Infrastructure/ ponds of fisheries/ dept/ agency	0.0	100.0	0.0	0.0	0.0	0(0)	100(20.4)	100(20.4)

Others (fisheries)	0.0	100.0	0.0	0.0	0.0	0(0)	100(41.2)	100(41.2)
Seed	**22.2**	**77.5**	**0.3**	**0.0**	**0.0**	**22.6(20.2)**	**77.5(69.3)**	**100(89.5)**
Others (seed)	100.0	0.0	0.0	0.0	0.0	100(3.1)	0(0)	100(3.1)
Seed certification	0.0	100.0	0.0	0.0	0.0	0(0)	100(23)	100(23)
Seed farm	0.0	100.0	0.0	0.0	0.0	0(0)	100(5.6)	100(5.6)
Seed processing centers and storage	100.0	0.0	0.0	0.0	0.0	100(16.9)	0(0)	100(16.9)
Seed production	0.0	100.0	0.0	0.0	0.0	0(0)	100(36.9)	100(36.9)
Seed testing lab	0.0	92.9	7.1	0.0	0.0	7.2(0.3)	92.9(4)	100(4.3)
Extension	**0.0**	**99.4**	**0.0**	**0.6**	**0.0**	**0(0)**	**100(86.4)**	**100(86.4)**
Infrastructure	0.0	95.9	0.0	4.1	0.0	0(0)	100(12.9)	100(12.9)
Kvks / knowledge centers / dissemination	0.0	100.0	0.0	0.0	0.0	0(0)	100(41.2)	100(41.2)
New approaches to extension	0.0	100.0	0.0	0.0	0.0	0(0)	100(17.6)	100(17.6)
Others (extension)	0.0	100.0	0.0	0.0	0.0	0(0)	100(11.1)	100(11.1)
Training/ study tour	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.7)	100(3.7)
Innovative programmes	**0.0**	**74.9**	**0.0**	**0.0**	**25.1**	**0(0)**	**100(60.4)**	**100(60.4)**
Innovative programmes	0.0	74.0	0.0	0.0	26.0	0(0)	100(58.4)	100(58.4)
Others (innovative programmes, training & others)	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Agriculture mechanization	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(44.2)**	**100(44.2)**
Custom hiring centers	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.1)	100(3.1)
Machines and equipment assistance	0.0	100.0	0.0	0.0	0.0	0(0)	100(41.1)	100(41.1)
Others (agri. Mechanization)	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Non farm activities	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(42.4)**	**100(42.4)**
Post harvest processing facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(42.4)	100(42.4)
Cooperatives and cooperation	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(35.5)**	**100(35.5)**
Construction of godowns	0.0	100.0	0.0	0.0	0.0	0(0)	100(35.5)	100(35.5)
Marketing and post harvest management	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(31.2)**	**100(31.2)**
Godowns and warehouses	0.0	100.0	0.0	0.0	0.0	0(0)	100(15.1)	100(15.1)
Setting up/ strengthening of market infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(16.2)	100(16.2)
Micro/minor irrigation	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(24.7)**	**100(24.7)**
Others (micro & minor irrigation)	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.8)	100(0.8)
Pump sets (diesel/electric)	0.0	100.0	0.0	0.0	0.0	0(0)	100(5.9)	100(5.9)
Sprinkler and drip irrigation	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Tube wells	0.0	100.0	0.0	0.0	0.0	0(0)	100(17.6)	100(17.6)
Organic farming / bio fertilizer	**9.2**	**90.8**	**0.0**	**0.0**	**0.0**	**9.3(1.7)**	**90.8(16.7)**	**100(18.4)**
Promotion of bio fertilizer	100.0	0.0	0.0	0.0	0.0	100(1.7)	0(0)	100(1.7)

Vermi composting	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(16.7)**	**100(16.7)**
NRM	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(9.4)**	**100(9.4)**
Water conservation structures and watershed development	0.0	100.0	0.0	0.0	0.0	0(0)	100(9.4)	100(9.4)
Fertilizers and INM	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(7)**	**100(7)**
Fertilizer labs	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.1)	100(3.1)
Soil testing lab	0.0	100.0	0.0	0.0	0.0	0(0)	100(4)	100(4)
IPM	**0.0**	**78.5**	**0.0**	**21.5**	**0.0**	**0(0)**	**100(4.8)**	**100(4.8)**
Others (IPM)	0.0	100.0	0.0	0.0	0.0	0(0)	100(3)	100(3)
Pest surveillance	0.0	17.7	0.0	82.3	0.0	0(0)	100(1.3)	100(1.3)
Promotion of IPM	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Research	**0.0**	**78.0**	**0.0**	**22.0**	**0.0**	**0(0)**	**100(4.6)**	**100(4.6)**
Agri research project	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.4)	100(3.4)
Agri research/ teaching facility (infrastructure)	0.0	16.0	0.0	84.0	0.0	0(0)	100(1.2)	100(1.2)
Dairy development	**30.0**	**70.0**	**0.0**	**0.0**	**0.0**	**30(0.8)**	**70.1(1.8)**	**100(2.6)**
Milk processing	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Others (dairy development)	37.0	63.0	0.0	0.0	0.0	37.1(0.8)	63(1.3)	100(2.1)
Information technology	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(1)**	**100(1)**
Electronics media	0.0	100.0	0.0	0.0	0.0	0(0)	100(1)	100(1)
Grand total	**2.1**	**95.1**	**0.0**	**1.4**	**1.4**	**2.1(22.6)**	**98(1059.7)**	**100(1082.3)**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 6.1.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. Crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	Percentage of RKVY expenditure to agri. expenditure
2002-03	890	425	1315	4725	27.8	15.3	
2003-04*	1524	522	2046	6383	32.1	16.7	
2004-05	1086	656	1742	5606	31.1	17.1	
2005-06	1030	531	1561	5921	26.4	13.6	
2006-07	917	628	1546	6844	22.6	12.9	
10th Plan	**5447**	**2762**	**8209**	**29479**	**28.0**	**15.1**	
2007-08	1258	669	1928	8154	23.6	14.7	
2008-09	1326	749	2075	8902	23.3	17.6	
2009-10	1885	745	2631	10852	24.2	20.6	**6.1**
2010-11	1910	724	2635	10817	24.4	17.0	
2011-12*	1698	1153	2851	14783	19.3	17.5	
11th Plan	**8078**	**4041**	**12120**	**53509**	**23.0**	**17.5**	
% change over 10th plan	**48.3**	**46.3**	**47.6**	**81.5**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes irrigation and flood control

Budgetary expenditure is accounts only Developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 6.1.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	572.9(6.9)	2105.5(12)	267.6
2	Soil and Water Conservation	123.2(1.5)	200.1(1.2)	62.4
3	Animal Husbandry	407(4.9)	893.4(5.1)	119.5
4	Dairy Development	0.7(0.1)	0(0)	-100.0
5	Fisheries	49.4(0.6)	157.4(0.9)	218.8
6	Forestry and Wild Life	1672.8(20.2)	3378.5(19.2)	102.0
7	Plantations	0(0)	0(0)	0.0
8	Food Storage and Warehousing	1847(22.3)	3450.5(19.6)	0.0
9	Agricultural Research and Education	93(1.2)	179.9(1.1)	93.5
10	Agricultural Finance Institutions	0(0)	0(0)	0.0
11	Co-operation	147.9(1.8)	583.8(3.4)	294.9
12	Other Agricultural Programmes	162.4(2)	21.9(0.2)	-86.5
13	Major and Medium Irrigation	417.3(5.1)	873.4(5)	109.3
14	Minor Irrigation	195.2(2.4)	281.6(1.6)	44.3
15	Flood Control and Drainage	0(0)	0(0)	0.0
16	Others	2630.2(31.7)	5554.6(31.5)	111.2
	Total	**8318.4(100)**	**17680(100)**	**112.5**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others;
Figures in the Parenthesis indicate percentage to their respective total.

Table 6.1.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Sector	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Agriculture and allied	22.04	27.06	21.23	23.18	20.42	20.56	17.08	17.92	19.78	19.29	18.74
Industry	41.04	39.75	44.34	41.32	46.24	45.71	48.16	45.27	42.06	41.64	40.94
Service	36.57	33.75	34.44	35.50	33.34	33.73	34.76	36.81	38.16	39.07	40.32
Aggregate	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05)

Table 6.1.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-22.9	-0.1	48	54	114.6	18046
2003-04	43.1	16.5	48	57	119.4	25695
2004-05	-17.3	5.5	48	57	119.8	21298
2005-06	12.8	3.2	48	57	120.6	24044
2006-07	4.5	18.6	47	57	121.4	25346
10th Plan Average	**4.0**	**8.8**	**48**	**57**	**119.2**	**22886**
2007-08	9.3	8.6	47	57	121.6	27679
2008-09	-9.9	8.4	47	57	120.7	25016
2009-10	8.5	3.4	47	56	118.7	27299
2010-11	21.2	9.7	47	57	120.8	32983
2011-12	5.4	8.1	47	57	120.8	34777
11th Plan Average	**6.9**	**7.7**	**47**	**57**	**120.5**	**29551**

Source: Directorate of Economics and Statistics, GOI
Note: *land productivity = agricultural GSDP/ha of NSA

Table 6.1.9: Trend in Inputs Use in Chhattisgarh

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	10.7	11.4	22.5	107.1	21.0	-
2003-04	10.9	11.8	22.8	108.2	20.7	44.2
2004-05	12.1	13.1	25.3	108.6	23.0	65.2
2005-06	12.5	13.8	26.2	110.2	23.9	67.4
2006-07	12.8	14.9	27.1	115.9	25.9	68.3
10th Plan Average	**11.8**	**13.0**	**24.8**	**110.0**	**22.9**	**61.3**
2007-08	13.3	15.2	28.2	114.1	26.5	76.9
2008-09	13.4	15.4	28.4	114.8	27.0	80.5
2009-10	13.2	14.9	28.3	112.4	26.7	93.5
2010-11	13.6	16.1	28.9	118.4	28.3	101.1
2011-12	13.6	16.1	28.9	118.4	28.3	107.1
11th Plan Average	**13.4**	**15.5**	**28.5**	**115.6**	**27.4**	**91.8**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100;
Column6= Gross irrigated area /Gross sown area*100

Table 6.1.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	-0.5	11.4	-25.2	0.3	6.0	21.7
Maize	0.8	15.3	19.9	1.4	9.6	6.7
Ragi	-2.2	-0.6	0.3	-4.3	-6.3	1.4
Barley	-2.7	-0.9	0.3	-4.8	-9.5	2.0
Coarse Cereals	-16.1	4.1	-0.3	27.7	5.2	0.2
Total Cereals	-1.8	10.5	-5.9	1.1	6.3	5.5
Arhar/Tur	1.6	3.9	2.5	0.5	1.7	3.2
Other Pulses	0.7	5.9	8.0	-22.5	-20.3	0.9
Total Pulses	-3.0	-0.5	0.2	4.4	19.8	4.5
Total Foodgrains	-2.1	8.3	-4.0	1.5	6.8	4.4
Rapeseed & Mustard	3.5	7.2	2.1	-2.8	-0.5	0.2
Nigerseed	-0.2	-1.2	6.7	-1.3	-1.6	1.3
Sunflower	47.9	22.4	0.5	65.9	27.8	0.4
Soyabean	46.1	59.1	1.3	8.9	5.6	0.6
Total Oilseeds	0.9	12.2	13.6	4.7	2.7	0.6
Sugarcane	17.1	16.1	0.9	8.6	8.2	0.9

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 6.1.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.1	0.0	1.1	4.2
2003-04	1.0	0.0	3.9	11.3
2004-05	2.3	0.0	8.7	8.1
2005-06	1.0	0.0	0.9	9.7
2006-07	1.2	0.0	3.8	4.6
10th plan	**1.3**	**0.0**	**3.7**	**7.6**
2007-08	2.0	350.0	-0.3	1.2
2008-09	4.8	11.1	6.0	13.9
2009-10	5.3	25.0	8.0	9.8
2010-11	7.6	8.0	18.4	31.0
2011-12	-	-	-	9.9
11th plan*	**4.9**	**98.5**	**8.0**	**13.1**

Source: BAHS, www.Indiastat.com;
Note: *For Milk, Meat and Egg 2011-12 data are not available

6.2 GUJARAT

6.2.1. Background Information

Gujarat is one of the most industrialized States in India. This State covers a geographical area of 1,96,204 sq.km. accounting for 5.97 per cent of the India's geographical area. According to 2011 Population Census, total population in Gujarat was 60million**,** which constituted 4.9 per cent of India's population. Gujarat ranked 10th largest populous State in the country. The population density stood at 308 per sq km.

In terms of agricultural development, Gujarat is known for the cultivation of tobacco, cotton, and groundnut. The net area sown was 103 lakh hectares of which 41 per cent was irrigated in 2011-12. The State Government had initiated many irrigation development programmes since early 2000s for improving the irrigation facilities. This along with reforms in the power sector led to considerable expansion of irrigated area in the State. Apart from the crop sector, Gujarat occupies an important place in development of dairy industry in the country. Milk production was 93.2 lakh tonnes with a share of about 7.6 per cent to national production in 2010-11. Although share of agriculture in State income has declined over time, it still plays important role on overall economic growth.

RKVY was launched in August 2007 with the objective of incentivizing the State Governments to accelerate the growth in agricultural sector. States were requested to prepare the comprehensive agricultural plans at the district and State level taking into account the felt needs of the farmers and other stake holders. These meant for facilitating the State Governments to prioritize the developmental activities and take up the investments accordingly to promote growth in agriculture and allied sectors. In addition to State specific problems, RKVY has also provided scope for launching projects for special needs of different States and dry land areas. The present Chapter analyses implementation of RKVY in Gujarat at the macro level during the 11th Plan.

6.2.2. Distribution of Allocation and Expenditure under RKVY by Sectors

In the State of Gujarat, 435 projects were implemented during the 11th Five Year Plan (Table 6.2.1). These projects are spread across 19 sectors and have accounted for total expenditure of Rs. 1506.2 crore. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture. The amount allocated and expenditure for different projects is expected move in the same direction. Nonetheless, it can be observed that expenditure does not match with the allocation as the entire

allocated amount might not have been released for spending on the targeted activities. Therefore, for the purpose of analysis, actual expenditure has been taken into account.

It is clear from the Table 6.2.1 and Figure 6.2 that natural resource management has accounted for the highest proportion of expenditure (29.2 per cent) followed by agricultural mechanization (11 per cent) and marketing and post harvest management (9.3 per cent). Combining these with expenditure on horticulture (8.3 per cent), animal husbandry (7.5 per cent) and crop development (5.7 per cent), total amount spent on all these projects constituted about 70 per cent of the total expenditure on agriculture and allied sectors under RKVY. Natural resource management appears to be an important sector for the State Government of Gujarat and it has covered activities like water conservation structures and watershed development, land reclamation and treatment for acidic, alkali and water logged soils. The average expenditure per project was also found be high at Rs. 8.7 crore under natural resource management. It can be observed that none of sector in the State has achieved expenditure- allocation ratio equal to one. For the State as a whole, the overall expenditure-allocation ratio was worked out at 0.5 indicating that out of total allocated amount under RKVY; only 50 per cent was actually spent.

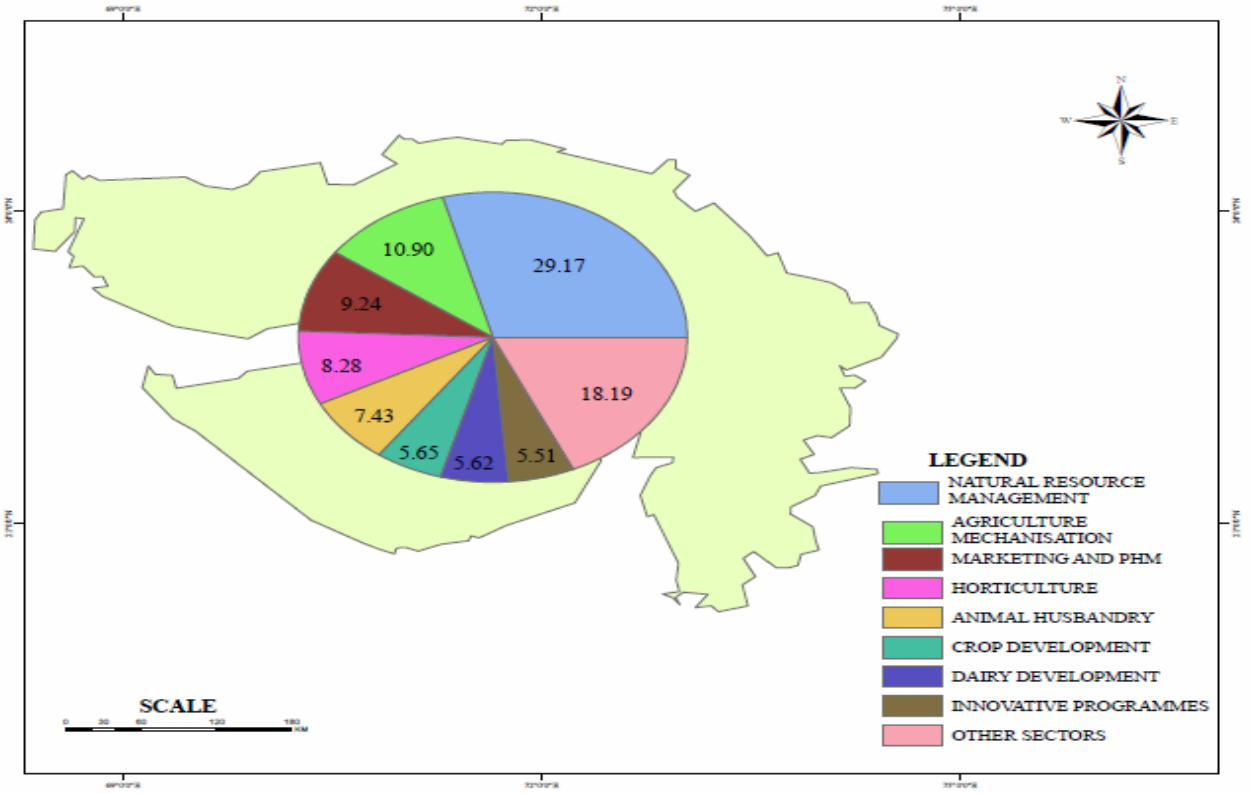

Figure 6.2: Share of Expenditure across Sectors

Note: Minor sectors include micro/minor irrigation, organic farming / bio fertilizer, seed, research, fertilizers and INM, extension, IPM, fisheries, non-farm activities, cooperatives and cooperation and sericulture

6.2.3. Sector-Wise Size of the Projects based on the Expenditure

Table 6.2.2 presents distribution of projects by expenditure and amount of expenditure incurred by size groups. The total amount spent under RKVY projects have been divided into four categories viz., less than Rs. 1 crore, Rs. 1-10 crore, Rs. 10-25 crore and more than Rs. 25 crore. Out of the total expenditure, 42.2 per cent of the projects accounting for 3.5 per cent of the expenditure came under the category of less than one crore rupees. It implies that relatively a large number of projects implemented under RKVY are small in nature. Similarly, about 46.5 per cent of projects constituting about 39.3 per cent of the total expenditure came under the category of one to ten crore rupees. With these range of distribution of projects, it can be stated that bulk of the projects (89 per cent) have fallen under expenditure category of less than Rs. 10 crores. These projects have accounted for 43 per cent of the total expenditure.

On the extreme side, eight per cent of the projects with about 26 per cent of expenditure and 3.4 per cent of the projects accounting for about 31 per cent of the total amount spent came under the categories of Rs. 10-25 crore and more than Rs. 25 crore, respectively. Large projects in terms of expenditure fell under the sectors of agricultural mechanization, marketing and post harvest management, micro/minor irrigation, organic farming/bio-fertilisers, natural resource management, innovative programmes/training/capacity building/others and animal husbandry.

6.2.4. Sector-wise Expenditure according to Status

The distribution of projects and expenditure by the status of implementation is given in Table 6.2.3. The status of project implementation is recorded under three categories viz., in-progress/on-going, completed/substantially completed and abandoned/not yet implemented. Out of 435 projects, while 38 per cent (165 projects) were completed/substantially completed, 56 per cent were in the State of in-progress/on-going. Unfortunately, about 26 projects (6 per cent) were shown as abandoned/not yet implemented even though no expenditure on these projects was committed with the exception of one project under non-farm activities.

Out of the competed projects, natural resource management has accounted for the highest amount of expenditure followed by horticulture and innovative programmes and animal husbandry. In terms of number of projects completed, sectors such as natural resource management and animal husbandry shown about 26 projects each. Similarly, 18 projects each were completed under horticulture and seed sectors. Among the on-going projects, agricultural mechanization accounts for the highest share of the expenditure followed by natural resource management, and marketing and post harvest management. While only projects implemented under sectors of cooperatives and cooperation, and sericulture have been reported completed or substantially completed, projects under other 17 sectors are reported on-going by the end of the 11th Plan.

6.2.5. Sector Wise Distribution of Project by Nature

The discussion on distribution of projects and expenditure by sectors provides some idea about the priorities that the State Government has given for the development of agriculture under RKVY. However, information on distribution of development projects at the sub-sectoral level is more revealing. Analysis at the sub-sectoral level is carried out by identifying projects under normal, State flagship and national flagship projects. This also helps to identify the projects with infrastructure components. While normal projects and State flagship projects have infrastructure components, national flagship projects have only non-infrastructure components.

Table 6.2.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure under normal, State flagship and national flagship projects in Gujarat. Out of total RKVY expenditure of Rs.1506.3 crores, about 69 per cent was spent on development of infrastructure in agriculture and allied activities and the remaining 31 per cent was spent on non-infrastructure projects. Infrastructure expenditure under normal and State flagship projects accounted for 34.9 per cent and 23.8 per cent of the total expenditure, respectively. The top five sub-sectors that accounted for the highest amount of infrastructure included soil treatment (acidic, alkali and water logged), water conservation structure and watershed development, land reclamation, setting up/strengthening of market infrastructure, and machines and equipment assistance. The non-infrastructure expenditure under normal, State flagship and national flagship projects accounted for 27.5 per cent, 3.9 per cent and 9.9 per cent, respectively.

6.2.6. Assessment of RKVY and Concluding Remarks

In Gujarat, 435 projects spreading across 19 sectors were implemented during the 11th Plan. These projects have accounted for an expenditure of Rs. 1506.3 crore. The analysis of expenditure across sectors and sub-sectors revealed that natural resource management has accounted for the highest proportion followed by agricultural mechanization and marketing and post harvest management. There is a considerable gap between the amount allocated and spent for most sectors and it has been estimated at 0.5 for the State as whole. Out of the completed projects, natural resource management has accounted for relatively high share of expenditure. Among on-going projects, agricultural mechanization has higher share of expenditure.

As regards the nature of projects, expenditure on development of infrastructure in agriculture and allied sectors constituted about 68.6 per cent. State flagship projects and national flagship projects have accounted for 27.7 per cent and 10 per cent, respectively. Analysis of projects by expenditure class has revealed that 42.2 per cent of the projects are small projects with the expenditure of less than one crore rupees. Large projects with expenditure of more than Rs. 25 crore came under the sectors of agricultural mechanization, marketing and post harvest

management, micro/minor irrigation, organic farming/bio-fertilisers, natural resource management and innovative programmes and animal husbandry.

However, it would be interesting to analyse the expenditure pattern under RKVY in conjunction with growth performance of agriculture, input use and State budgetary allocation[2]. An important thrust under RKVY is to incentivize the State Governments, which would in turn increase the budgetary allocation for agriculture and allied sector and thus achieve desirable growth in the sector. It is evident from the Table 6.2.5 that total budgetary allocation during the 10th Plan was Rs. 9802 crore (at 2004-05 prices), which increased substantially by 11 per cent to reach Rs. 10882 crore during the 11th Plan. Interestingly, there is a remarkable increase in capital expenditure during the 11th Plan as compared to the 10th Plan with 64.4 per cent. This may be attributed to implementation of RKVY in the State. Total expenditure (revenue and capital) increased in the 11th Plan as compared to the 10th Plan and State total budget outlay increased by 54.6 per cent in the 11th Plan over 10th Plan. However, percentage of agriculture share in the State budget declined from 21.7 per cent in the 10th Plan to 19.6 per cent during the 11th Plan. Although share of agriculture in the State total budget declined in the 11th Plan but agriculture expenditure as a share of State GSDP increased from 12.3 per cent in the 10th Plan to 13 per cent in the 11th Plan. Out of total expenditure in agriculture in the State, RKVY share was 3.9 per centof the total expenditure. With respect to composition of budgetary expenditure, irrigation and flood control has accounted for relatively a high share followed by crop husbandry (Table 6.2.6), which is more or less in congruence with the RKVY expenditure pattern.

In line with the economic development pattern observed at the national level, share of agriculture in the State income has declined from 16.1 per cent in 2004-05 to 12.9 per cent in 2011-12 (Table 6.2.7). While the share of industry has increased marginally, service sector has shown vibrancy, despite fluctuations during 2009-10 and 2010-11, accounting for about 46.0 per cent in 2011-12. Notwithstanding, higher growth in agriculture has resulted in a significant growth in overall State economy during the periods under study. During the 10th Plan, average annual growth in agriculture was 9.7 per cent, which unfortunately declined to 5.6 per cent in 11th Plan due to severe drought during 2008-10 (Table 6.2.8). The corresponding growth in overall GSDP was 11.0 per cent and 9.5 per cent.

It is interesting to observe from the Table 8 that net sown area as well as gross cropped area has increased from 97 lakh hectares to 103 lakh hectare and 113 lakh hectare to 119 lakh hectares, respectively between the 10th Plan and 11th Plan periods. The cropping intensity was 115 per cent at the end of the 11th Plan period. There is a perceptible increase in the use of inputs such as

[2]Attempt was also made to analyse the impact in terms of output and outcome and examine any divergence from stated goals and actual implementation. The expected output and outcome are available for the sub-components of the sectors (Table 12). But, it is very difficult to assess whether the expected goals have been achieved across the sub-components of the sectors due to lack of reliable data. However, efforts will be made to examine the actual output and outcome for some selected projects through field survey.

irrigation and fertiliser consumption during the most recent period (Table 6.2.9). Because of increase in irrigation facility, average consumption of fertiliser has increased substantially from 99.2 Kg/ha to 150 Kg/ha between the 10th plan and 11th Plan periods.

Increased use of improved inputs seemed to have results a rise in the yield of most crops in Gujarat (Table 6.2.10). Growth in the yield of crops such as wheat, jowar, bajra, maize, ragi, sesamum, rapeseed and mustard, and soybean was commendable during the eleventh plan period. Similarly, growth in livestock products was high; this was appreciable during the eleventh plan as compared to the tenth plan period (Table 6.2.11). Therefore, it can be inferred that RKVY has impacted agricultural growth in the State of Gujarat positively.

TABLES

Table 6.2.1: Sector-wise Allocation and Expenditure under RKVY during 11th FYP

Sectors	No. of projects	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio (3/2)	Expenditure per Project (Rs. crore)
Natural Resource Management	42(50)	687.75(22.6)	439.36(29.2)	0.6	8.8
Agriculture Mechanization	16(20)	273.93(9)	164.22(11)	0.6	8.2
Marketing & PHM	21(28)	241.21(8)	139.13(9.3)	0.6	5.0
Horticulture	44(49)	266.24(8.8)	124.74(8.3)	0.5	2.5
Animal Husbandry	40(55)	185.15(6.1)	111.98(7.5)	0.6	2.0
Crop Development	33(40)	376.00(12.4)	85.14(5.7)	0.2	2.1
Dairy Development	25(25)	124.42(4.1)	84.64(5.7)	0.7	3.4
Innovative Programmes	18(18)	133.67(4.4)	82.96(5.6)	0.6	4.6
Micro/Minor Irrigation	11(18)	221.24(7.3)	80.57(5.4)	0.4	4.5
Organic Farming / Bio Fertilizer	12(14)	127.21(4.2)	45.39(3.1)	0.4	3.2
Seed	31(35)	85.47(2.9)	42.65(2.9)	0.5	1.2
Research	11(13)	57.20(1.9)	33.64(2.3)	0.6	2.6
Fertilizers & INM	9(10)	25.33(0.9)	20.57(1.4)	0.8	2.1
Extension	14(22)	112.65(3.7)	15.67(1.1)	0.1	0.7
Integrated Pest Management	12(13)	35.14(1.2)	11.97(0.8)	0.3	0.9
Fisheries	5(13)	54.34(1.8)	10.46(0.7)	0.2	0.8
Non Farm Activities	8(8)	28.63(1)	9.90(0.7)	0.3	1.2
Cooperatives And Cooperation	1(2)	9.6(0.4)	3(0.2)	0.3	1.5
Sericulture	1(2)	0.57(0.1)	0.15(0.1)	0.3	0.1
Grand Total	**353 (435)**	**3045.8166(100)**	**1506.2281(100)**	**0.5**	**3.5**

Source: www.rkvy.nic.in as on April, 2013;

Note: *Figures in the parenthesis in column 2 indicates no. of projects w.r.t. allocation

Figures in the parenthesis in column 3 and 4 indicates the percentage to the respective total

INM: Integrated Nutrient Management; PHM-Post Harvest Management

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 6.2.2: Project Classification according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total	
	No.s	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**
NRM	4.8	0.2	59.5	22.2	28.6	42.1	7.2	35.6	42(100)	439.4(100)
Agriculture mechanisation	37.5	1.2	37.5	18.8	6.3	9.4	18.8	70.6	16(100)	164.2(100)
Marketing & PHM	19.1	1.5	57.2	29.8	14.3	25.6	9.5	43.2	21(100)	139.1(100)
Horticulture	50.0	6.1	43.2	58.3	6.8	35.6	0.0	0.0	44(100)	124.7(100)
Animal husbandry	57.5	5.1	35.0	45.4	5.0	23.2	2.5	26.3	40(100)	112.0(100)
Crop development	57.6	8.3	33.3	51.3	9.1	40.4	0.0	0.0	33(100)	85.1(100)
Dairy development	20.8	1.7	75.0	86.4	4.2	11.9	0.0	0.0	24(100)	84.6(100)
Innovative programmes	27.8	4.2	66.7	57.1	0.0	0.0	5.6	38.7	18(100)	83.0(100)
Micro/minor irrigation	45.5	2.6	27.3	17.1	18.2	28.5	9.1	51.8	11(100)	80.6(100)
Organic farming / bio fertiliser	66.7	6.4	25.0	15.8	0.0	0.0	8.3	77.8	12(100)	45.4(100)
Seed	54.8	14.3	45.2	85.7	0.0	0.0	0.0	0.0	31(100)	42.6(100)
Research	36.4	5.4	54.6	42.1	9.1	52.6	0.0	0.0	11(100)	33.6(100)
Fertilizers and INM	33.3	3.2	66.7	96.8	0.0	0.0	0.0	0.0	9(100)	20.6(100)
Extension	78.6	19.7	21.4	80.3	0.0	0.0	0.0	0.0	14(100)	15.7(100)
IPM	58.3	22.7	41.7	77.4	0.0	0.0	0.0	0.0	12(100)	12.0(100)
Fisheries	40.0	3.3	60.0	96.7	0.0	0.0	0.0	0.0	5(100)	10.5(100)
Non farm activities	62.5	22.4	37.5	77.6	0.0	0.0	0.0	0.0	8(100)	10.0(100)
Cooperatives and cooperation	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	3(100)
Sericulture	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1(100)	0.2(100)
Grand Total	**42.2**	**3.5**	**46.5**	**39.3**	**7.9**	**26.0**	**3.4**	**31.3**	**353(100)**	**1506.2(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure;
INM: Integrated nutrient management
Figures in the parenthesis are percentage to the respective total

Table 6.2.3: Sector-Wise Allocation and Expenditure by Status of the Projects (2006-07 to 2011-12)

(Rs. crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not yet implemented	
	No.	**Exp.**	**No.**	**Exp.**	**No.**	**Exp.**
NRM	24	93.8	26	345.5	0	0
Agriculture Mechanization	11	101.9	8	62.3	1	0
Marketing & PHM	15	79.3	11	59.9	2	0
Horticulture	28	46.8	18	78.0	3	0
Animal Husbandry	25	36.1	26	75.9	4	0
Crop Development	25	51.2	13	34.0	2	0
Dairy Development	19	51.7	6	32.9	0	0
Innovative Programmes	6	6.3	12	76.7	0	0
Micro/Minor Irrigation	14	67.7	3	12.9	1	0
Organic Farming / Bio Fertilizer	11	44.1	2	1.3	1	0
Seed	16	16.1	18	26.5	1	0
Research	9	23.4	4	10.2	0	0
Fertilizers & INM	3	3.5	6	17.1	1	0
Extension	16	3.0	4	12.7	2	0
Integrated Pest Management	10	9.8	2	2.2	1	0
Fisheries	6	2.0	2	8.5	5	0
Non Farm Activities	6	8.1	1	0.8	1	1.0
Cooperatives And Cooperation	0	0	2	3.0	0	0
Sericulture	0	0	1	0.2	1	0
Grand Total	**244**	**644.7**	**165**	**860.5**	**26**	**1.0**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: INM: Integrated nutrient management, PHM: Post harvest management
No.: No. of projects

Table 6.2.4: Sector and Sub-Sector Wise Nature of the Project

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		National flagship project	Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Non infra structure	Infra structure	Non infra structure	
NRM	**32.6**	**8.1**	**29.5**	**0.0**	**29.8**	**91.9(403.7)**	**8.2(35.8)**	**100(439.4)**
Land reclamation	49.5	3.3	13.2	0.0	34.0	96.7(102.3)	3.4(3.5)	100(105.8)
Others (NRM)	9.1	89.6	1.4	0.0	0.0	10.5(2.5)	89.6(21.1)	100(23.6)
Soil treatment (acidic alkali, water logged)	31.7	0.6	9.8	0.0	57.9	99.4(163)	0.7(1)	100(164)
Water conservation structures and watershed dev	25.0	7.0	68.0	0.0	0.0	93.1(136)	7(10.3)	100(146.2)
Agriculture mechanization	**44.5**	**37.0**	**18.4**	**0.0**	**0.0**	**63(103.5)**	**37.1(60.9)**	**100(164.3)**
Custom hiring centers	62.3	37.7	0.0	0.0	0.0	62.3(2.5)	37.8(1.5)	100(4)
Machines and equipment assistance	41.5	38.7	19.8	0.0	0.0	61.3(94)	38.8(59.4)	100(153.3)
Others (agri. Mechanization)	100.0	0.0	0.0	0.0	0.0	100(7)	0(0)	100(7)
Marketing & PHM	**79.8**	**3.6**	**10.4**	**1.3**	**4.8**	**95.1(132.3)**	**5(6.9)**	**100(139.2)**
Cold storages and cold chains	76.0	16.2	0.0	7.8	0.0	76.1(18.1)	24(5.7)	100(23.8)
Godowns and wearhouses	12.0	0.0	20.1	0.0	67.8	100(10)	0(0)	100(10)
Others (marketing & PHM)	100.0	0.0	0.0	0.0	0.0	100(9.9)	0(0)	100(9.9)
Private sector/ PPP projects	100.0	0.0	0.0	0.0	0.0	100(0.1)	0(0)	100(0.1)
Setting up/ strengthening of market infrastructure	85.7	1.3	13.0	0.0	0.0	98.8(94.4)	1.3(1.2)	100(95.6)
Horticulture	**25.1**	**47.5**	**27.2**	**0.2**	**0.0**	**52.4(65.3)**	**47.7(59.5)**	**100(124.8)**
Area expansion	42.7	31.3	25.9	0.0	0.0	68.7(20.9)	31.4(9.6)	100(30.5)
Coconut	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Development of horticulture farms/ facilities	2.8	0.0	96.0	1.2	0.0	98.8(22.9)	1.3(0.3)	100(23.1)
Fruits	75.7	24.3	0.0	0.0	0.0	75.7(1)	24.4(0.4)	100(1.4)
Nurseries and green houses	6.6	59.4	34.0	0.0	0.0	40.7(1.2)	59.4(1.7)	100(2.8)
Others (horticulture)	49.9	45.2	4.9	0.0	0.0	54.9(5)	45.2(4.1)	100(9.1)
Tissue culture	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.7)	100(1.7)
Vegetable	21.4	74.1	4.5	0.0	0.0	25.9(14.5)	74.2(41.6)	100(56.1)
Animal husbandry	**34.0**	**22.7**	**42.0**	**1.3**	**0.0**	**76.1(85.2)**	**24(26.9)**	**100(112)**
Animal health	26.3	4.9	53.3	15.5	0.0	79.7(7.3)	20.4(1.9)	100(9.2)
Breed improvement	70.0	5.8	24.1	0.0	0.0	94.2(2.5)	5.9(0.2)	100(2.6)
Extension and training	98.7	0.0	1.3	0.0	0.0	100(11.6)	0(0)	100(11.6)
Feed and fodder	2.2	97.8	0.0	0.0	0.0	2.3(0.6)	97.8(24.9)	100(25.4)

Infrastructure	10.5	0.0	89.5	0.0	0.0	100(46)	0(0)	100(46)
Others (animal husbandry)	98.4	0.2	1.4	0.0	0.0	99.8(16.8)	0.3(0.1)	100(16.8)
Poultry	100.0	0.0	0.0	0.0	0.0	100(0.6)	0(0)	100(0.6)
Crop development	**24.5**	**60.5**	**10.1**	**4.9**	**0.0**	**34.6(29.5)**	**65.5(55.8)**	**100(85.2)**
Coarse cereals	0.0	100.0	0.0	0.0	0.0	0(0)	100(16.7)	100(16.7)
Cotton	75.9	0.0	13.4	10.7	0.0	89.3(5.9)	10.8(0.8)	100(6.6)
Oilseeds and pulses	91.0	1.2	7.8	0.0	0.0	98.9(10.9)	1.2(0.2)	100(11.1)
Others (crop development)	1.7	89.9	5.0	3.3	0.0	6.8(2.6)	93.3(35)	100(37.5)
Paddy	26.9	18.3	11.1	43.7	0.0	38(2)	62.1(3.2)	100(5.1)
Sugarcane	100.0	0.0	0.0	0.0	0.0	100(3.8)	0(0)	100(3.8)
Wheat	0.0	2.7	97.3	0.0	0.0	97.3(4.4)	2.8(0.2)	100(4.6)
Dairy development	**30.1**	**28.7**	**38.9**	**2.4**	**0.0**	**69(58.4)**	**31.1(26.3)**	**100(84.7)**
Assistance to dairy unions/ farmers (inc training)	0.0	100.0	0.0	0.0	0.0	0(0)	100(2.5)	100(2.5)
Dairy units to farmers	0.0	0.0	100.0	0.0	0.0	100(12.1)	0(0)	100(12.1)
Milk processing	15.5	84.5	0.0	0.0	0.0	15.6(4)	84.5(21.8)	100(25.8)
Others (dairy development)	36.4	0.0	63.6	0.0	0.0	100(32.8)	0(0)	100(32.8)
Promotion of milk collection centers	82.7	0.0	0.0	17.3	0.0	82.7(9.6)	17.4(2)	100(11.6)
Innovative programmes	**14.4**	**22.0**	**12.4**	**51.1**	**0.0**	**26.9(22.3)**	**73.2(60.7)**	**100(83)**
Innovative programmes	14.4	22.0	12.4	51.1	0.0	26.9(22.3)	73.2(60.7)	100(83)
Micro/minor irrigation	**4.9**	**80.3**	**0.0**	**0.0**	**14.8**	**19.8(16)**	**80.3(64.7)**	**100(80.6)**
Farm ponds	13.5	32.8	0.0	0.0	53.7	67.2(15)	32.9(7.3)	100(22.3)
Percolation tanks/ minor irrigation tanks	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.7)	100(4.7)
Sprinkler and drip irrigation	1.8	98.2	0.0	0.0	0.0	1.9(1)	98.2(52.8)	100(53.8)
Organic farming / bio fertilizer	**2.5**	**92.7**	**4.3**	**0.5**	**0.0**	**6.9(3.1)**	**93.2(42.4)**	**100(45.4)**
Others (organic farming & bio-fertilizer)	1.3	98.7	0.0	0.0	0.0	1.4(0.6)	98.7(39.3)	100(39.8)
Promotion of bio fertilizer	48.2	51.8	0.0	0.0	0.0	48.3(0.7)	51.8(0.7)	100(1.4)
Promotion of organic farming	0.0	5.6	84.5	9.8	0.0	84.6(2)	15.5(0.4)	100(2.4)
Vermi composting	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Seed	**34.3**	**12.7**	**38.2**	**14.8**	**0.0**	**72.5(31)**	**27.6(11.8)**	**100(42.7)**
Others (seed)	0.0	9.6	90.4	0.0	0.0	90.5(0.6)	9.6(0.1)	100(0.6)
Seed distribution	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.8)	100(1.8)
Seed farm	35.0	0.0	65.0	0.0	0.0	100(5)	0(0)	100(5)
Seed processing centers and storage	69.0	0.0	31.0	0.0	0.0	100(13)	0(0)	100(13)
Seed production	21.2	18.9	22.7	37.1	0.0	44(7.5)	56.1(9.6)	100(17.1)
Seed testing lab	0.0	0.0	100.0	0.0	0.0	100(4.7)	0(0)	100(4.7)
Tissue culture	44.3	55.7	0.0	0.0	0.0	44.3(0.4)	55.8(0.5)	100(0.8)
Research	**63.4**	**3.6**	**32.8**	**0.3**	**0.0**	**96.2(32.4)**	**3.9(1.3)**	**100(33.7)**

Agri research project	15.8	2.0	81.6	0.7	0.0	97.4(13.2)	2.7(0.4)	100(13.6)
Agri research/ teaching facility (infrastructure)	95.4	4.6	0.0	0.0	0.0	95.5(19.2)	4.6(1)	100(20.2)
Fertilizers and INM	**59.2**	**16.8**	**24.0**	**0.0**	**0.0**	**83.2(17.2)**	**16.9(3.5)**	**100(20.6)**
Fertilizer labs	100.0	0.0	0.0	0.0	0.0	100(2)	0(0)	100(2)
Micro nutrients labs	78.1	21.9	0.0	0.0	0.0	78.2(0.3)	21.9(0.1)	100(0.4)
Other labs	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
Soil testing lab	55.6	16.9	27.4	0.0	0.0	83.1(15)	17(3.1)	100(18.1)
Extension	**63.4**	**5.6**	**31.0**	**0.0**	**0.0**	**94.4(14.8)**	**5.7(0.9)**	**100(15.7)**
Infrastructure	0.0	1.0	99.0	0.0	0.0	99(4.9)	1.1(0.1)	100(5)
Kvks / knowledge centers / dissemination	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
New approaches to extension	99.0	1.0	0.0	0.0	0.0	99(9)	1.1(0.1)	100(9.1)
Others (extension)	86.3	13.7	0.0	0.0	0.0	86.4(1)	13.7(0.2)	100(1.2)
Training/ study tour	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
IPM	**5.8**	**50.6**	**43.5**	**0.0**	**0.0**	**49.4(6)**	**50.7(6.1)**	**100(12)**
Farmers field schools	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
IPM labs	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.7)	100(0.7)
Others (IPM)	64.1	1.0	34.9	0.0	0.0	99(1.1)	1.1(0.1)	100(1.1)
Pest surveillance	0.0	4.5	95.5	0.0	0.0	95.6(1.8)	4.5(0.1)	100(1.9)
Promotion of IPM	0.0	62.7	37.3	0.0	0.0	37.3(3.1)	62.8(5.3)	100(8.4)
Fisheries	**37.9**	**62.1**	**0.0**	**0.0**	**0.0**	**38(4)**	**62.1(6.5)**	**100(10.5)**
Farmers fish ponds/ assistance including training	68.1	31.9	0.0	0.0	0.0	68.1(4)	32(1.9)	100(5.9)
Fish marketing	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.6)	100(4.6)
Infrastructure/ ponds of fisheries/ dept/ agency	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Non farm activities	**0.0**	**35.5**	**64.5**	**0.0**	**0.0**	**64.6(6.4)**	**35.5(3.6)**	**100(10)**
Others (NFA)	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.5)	100(1.5)
Post harvest processing facilities	0.0	24.8	75.2	0.0	0.0	75.3(6.4)	24.8(2.2)	100(8.6)
Cooperatives and cooperation	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100(3)**	**0(0)**	**100(3)**
Other facilities	100.0	0.0	0.0	0.0	0.0	100(3)	0(0)	100(3)
Sericulture	**0.0**	**0.0**	**100.0**	**0.0**	**0.0**	**100(0.2)**	**0(0)**	**100(0.2)**
Cocoon production	0.0	0.0	100.0	0.0	0.0	100(0.2)	0(0)	100(0.2)
Grand total	**34.9**	**27.5**	**23.8**	**3.9**	**9.9**	**68.7(1033.4)**	**31.4(472.9)**	**100(1506.3)**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 6.2.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. Crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	Percentage of RKVY expenditure to agri. expenditure
2002-03	2748	999	3747	16400	22.8	14.9	
2003-04*	3145	2285	5430	19315	28.1	15.5	
2004-05	1312	1877	3188	18150	17.6	9.7	
2005-06	1232	2266	3497	20001	17.5	8.7	
2006-07	1365	3626	4991	22117	22.6	12.5	
10th Plan	**9802**	**11052**	**20853**	**95982**	**21.7**	**12.3**	
2007-08	1798	2922	4720	22622	20.9	10.9	
2008-09	2131	5537	7668	28840	26.6	19.0	
2009-10	2500	3083	5582	30569	18.3	13.9	**3.9**
2010-11	1897	2758	4655	32466	14.3	9.6	
2011-12*	2556	3538	6094	33928	18.0	11.8	
11th Plan	**10882**	**17838**	**28719**	**148425**	**19.6**	**13.0**	
% change over 10th plan	**11.0**	**61.4**	**37.7**	**54.6**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes irrigation and flood control

Budgetary expenditure is accounts only Developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 6.2.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	1599.2 (7.6)	4780.2 (12.6)	198.9
2	Soil and Water Conservation	378.5 (1.8)	1460.7 (3.9)	286.0
3	Animal Husbandry	431.8 (2.1)	1040.1 (2.8)	140.9
4	Dairy Development	16.4 (0.1)	195.9 (0.6)	1095.9
5	Fisheries	252 (1.2)	475.4 (1.3)	88.6
6	Forestry and Wild Life	1379.2 (6.6)	2765.2 (7.3)	100.5
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	78.2 (0.4)	343.2 (0.9)	338.9
9	Agricultural Research and Education	551 (2.6)	1370.1 (3.6)	148.7
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	210.5 (1)	569.7 (1.5)	170.7
12	Other Agricultural Programmes	12.4 (0.1)	88.7 (0.3)	619.9
13	Major and Medium Irrigation	4744.4 (22.4)	1083.7 (2.9)	-77.2
14	Minor Irrigation	695.2 (3.3)	1469.5 (3.9)	111.4
15	Flood Control and Drainage	29.1 (0.2)	148.2(0.4)	410.3
16	Others	10818.6 (51.1)	22398.2 (58.7)	107.0
	Total	**21195.7 (100)**	**38188.4 (100)**	**80.17**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others;
Figures in the Parenthesis indicate percentage to their respective total.

Table 6.2.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

Sector	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Agri and Allied	16.1	17.2	15.8	15.4	13.4	12.0	13.2	12.9
Industry	40.0	39.9	40.3	40.2	40.1	43.7	42.4	41.1
Services	43.9	42.9	44.0	44.4	46.5	44.3	44.5	46.0
Aggregate	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05)

Table 6.2.8: Growth in State Agricultural Economy

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-6.8	8.1	95	106	112.1	26447
2003-04	39.9	14.8	99	114	115.9	35603
2004-05	-6.8	8.9	97	113	115.5	33555
2005-06	23.1	14.9	97	115	118.2	41413
2006-07	-0.7	8.4	98	118	120.5	40778
10th Plan Average	**9.7**	**11.0**	**97**	**113**	**116.5**	**35560**
2007-08	8.7	11.0	103	121	117.5	42182
2008-09	-7.2	6.8	103	117	113.1	39157
2009-10	-0.7	11.2	103	111	108.1	38868
2010-11	21.0	10.0	103	122	118.9	47042
2011-12	6.3	8.5	103	122	118.9	50015
11th Plan Average	**5.6**	**9.5**	**103**	**119**	**115.3**	**43453**

Source: Directorate of Economics and Statistics, GOI
Note:*land productivity = agricultural GSDP/ha of NSA**)**

Table 6.2.9: Trend in Inputs Use in Gujarat

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	30.5	36.4	32.1	119.4	34.2	77.7
2003-04	33.9	41.1	34.4	121.3	36.0	94.7
2004-05	35.3	42.8	36.2	121.3	38.0	99.5
2005-06	39.1	47.6	40.2	121.9	41.4	111.1
2006-07	42.4	52.8	43.2	124.6	44.7	113.2
10th Plan Average	**36.2**	**44.1**	**37.2**	**121.7**	**38.9**	**99.2**
2007-08	43.4	56.1	42.1	129.5	46.4	132.8
2008-09	43.4	53.1	42.1	122.5	45.6	140.5
2009-10	43.4	49.3	42.1	113.6	44.2	147.2
2010-11	42.3	56.2	41.1	132.7	45.9	174.1
2011-12	42.3	42.3	41.1	100.0	34.6	155.6
11th Plan Average	**42.9**	**51.4**	**41.7**	**119.7**	**43.3**	**150.0**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column 6= Gross irrigated area /Gross sown area*100

Table 6.2.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	4.6	19.3	7.7	3.0	5.8	2.9
Wheat	24.0	31.9	2.2	4.7	11.7	5.1
Jowar	-6.4	-5.0	-0.1	1.7	9.7	7.9
Bajra	0.3	2.0	-0.4	-0.1	6.5	6.4
Maize	3.3	-11.1	-14.8	0.5	21.8	24.7
Ragi	-2.4	-6.4	-2.0	2.5	10.0	7.0
Small Millets	40.2	149.9	34.3	31.7	67.9	17.4
Coarse Cereals	0.6	-4.8	-6.5	0.0	10.5	10.5
Total Cereals	6.2	11.6	2.5	1.9	9.2	6.0
Gram	48.5	86.7	13.1	2.8	9.9	5.9
Arhar/Tur	-2.3	4.8	8.7	-3.1	4.8	8.8
Other Pulses	7.1	13.8	2.4	-20.0	-5.4	-5.6
Total Pulses	7.7	15.2	5.7	-0.1	8.0	8.1
Total Foodgrains	6.5	11.9	2.7	1.4	9.1	6.5
Groundnut	-1.1	42.9	45.1	-0.9	29.8	29.4
Sesamum	-0.9	-6.0	-8.9	-5.5	20.8	28.4
Rapeseed & Mustard	12.7	22.8	4.6	-9.9	-6.4	5.0
Castor	0.2	10.9	7.3	-8.2	-6.1	-18.3
Soyabean	60.0	45.8	-3.9	1.4	17.9	14.1
Total Oilseeds	0.1	29.4	25.8	2.2	21.4	18.3
Total Fibres	7.1	45.7	38.4	-18.0	-15.4	-17.8
Sugarcane	4.5	5.0	0.6	0.5	-3.4	-2.4

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 6.2.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	3.9	0.0	4.0	10.9
2003-04	5.5	0.0	15.5	-15.8
2004-05	5.0	18.2	13.2	-3.0
2005-06	3.2	38.5	14.8	15.5
2006-07	8.2	0.0	34.3	1.8
10th plan	**5.2**	**11.3**	**16.4**	**1.9**
2007-08	5.0	-5.6	6.4	-3.4
2008-09	6.0	11.8	53.5	6.1
2009-10	5.5	10.5	0.7	0.7
2010-11	5.4	4.8	4.0	0.4
2011-12	-	-	-	1.1
11th plan*	**5.5**	**5.4**	**16.2**	**1.0**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

6.3 MADHYA PRADESH

6.3.1. Background Information

Madhya Pradesh is the second largest State in India with a geographical area of 308,252 sq.km, constituting 9.38 per cent of the country's total area.The major perennial rivers flowing in the State are Narmada, Betwa and Chambal. According to 2011 Population Census, the total population of the State stood at 72 million and it ranks 6th among all the States in India.

Madhya Pradesh is predominantly an agrarian economy with agriculture, animal husbandry and fisheries playing a significant role for promoting growth in the State economy. The State has greater dependence on agriculture from an economic as well as employment perspective. Net sown area constitute about 49.1 per cent and gross cropped area about 71.5 per cent of the of the State's total geographical area during 2011-12. The cropping intensity is estimated at around 146 per cent. As compared to other States, composition of the Madhya Pradesh economy has not undergone much change in the last one decade and has remained more or less static. Share of agriculture in GSDP was 24.3 per cent in 2002-03, which has actually increased to 28.1 per cent in 2005-06 and then marginally declined to 24.2 per cent in 2012-13. It implies that agriculture plays a major role for accelerating growth of the overall State economy.

But, major concerns about agricultural development in Madhya Pradesh are low productivity of major crops and low investment in agricultural infrastructures. Additional area brought under irrigation remained low even though gross cropped area has increased considerably over time. Evidences show that many districts suffer from low irrigation and low productivity situation in the absence of viable dry land farming technology. In this regard, RKVY launched in August 2007 promises to address issues related to low productivity and make appropriate investments to augur growth in agriculture. The present chapter analyses implementation of RKVY in Madhya Pradesh at the macro level during the 11th Plan.

6.3.2. Distribution of Allocation and Expenditure under RKVY by Sectors

As per the expenditure norms, 306 projects were implemented in Madhya Pradesh even though number of projects proposed for implementation was 367 during the 11th Plan (Table 6.3.1). Under RKVY, State Government is given freedom to make interventions, in the identified priority sectors, for achieving high growth rate in agriculture. About Rs. 1791.9 crore has been spent on these 306 projects. The financial efficiency of implementation of projects under RKVY can be judged from the amount allocated and its expenditure. It is expected that the allocation and expenditure would move in the same direction. Nonetheless, it can be observed that expenditure does not match with the allocation as the entire allocated amount might not have

been released for spending on the targeted activities. Therefore, for the purpose of analysis, actual expenditure has been taken into account.

It can be seen from the Table 6.3.1 and Figure 6.3 that micro/minor irrigation has accounted for the highest amount of expenditure (23.5 per cent) followed by seed (17.3 per cent) and animal husbandry (16.1 per cent). Other important sectors that State Government has given priority for spending include agriculture mechanization (10.2 per cent), crop development (8.2 per cent) and extension (6.1 per cent). These six sectors have accounted for about 80 per cent of the total expenditure under RKVY. Activities like information technology, non-farm activities, innovative programmes/training/capacity building and organic farming/bio fertilisers received relatively low priority. Although expenditure for natural resource management constituted only 2.2 per cent, expenditure per project was the highest at Rs. 38.4 crore. The next highest per project expenditure was observed for the sectors such as micro/minor irrigation (Rs. 16.2 crore) and crop development (Rs. 14.6 crore). It can be observed that expenditure-allocation ratio was more or less equal to one for the sectors such as agriculture mechanization, natural resource management, innovative programmes, training and capacity building and information technology. It implies that these sectors have achieved financial efficiency in expending the allocated amount. The overall expenditure-allocation ratio for the State as a whole was 0.8 indicating that out of total allocated amount under RKVY; about 80 percent was actually spent.

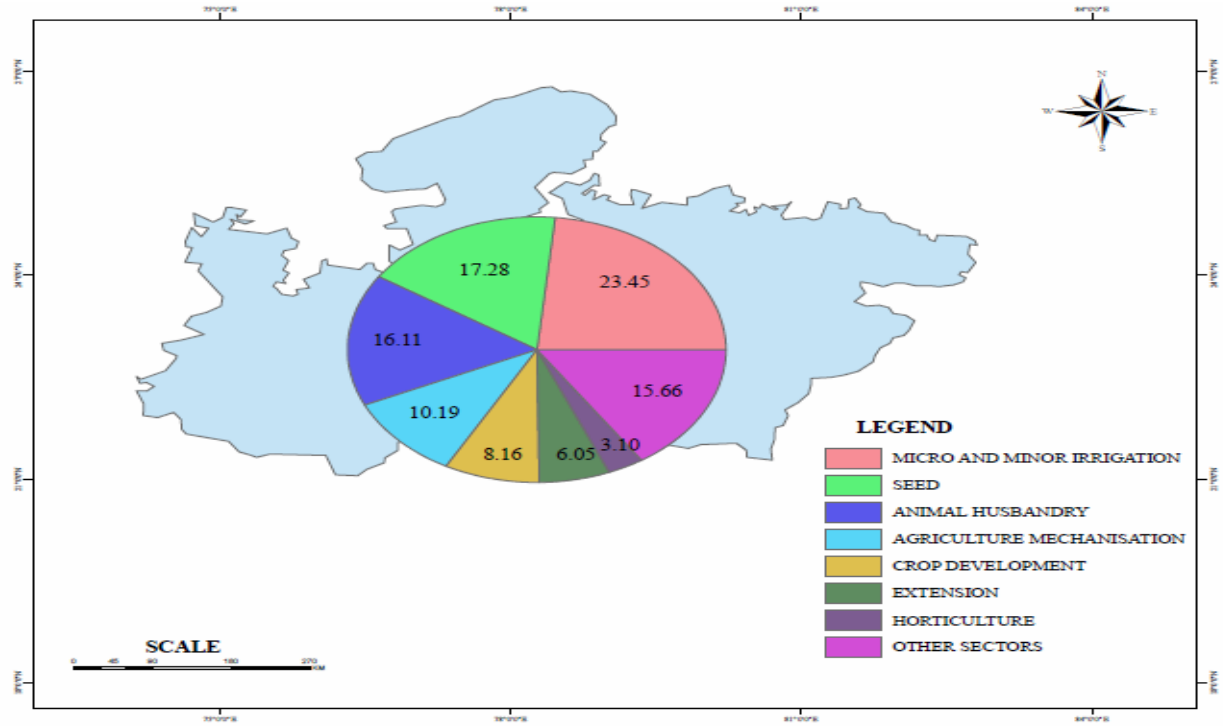

Figure 6.3: Share of Expenditure across Sectors

Note: Other sectors include fisheries, NRM, fertilisers and INM, IPM, Marketing& PHM, agricultural research, dairy development, organic farming / bio fertiliser, innovative programmes, Non-farm activities and information technology

6.3.3. Sector-Wise Size of the Projects based on the Expenditure

Table 6.3.2 presents the number and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY has been divided into four categories viz., less than Rs. 1 crore, Rs. 1-10 crore, Rs. 10-25 crore and more than Rs 25 crore. It can be observed that about 31 per cent of the projects with 2.05 per cent of the total expenditure have fallen under the expenditure category of less than one crore rupees. It implies that relatively a large number of projects are small projects implemented mainly under the sectors such as fisheries, non-farm activities, horticulture, agriculture mechanization, marketing and post harvest management and research. Similarly, about 52 per cent of the projects with expenditure share of 32 per cent came under the category of Rs. 1 to 10 crore. About 13 per cent of projects with 35 per cent of expenditure have fallen under category of Rs. 10-25 crore. The large sized projects with more than Rs. 25 crore expenditure comprised only 4 per cent of the total number of projects and 31 per cent of the expenditure. The large projects have been implemented under the sectors such as natural resource management, micro/minor irrigation, crop development, agricultural mechanization and seed.

6.3.4. Sector-Wise Expenditure according to Status

The distribution of projects and expenditure by the status of implementation is given in Table 6.3.3. The project implementation status is recorded under projects in-progress/on-going, completed/substantially completed and abandoned/not yet implemented. Out of total number of projects, only 43 per cent was reported completed/substantially completed. While 53 per cent of the total projects was reported in progress/on-going, 4 per cent (15 projects) was shown abandoned/not yet implemented.

Out of total expenditure incurred, more than 90 per cent was spent on projects completed or substantially completed and the remaining on projects in progress/ongoing. Projects under natural resource management and information technology sectors have been reported completed, while projects under all other sectors are reported on-going. Among the completed projects, micro/minor irrigation has accounted for the highest proportion of expenditure followed by seed and animal husbandry. In case of on-going projects, micro/minor irrigation has accounted for the highest proportion of expenditure followed by animal husbandry, crop development and agriculture mechanization. Among these sectors, micro/minor irrigation projects appear to be large and long term based, which comprises check dams/water courses bunds, percolation tanks, pump sets and sprinkler and drip irrigations. Sectors such as fisheries and agricultural mechanization are shown implementation of 32 projects and 31 projects, respectively. Under seed sector, 22 projects were completed with 16 on-going projects.

6.3.5. Sector Wise distribution of Project by Nature

Table 6.3.4 presents sector and sub-sector-wise expenditure on infrastructure and non infrastructure projects under normal, national and State flagship programmes inMadhya Pradesh. Out of the total expenditure of Rs. 1791.9 crore under RKVY in Madhya Pradesh, about 22.9 per cent was spent on development of infrastructure in agriculture and allied activities and remaining 77.2 per cent was spent on non-infrastructural activities. Infrastructure expenditure under normal and State flagship projects accounted for 21.2 per cent and 1.6 per cent of the total expenditure, respectively. The non-infrastructure expenditure under normal, State flagship and national flagship projects accounted for 72.7 per cent, 4.1per cent and 0.4 per cent of the total expenditure, respectively. The total expenditure incurred on infrastructure and non-infrastructure assets projects was Rs. 409.1 crore and Rs. 1382.9 crore.

The sectors such as micro/minor irrigation accounted for highest share of Rs. 172.6 crore out of total infrastructure expenditure under RKVY followed by agriculture mechanisation with Rs. 105 crore. Within the subsectors, machines and equipment assistance has accounted for Rs. 105 crore followed by pump sets (diesel/electric) with Rs. 86.6 crore) and percolation tanks/minor irrigation tanks with Rs. 49 crore. Expenditure under non-infrastructure component was the highest for seed distribution.

6.3.6. Assessment of RKVY and Concluding Remarks

In Madhya Pradesh, 306 projects were implemented with the expenditure of Rs. 1791.9 crore under the RKVY. Analysis of expenditure pattern across sectors has revealed that micro/minor irrigation has accounted for the highest share of expenditure followed by seed and animal husbandry. In addition, State Government has spent considerable amount on agricultural mechanisation, crop development and extension. These sectors have accounted for about 80 per cent of the total expenditure indicating that the State of Madhya Pradesh has given priority for development of these sectors to accelerate growth in agriculture.

Expenditure-allocation ratio indicates the financial efficiency of implementation of various projects. This ratio was more or less equal to one for the sectors such as agriculture mechanisation, natural resource management, innovative programmes, training and capacity building and information technology. Out of total expenditure, about 90 per cent was spent on completed projects and remaining on projects in progress. Among the completed as well as on-going projects, micro/minor irrigation has accounted for a relatively high share of expenditure. Further, large projects with expenditure of more than Rs. 25 crorewere implemented under the sectors such as natural resource management, micro/minor irrigation, crop development, agricultural mechanization and seed.

Notwithstanding, it would be interesting to analyse the expenditure pattern under RKVY in conjunction with growth performance of agriculture, input use and State budgetary allocation[3]. An important thrust under RKVY is to incentivize the State Governments, which would in turn increase the budgetary allocation for agriculture and allied sector and thus achieve high growth in the sector. It can be observed from the Table 6.3.5 that total budgetary allocation at 2004-05 prices for agriculture and allied sector during 10th Plan was Rs. 14,665 crore, which increased considerably to Rs. 23,740 crore during the 11th Plan, with an increase of about 62 per cent. Interestingly, capital expenditure on agriculture has increased substantially by 47.5 per cent from Rs. 6,724 crore during 10th Plan to Rs. 9,918 crore in the 11th Plan. Increase in budgetary spending indicates that RKVY has played a catalyzing role to accelerate the public expenditure on agriculture.Although both revenue and capital expenditure increased considerably in the 11th Plan as compared to 10th Plan,per cent share of agriculture in the State budget increased from 19.9per cent to 21.2per centonly. Out of total expenditure in agriculture in the State, RKVY share wasestimated at 5.4 per cent. Analysis of composition of expenditure revealed that irrigation and flood control accounted for the highest share of budgetary expenditure followed by forestry wild life and crop husbandry during the 11th Plan (Table 6.3.6).

Agriculture and allied activities dominate the composition of Gross State Domestic Product (GSDP) with the contribution of industry and service sectors being almost constant over time (Table 6.3.7). Growth in GSDP was exceptionally high when agricultural sector performed well and the GSDP growth had slumped when growth in agriculture was poor. Average annual growth in agricultural GSDP during the 10th Plan was 4.6 per cent, which had increased to 6.9 per cent in 11th Plan. The corresponding growth in overall GSDP was 5.0 per cent and 9.2 per cent, respectively (Table 6.3.8). A relative high growth in agriculture led to increase in average land productivity from Rs. 20948/ha in the 10th Plan to Rs. 26451/ha in the 11th Plan.

The trend in use of improved inputs appears to be impressive during the most recent period. The average net irrigated area increased from 56.4 lakh hectare in the 10th Plan to 68.2 lakh hectare during the 11th Plan (Table 6.3.9). Irrigation intensity increased only marginally during the recent years. However, fertiliser consumption registered impressive trend from an average of 50.3 Kg/ha in the 10th Plan to 78.1 Kg/ha in the 11th Plan. Increased use of improved inputs led to rise in the yield of most crops in the recent period (Table 6.3.10). In fact, annual growth in the yield of rice, wheat, jowar, bajra, maize, gram, groundnut and sesamum was impressive during the 11th Plan. As a result, growth in the production of these crops was also considerably high. Similarly, annual growth in the livestock products especially milk and meat was very high during the eleventh Plan period as compared to the 10th Plan (Table 6.3.11). Milk production registered

[3]Attempt was also made to analyse the impact in terms of output and outcome and examine any divergence from stated goals and actual implementation. The expected output and outcome are available for the sub-components of the sectors (Table 12). But, it is very difficult to assess whether the expected goals have been achieved across the sub-components of the sectors due to lack of reliable data. However, efforts will be made to examine the actual output and outcome for some selected projects through field survey.

an average growth rate of 4.2 per cent, while meat production recorded a growth rate of 21.5 per cent during 2007-08 to 2010-11, the year 2007 being the first year of launching of RKVY. It is clear from the above discussion that RKVY seems to be contributing to agricultural growth in the State of Madhya Pradesh.

TABLES

Table 6.3.1: Sector-Wise Allocation and Expenditure under 11th Five Year Plan

Sectors	No. of projects	Allocation (Rs. crore)	Expenditure (Rs. crore)	Expenditure allocation ratio (3/2)	Expenditure per Project (Rs. crore)
Micro/Minor Irrigation	26(28)	483.8(20.8)	420.2(23.5)	0.9	16.2
Seed	35(40)	402.0(17.3)	309.6(17.3)	0.8	8.8
Animal Husbandry	68(86)	396.2(17.1)	288.7(16.2)	0.7	4.2
Agriculture Mechanization	21(25)	183.4(7.9)	182.6(10.2)	1.0	8.7
Crop Development	10(11)	173.8(7.5)	146.1(8.2)	0.8	14.6
Extension	22(23)	129.6(5.6)	108.3(6.1)	0.8	4.9
Horticulture	26(33)	136.8(5.9)	55.5(3.1)	0.4	2.1
Fisheries	42(50)	82.7(3.6)	39.2(2.2)	0.5	0.9
NRM	1(1)	38.4(1.7)	38.4(2.2)	1.0	38.4
Fertilizers & INM	8(13)	88.6(3.9)	34.7(2)	0.4	4.3
IPM	5(6)	39.9(1.8)	34.6(2)	0.9	6.9
Marketing & PHM	11(13)	39.8(1.8)	30.0(1.7)	0.8	2.7
Research	9(12)	32.7(1.5)	28.8(1.7)	0.9	3.2
Dairy Development	3(4)	27.2(1.2)	20.1(1.2)	0.7	6.7
Organic Farming / Bio Fertilizer	11(14)	31.8(1.4)	19.9(1.2)	0.6	1.8
Innovative Programmes	4(4)	19.6(0.9)	19.3(1.1)	1.0	4.8
Non Farm Activities	3(3)	14.3(0.7)	10.1(0.6)	0.7	3.4
IT	1(1)	5(0.3)	5(0.3)	1.0	5.0
Grand Total	**306(367)**	**2326.21(100)**	**1791.84(100)**	**0.8**	**5.9**

Source: www.rkvy.nic.in as on April, 2013

Note*:* Figures in parenthesis under No. of project refers to projects as per allocation. Figures in the parenthesis in other columns indicates the percentage to the respective total; INM: Integrated Nutrient Management; IPM: Integrated Pest Management; NRM: Natural resource management ; PHM: Post Harvest Management; IT: Information Technology;
if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 6.3.2: Project Classification according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**
Micro/minor irrigation	3.9	0.0	30.8	9.7	50.0	46.1	15.4	44.2	26(100)	420.3(100)
Seed	22.9	1.3	51.4	18.1	17.2	34.4	8.6	46.2	35(100)	309.7(100)
Animal husbandry	19.1	1.7	70.6	55.3	8.8	32.6	1.5	10.4	68(100)	288.8(100)
Agriculture mechanisation	38.1	1.8	42.9	26.0	9.5	14.7	9.5	57.5	21(100)	182.7(100)
Crop development	10.0	0.1	40.0	12.6	40.0	49.8	10.0	37.6	10(100)	146.2(100)
Extension	31.8	4.1	50.0	44.5	18.2	51.5	0.0	0.0	22(100)	108.4(100)
Horticulture	46.2	9.1	53.9	91.0	0.0	0.0	0.0	0.0	26(100)	55.6(100)
Fisheries	76.2	22.9	23.8	77.1	0.0	0.0	0.0	0.0	42(100)	39.3(100)
NRM	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	1(100)	38.4(100)
Fertilisers and INM	0.0	0.0	87.5	61.7	12.5	38.3	0.0	0.0	8(100)	34.8(100)
IPM	0.0	0.0	80.0	54.6	20.0	45.4	0.0	0.0	5(100)	34.7(100)
Marketing & PHM	36.4	4.6	54.6	54.5	9.1	40.9	0.0	0.0	11(100)	30.1(100)
Research	33.3	8.5	55.6	48.4	11.1	43.1	0.0	0.0	9(100)	28.9(100)
Dairy development	0.0	0.0	66.7	48.1	33.3	51.9	0.0	0.0	3(100)	20.2(100)
Organic farming / bio fertiliser	27.3	7.7	72.7	92.3	0.0	0.0	0.0	0.0	11(100)	20(100)
Innovative programmes	0.0	0.0	75.0	38.9	25.0	61.1	0.0	0.0	4(100)	19.4(100)
Non farm activities	66.7	4.7	33.3	95.4	0.0	0.0	0.0	0.0	3(100)	10.2(100)
IT	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	5(100)
Grand Total	**30.7**	**2.1**	**52.0**	**32.0**	**13.4**	**34.9**	**3.9**	**31.1**	**306(100)**	**1791.9(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Nos: Number of projects, Expd: Expenditure;
INM: Integrated nutrient management
Figures in the parenthesis are percentage to the respective total

Table 6.3.3: Sector-Wise Allocation and Expenditure by Status of the Projects (2006-07 to 2011-12)

(Rs. Crore)

Sectors	In progress /Ongoing		Completed/ Substantially completed		Abandoned/not yet implemented	
	No.	**Exp.**	**No.**	**Exp.**	**No.**	**Exp.**
Micro/Minor Irrigation	14	186.4	13	233.9	1	0.0
Seed	16	119.5	22	190.2	2	0.0
Animal Husbandry	46	179.2	31	109.5	9	0.0
Agriculture Mechanization	17	133.2	6	49.4	2	0.0
Crop Development	10	142.1	1	4.0	0	0.0
Extension	13	62.3	10	46.1	0	0.0
Horticulture	19	35.4	14	20.1	0	0.0
Fisheries	18	18.4	32	20.8	0	0.0
NRM			1	38.4	0	0.0
Fertilizers & INM	8	26.0	4	8.8	1	0.0
Integrated Pest Management	3	23.7	3	10.9	0	0.0
Marketing & PHM	8	27.4	5	2.6	0	0.0
Research	11	16.4	1	12.4	0	0.0
Dairy Development	2	10.5	2	9.7	0	0.0
Organic Farming / Bio Fertilizer	6	7.7	8	12.2	0	0.0
Innovative Programmes	1	2.0	3	17.4	0	0.0
Non Farm Activities	2	10.2	1	0.0	0	0.0
IT			1	5.0	0	0.0
Grand Total	**194**	**1000.5**	**158**	**791.4**	**15**	**0.0**

Source: http://rkvy.nic.in/ as on April, 2013.

Note: INM: Integrated nutrient management, PHM: Post harvest management; No.: No. of projects

Table 6.3.4: Sector and Sub-Sector Wise Nature of the Project

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		National flagship project	Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Non infra structure	Infra structure	Non infra structure	
Micro/minor irrigation	**38.1**	**58.9**	**3.0**	**0.0**	**0.0**	**41.1(172.6)**	**59(247.8)**	**100(420.3)**
Check dams/ water courses bunds	58.7	41.3	0.0	0.0	0.0	58.7(19.7)	41.4(13.9)	100(33.5)
Percolation tanks/ minor irrigation tanks	95.4	4.6	0.0	0.0	0.0	95.5(49)	4.6(2.4)	100(51.4)
Pump sets (diesel/electric)	55.4	44.6	0.0	0.0	0.0	55.5(86.6)	44.6(69.7)	100(156.3)
Setting up/ strengthening of market infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(69)	100(69)
Sprinkler and drip irrigation	0.0	65.1	34.9	0.0	0.0	35(12.5)	65.1(23.3)	100(35.8)
Tube wells	6.5	93.5	0.0	0.0	0.0	6.5(4.8)	93.6(69.6)	100(74.4)
Seed	**7.9**	**75.4**	**0.0**	**16.0**	**0.6**	**8(24.6)**	**92.1(285.1)**	**100(309.7)**
Maize	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Others (seed)	1.7	2.7	0.0	87.0	8.7	1.7(0.4)	98.4(22.7)	100(23)
Seed distribution	0.0	90.5	0.0	9.5	0.0	0(0)	100(153.6)	100(153.6)
Seed farm	36.9	63.1	0.0	0.0	0.0	36.9(7.2)	63.2(12.3)	100(19.5)
Seed processing centers and storage	0.0	9.1	0.0	90.9	0.0	0(0)	100(5.5)	100(5.5)
Seed production	15.6	84.4	0.0	0.0	0.0	15.6(14.6)	84.5(79.2)	100(93.7)
Seed testing lab	19.8	0.0	0.0	80.2	0.0	19.9(2.5)	80.2(10)	100(12.5)
Animal husbandry	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(288.8)**	**100(288.8)**
Animal health	0.0	100.0	0.0	0.0	0.0	0(0)	100(76.2)	100(76.2)
Breed improvement	0.0	100.0	0.0	0.0	0.0	0(0)	100(29.7)	100(29.7)
Extension and training	0.0	100.0	0.0	0.0	0.0	0(0)	100(28)	100(28)
Feed and fodder	0.0	100.0	0.0	0.0	0.0	0(0)	100(37.7)	100(37.7)
Infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(110.2)	100(110.2)
Others (animal husbandry)	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Poultry	0.0	100.0	0.0	0.0	0.0	0(0)	100(5.2)	100(5.2)
Agriculture mechanisation	**57.5**	**42.5**	**0.0**	**0.0**	**0.0**	**57.5(105)**	**42.6(77.7)**	**100(182.7)**
Machines and equipment assistance	80.2	19.8	0.0	0.0	0.0	80.3(105)	19.8(26)	100(131)
Others (agri. Mechanisation)	0.0	100.0	0.0	0.0	0.0	0(0)	100(51.8)	100(51.8)
Crop development	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(146.2)**	**100(146.2)**

Coarse cereals	0.0	100.0	0.0	0.0	0.0	0(0)	100(20)	100(20)
Oilseeds and pulses	0.0	100.0	0.0	0.0	0.0	0(0)	100(55)	100(55)
Others (crop development)	0.0	100.0	0.0	0.0	0.0	0(0)	100(44.4)	100(44.4)
Paddy	0.0	100.0	0.0	0.0	0.0	0(0)	100(8.4)	100(8.4)
Sugarcane	0.0	100.0	0.0	0.0	0.0	0(0)	100(2.6)	100(2.6)
Wheat	0.0	100.0	0.0	0.0	0.0	0(0)	100(16)	100(16)
Extension	**12.7**	**74.3**	**13.1**	**0.0**	**0.0**	**25.8(27.9)**	**74.3(80.5)**	**100(108.4)**
Infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(26.1)	100(26.1)
Kvks / knowledge centres / dissemination	0.0	100.0	0.0	0.0	0.0	0(0)	100(36.1)	100(36.1)
New approaches to extension	0.0	21.6	78.4	0.0	0.0	78.5(14.2)	21.6(3.9)	100(18.1)
Training/ study tour	48.7	51.3	0.0	0.0	0.0	48.8(13.8)	51.3(14.5)	100(28.2)
Horticulture	**13.5**	**86.5**	**0.0**	**0.0**	**0.0**	**13.6(7.6)**	**86.5(48)**	**100(55.6)**
Area expansion	0.0	100.0	0.0	0.0	0.0	0(0)	100(23.3)	100(23.3)
Development of horticulture farms/ facilities	25.6	74.4	0.0	0.0	0.0	25.7(5)	74.4(14.4)	100(19.3)
Fruits	7.9	92.1	0.0	0.0	0.0	7.9(0.1)	92.2(0.9)	100(1)
Nurseries and green houses	21.8	78.2	0.0	0.0	0.0	21.9(0.9)	78.2(3.3)	100(4.2)
Others (horticulture)	97.3	2.7	0.0	0.0	0.0	97.3(1.7)	2.8(0.1)	100(1.7)
Vegetable	0.0	100.0	0.0	0.0	0.0	0(0)	100(6.3)	100(6.3)
Fisheries	**32.9**	**66.4**	**0.0**	**0.7**	**0.0**	**32.9(12.9)**	**67.2(26.4)**	**100(39.3)**
Farmers fish ponds/ assistance including training	67.2	31.2	0.0	1.7	0.0	67.2(11.2)	32.9(5.5)	100(16.7)
Fish marketing	12.4	87.6	0.0	0.0	0.0	12.4(0.3)	87.7(1.8)	100(2.1)
Infrastructure/ ponds of fisheries/ dept/ agency	7.2	92.8	0.0	0.0	0.0	7.2(1.5)	92.9(18.7)	100(20.2)
Others (fisheries)	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
NRM	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100(38.4)**	**0(0)**	**100(38.4)**
Water conservation structures and watershed dev	100.0	0.0	0.0	0.0	0.0	100(38.4)	0(0)	100(38.4)
Fertilisers and INM	**21.2**	**78.8**	**0.0**	**0.0**	**0.0**	**21.2(7.4)**	**78.9(27.5)**	**100(34.8)**
Fertiliser labs	54.0	46.0	0.0	0.0	0.0	54.1(4)	46(3.4)	100(7.4)
Micro nutrients labs	0.0	100.0	0.0	0.0	0.0	0(0)	100(8)	100(8)
Soil health cards and soil testing	0.0	100.0	0.0	0.0	0.0	0(0)	100(13.4)	100(13.4)
Soil testing lab	55.5	44.5	0.0	0.0	0.0	55.6(3.4)	44.5(2.7)	100(6.1)
Integrated pest management	**0.0**	**29.5**	**4.9**	**65.6**	**0.0**	**5(1.7)**	**95.1(33)**	**100(34.7)**
IPM labs	0.0	0.0	100.0	0.0	0.0	100(1.7)	0(0)	100(1.7)
Pest surveillance	0.0	24.0	0.0	76.0	0.0	0(0)	100(9.3)	100(9.3)
Promotion of IPM	0.0	33.8	0.0	66.2	0.0	0(0)	100(23.7)	100(23.7)
Marketing & PHM	**2.9**	**97.1**	**0.0**	**0.0**	**0.0**	**3(0.9)**	**97.1(29.2)**	**100(30.1)**

Godowns and warehouses	3.3	96.7	0.0	0.0	0.0	3.3(0.9)	96.8(25.8)	100(26.6)
Others (marketing & PHM)	0.0	100.0	0.0	0.0	0.0	0(0)	100(3.2)	100(3.2)
Setting up/ strengthening of market infrastructure	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Research	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(28.9)**	**100(28.9)**
Agri research project	0.0	100.0	0.0	0.0	0.0	0(0)	100(28.9)	100(28.9)
Dairy development	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(20.2)**	**100(20.2)**
Assistance to dairy unions/ farmers (inc training)	0.0	100.0	0.0	0.0	0.0	0(0)	100(4.5)	100(4.5)
Dairy units to farmers	0.0	100.0	0.0	0.0	0.0	0(0)	100(10.5)	100(10.5)
Promotion of milk collection centres	0.0	100.0	0.0	0.0	0.0	0(0)	100(5.3)	100(5.3)
Organic farming / bio fertiliser	**2.8**	**92.2**	**0.0**	**5.0**	**0.0**	**2.8(0.6)**	**97.3(19.4)**	**100(20)**
Nutrient management	0.0	100.0	0.0	0.0	0.0	0(0)	100(1)	100(1)
Others (organic farming & bio-fertilizer)	0.0	100.0	0.0	0.0	0.0	0(0)	100(1)	100(1)
Promotion of bio fertilizer	0.0	100.0	0.0	0.0	0.0	0(0)	100(1.6)	100(1.6)
Promotion of organic farming	0.0	91.3	0.0	8.7	0.0	0(0)	100(11.6)	100(11.6)
Vermi composting	11.4	88.6	0.0	0.0	0.0	11.4(0.6)	88.7(4.4)	100(4.9)
Innovative programmes	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(19.4)**	**100(19.4)**
Innovative programmes	0.0	100.0	0.0	0.0	0.0	0(0)	100(17.4)	100(17.4)
Others (innovative programmes, training & others)	0.0	100.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Non farm activities	**95.3**	**4.7**	**0.0**	**0.0**	**0.0**	**95.4(9.8)**	**4.7(0.5)**	**100(10.2)**
Others (nfa)	95.7	4.3	0.0	0.0	0.0	95.8(9.8)	4.3(0.5)	100(10.2)
Post harvest processing facilities	0.0	100.0	0.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Information technology	**0.0**	**0.0**	**0.0**	**0.0**	**100.0**	**0(0)**	**100(5)**	**100(5)**
Development of it facilities	0.0	0.0	0.0	0.0	100.0	0(0)	100(5)	100(5)
Grand total	**21.2**	**72.7**	**1.6**	**4.1**	**0.4**	**22.9(409.1)**	**77.2(1382.9)**	**100(1791.9)**

Source: http://rkvy.nic.in/ as on April, 2013

Note*:* Figures in the parenthesis indicates absolute values of expenditure which are in crore.

Table 6.3.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. Crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	Percentage of RKVY expenditure to agri. expenditure
2002-03	1581	1070	2651	11917	22.2	11.1	
2003-04*	1495	1369	2864	14869	19.3	8.8	
2004-05	1543	1758	3301	14446	22.9	10.6	
2005-06	1543	1236	2779	17564	15.8	8.3	
2006-07	1778	1292	3070	15773	19.5	9.0	
10th Plan	**7940**	**6724**	**14665**	**74569**	**19.9**	**9.5**	
2007-08	1970	1756	3726	18057	20.6	11.1	
2008-09	2326	1694	4020	18735	21.5	11.0	
2009-10	2489	1599	4088	21479	19.0	10.1	**5.4**
2010-11	3187	2531	5718	24944	22.9	14.2	
2011-12*	3850	2337	6188	28504	21.7	13.1	
11th Plan	**13821.5**	**9918.1**	**23739.6**	**111720.3**	**21.2**	**11.9**	
% change Over 10th plan	**74.1**	**47.5**	**61.9**	**49.8**			

Source: State Finances, RBI

Note*:* * indicates Revised estimates, rest all accounts; Agriculture and allied activities includes Irrigation and flood control; budgetary expenditure is accounts only developmental expenditure; Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100;

Table 6.3.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	1577.5 (10.6)	5197.1 (15.8)	229.5
2	Soil and Water Conservation	218.1 (1.5)	247.2 (0.8)	13.4
3	Animal Husbandry	808.2 (5.5)	1871.8 (5.7)	131.6
4	Dairy Development	0 (0)	0 (0)	0.0
5	Fisheries	86.7 (0.6)	194.4 (0.6)	124.2
6	Forestry and Wild Life	2904 (19.5)	5300.1 (16.1)	82.5
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	577.2 (3.9)	3093.5 (9.4)	436.0
9	Agricultural Research and Education	255.9 (1.8)	342.2 (1.1)	33.7
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	511.9 (3.5)	1131.6 (3.5)	121.1
12	Other Agricultural Programmes	0 (0)	0 (0)	0.0
13	Major and Medium Irrigation	1182.9 (8)	1263.3 (3.9)	6.8
14	Minor Irrigation	233.9 (1.6)	1046.4 (3.2)	347.5
15	Flood Control and Drainage	0 (0)	139.4 (0.5)	0.0
16	Others	6584.1 (44.1)	13112.8 (39.9)	99.2
	Total	**14940 (100)**	**32939.2 (100)**	**120.5**

Source: State Finances, RBI

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total

Table 6.3.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Sector	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Agriculture and allied	24.2	29.8	27.6	28.1	26.3	24.7	23.9	23.9	22.3	23.4	24.1
Industry	27.5	26	27.1	26.9	28.8	29.1	30.8	30.1	30.6	29.3	27.9
Service	47.8	44.2	45.1	44.8	44.8	46	45.1	45.9	47	47.1	47.9
Aggregate	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: Directorate of Economics and Statistics, GOI (2012-13)

Note: GSDP at constant price (2004-05),

Table 6.3.8: Growth in State Agricultural Economy

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-18.6	-3.9	145	181	124.5	16443
2003-04	36.7	11.4	149	198	132.4	21843
2004-05	-4.3	3.1	150	202	134.9	20860
2005-06	7.0	5.3	150	196	131.0	22336
2006-07	2.3	9.2	147	201	136.5	23226
10th Plan Average	**4.6**	**5.0**	**148**	**196**	**131.9**	**20942**
2007-08	-1.5	4.7	147	204	139.0	22955
2008-09	8.8	12.5	149	207	138.3	24562
2009-10	9.8	9.9	150	214	143.0	26909
2010-11	-0.1	7.1	151	220	145.8	26611
2011-12	17.3	11.8	151	220	145.8	31218
11th Plan Average	**6.9**	**9.2**	**150**	**213**	**142.4**	**26451**

Source: Directorate of Economics and Statistics, GOI
Note:*land productivity = agricultural GSDP/ha of NSA

Table 6.3.9: Trend in Inputs Use in Madhya Pradesh

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	44.9	46.3	31.0	103.0	25.6	36.4
2003-04	56.3	57.8	37.7	102.6	29.2	51.6
2004-05	60.4	61.9	40.3	102.5	30.7	53.4
2005-06	56.8	58.8	37.9	103.5	30.0	47.1
2006-07	63.7	65.4	43.2	102.8	32.5	62.7
10th Plan Average	**56.4**	**58.0**	**38.0**	**102.9**	**29.6**	**50.3**
2007-08	64.2	65.7	43.7	102.3	32.2	63.8
2008-09	65.1	67.1	43.5	103.2	32.5	69.7
2009-10	68.9	71.6	46.0	103.9	33.5	81.4
2010-11	71.4	74.2	47.2	103.9	33.7	87.2
2011-12	71.4	74.2	47.2	103.9	33.7	88.4
11th Plan Average	**68.2**	**70.6**	**45.5**	**103.5**	**33.1**	**78.1**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column 6= Gross irrigated area /Gross sown area*100

Table 6.3.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	-1.3	4.3	4.4	0.4	12.1	11.0
Wheat	2.2	7.0	3.3	4.4	12.3	6.5
Jowar	-1.4	4.6	4.4	-7.2	0.7	8.5
Bajra	3.2	15.1	8.7	-0.6	6.8	7.6
Maize	0.2	-10.4	-10.9	0.1	10.0	9.7
Small Millets	-6.0	-2.4	3.6	-5.7	-1.0	4.9
Barley	-6.2	-6.8	-1.3	9.8	12.6	8.3
Coarse Cereals	-1.5	-4.5	-3.8	-2.6	6.2	8.9
Total Cereals	0.2	2.9	1.6	1.7	10.2	7.9
Gram	-0.5	3.1	2.6	4.6	11.0	5.1
Arhar/Tur	1.1	-0.7	-2.0	11.3	18.7	9.8
Other Pulses	0.3	-5.6	-5.6	-16.5	-19.8	-23.5
Total Pulses	-0.1	0.6	0.2	4.9	9.0	3.2
Total Foodgrains	0.1	2.7	1.7	2.8	9.6	6.3
Groundnut	-1.2	4.2	4.2	1.0	13.4	11.9
Sesamum	8.5	14.7	5.4	10.6	20.9	8.9
Rapeseed & Mustard	10.0	23.6	6.2	3.4	6.5	2.3
Linseed	-5.9	-3.5	2.0	0.7	7.4	6.0
Castor	-7.8	-6.8	1.7	-23.1	-10.6	-13.9
Nigerseed	1.5	3.2	1.4	0.3	-4.3	-4.1
Soyabean	1.6	10.5	9.3	3.6	5.8	2.1
Total Oilseeds	1.9	10.8	8.3	3.4	6.0	2.5
Cotton	3.4	18.2	14.5	2.1	27.4	8.7
Total Fibers	3.2	18.0	14.6	-19.6	7.4	5.5
Sugarcane	9.5	12.0	2.5	2.0	-0.5	-2.4

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 6.3.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.1	4.4	28.4	-11.1
2003-04	0.8	44.9	14.3	20.5
2004-05	2.2	6.7	0.7	22.1
2005-06	14.1	18.8	4.3	-1.6
2006-07	1.5	5.3	1.1	6.5
10th plan	**3.9**	**16.0**	**9.8**	**7.3**
2007-08	3.1	80.0	2.4	-1.8
2008-09	4.3	-5.6	-31.1	7.2
2009-10	4.6	5.9	5.4	-3.4
2010-11	4.8	5.6	7.1	-14.6
2011-12	NA	NA	NA	33.6
11th plan*	**4.2**	**21.5**	**-4.1**	**4.2**

Source: BAHS, www.Indiastat.com

Note: *For Milk, Meat and Egg 2011-12 data are not available

6.4 MAHARASHTRA

6.4.1. Background Information

Maharashtra is located in the western region of India and is bordered by the Arabian Sea on the west, Gujarat and the Union territory of Dadra and Nagar Haveli to the northwest, Madhya Pradesh to the north and northeast, Chhattisgarh to the east, Karnataka to the south, Andhra Pradesh to the southeast and Goa to the southwest. Maharashtra is the third largest State in India with an area of 307,713 sq. km and accounts for 9.36 percent of the country's total geographical area. According to 2011 census report, the total population of the State is 11.24 crore, it ranks 2nd among the Indian States based on population. The population density of the State is 370 per km^2.

Although Maharashtra is a highly industrialized State of India, agriculture continues to be the main occupation of the majority of the population in the State. State has 174.33 lakh ha as net sown area which accounts for 56.65 per cent of the total geographical area of the State. Less than one fourth of the net sown area is under irrigation. The gross cropped area for the triennium ending 2011 was 230.45 lakh ha and the cropping intensity was 132 per cent. Maharashtra is endowed with varying agro-climatic conditions. Main crops grown in the State are wheat, rice, jowar, bajra, and pulses. Cash crops include groundnut, cotton, sugarcane, turmeric, and tobacco. Large areas of the State have been brought under fruit cultivation. The fruits which have added to the treasury of the State are the Nagpur oranges, Alphanso Mangoes, banana and the grapes. Research on agriculture and agricultural products needs to be conducted to tackle the diverse agro-climatic conditions prevalent in the State.

Concerned by the slow growth in the Agriculture and allied sectors in the country, the National Development Council (NDC), in its meeting held on 29th May, 2007 resolved that a special Additional Central Assistance Scheme (RKVY) be launched. The NDC resolved that agriculture development strategies must be reoriented to meet the needs of farmers and called upon the Central and State Governments to evolve a strategy to rejuvenate agriculture. The NDC reaffirmed its commitment to achieve 4 per cent annual growth in the agricultural sector during the 11thFYP (2007-12). RKVY facilitates Additional Central Assistance to State Plans, administered by the Union Ministry of Agriculture over and above its existing Centrally Sponsored schemes, to supplement the State-specific strategies for inducing growth in agriculture and allied sectors such as horticulture, animal husbandry, fisheries, etc.

Over the years, the annual growth rate remained fluctuating even after implementation of RKVY. The overall 10th Plan period growth rate in agriculture in Maharashtra averaged at 6 percent partly because of very high 10.4 per cent and 14 per cent annual growth achieved in the year 2003-04 and 2006-07. During the 11th Plan period the five year average growth rate per annum was recorded at 4.3 per cent that was less than the 10th Plan average. The agriculture sector has never been a leading sector in Maharashtra; industrial sector has always

been given more importance. However, the share of from industry sector also started declining during the 11th FYP and that of service sector began to improve during the same period.

The RKVY programme is implemented along with many other Central and Centrally sponsored as well as State Sponsored programmes/schemes for agriculture and allied sectors such as National Horticulture Mission, Seed production scheme, macro management, food and nutrition security, oilseeds and pulse development programme, etc. ATMA, KVK and similar project were started to revive the agriculture sector in general and productivity of crop and non crop sectors in particular in the State.

6.4.2. Distribution of Allocation and Expenditure under RKVY by Sectors

This section mainly focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by the State Government to these sectors for achieving high growth rate in the agriculture sector. It is expected that the allocation and expenditure would move in the same direction. Nonetheless, that may not be true but for present evaluation, we focus on the expenditure actually incurred for analyzing and assessing the impact of RKVY projects. We also look at the allocation data and the ratio of expenditure to allocation to locate whether there was any diversion taking place in the priorities set initially.

There are 18 sectors which implemented different RKVY projects in Maharashtra. Based on the available information, it is observed that RKVY funds were concentrated on 7 major sectors/areas in the State of Maharashtra. The major projects identified are Micro/minor irrigation, Horticulture, Crop development, marketing and post harvest management, Animal husbandry, agriculture mechanization, and extension. The projects under these 7 broad areas or sectors garnered more than 85 percent of the total expenditure and remaining 11 minor sectors utilized less than 15 percent of the total expenditure incurred on RKVY projects in the State (Table 6.4.1). Further, projects under micro/minor irrigation incurred highest expenditure i.e., Rs. 44.5 crores per project whereas; projects grouped under innovative programmes/training/capacity building/ other incurred the lowest expenditure of Rs. 0.9 crores per project (Figure 6.4).

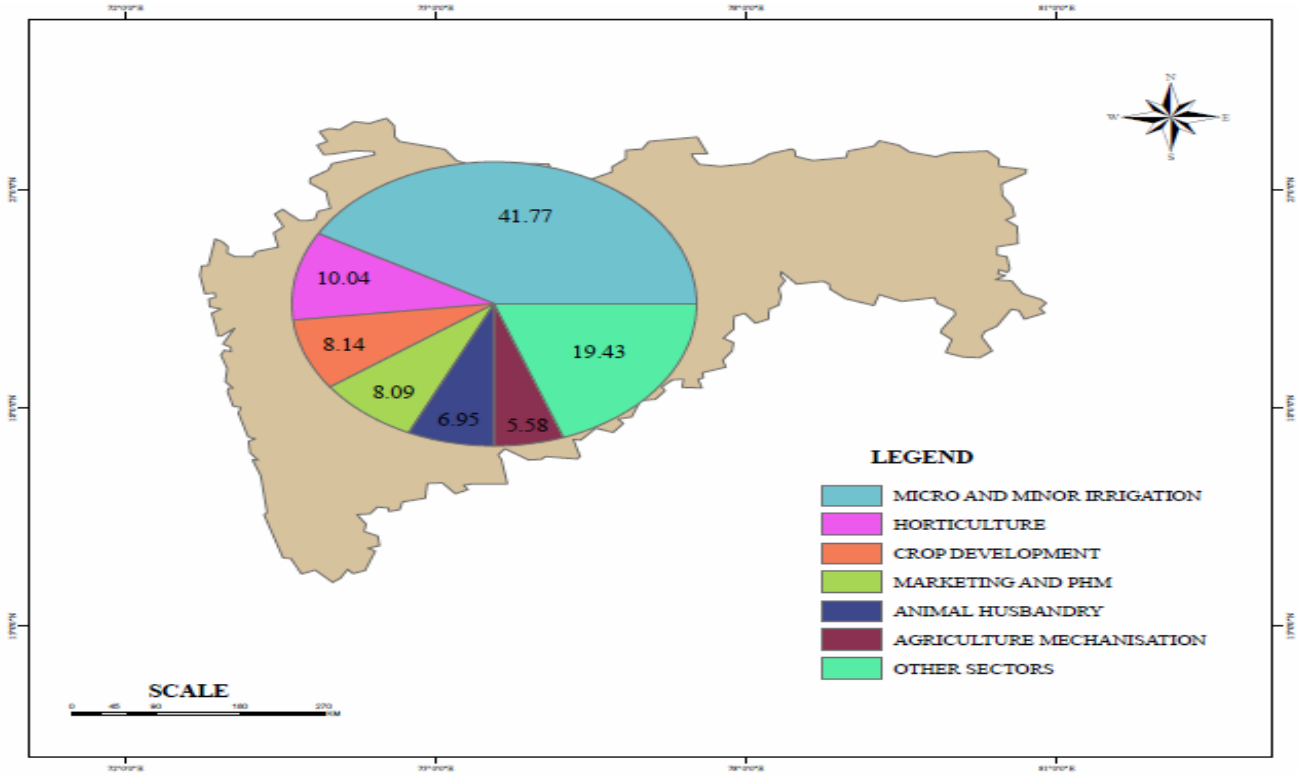

Figure 6.4: Share of Expenditure across Sectors

Note: Minor sectors includes: extension, seed, NRM, dairy development, IPM, fisheries, cooperatives and cooperation, fertilizers and INM, sericulture, IT, and innovative programmes

6.4.3. Sector-Wise Size of the Projects based on the Expenditure

There are numerous RKVY projects implemented by agriculture and allied sectors and the allocations made and actual amount spent varies across the projects. Here an attempt has been made to classify the projects based on expenditure made on different project under the major sectors. The amount spent on different projects under RKVY varies from a few lacks (less than a crore) to more than 300 crores. In Maharashtra Rs. 2343.9 crores are spent on 164 projects implemented under RKVY by different agencies (Table 6.4.2). These projects have been divided into 4 groups based on the total amount spent on implementation of the projects during the 11th FYP. The RKVY projects are classified into 4 groups as: i) up to Rs. 1.00 crore, ii) Rs. 1.00 to 10 crores, iii) Rs. 10 to 25 crores and iv) Above Rs. 25 crores.

It is interesting to note that one fifth of the total 164 RKVY projects spent less than Rs. 1 crore each and the total expenditure incurred is Rs. 0.7 crores. About 50 percent of the projects implemented under RKVY spent amount varying from Rs. 1.00 to 10 crore and shared just 12.9 percent of the total expenditure on RKVY projects in Maharashtra. There are roughly 18 per cent projects which incurred expenditure in the range of Rs. 10 to 25 crores and shared 21.3 per cent of the expenses. The projects with Rs. 25 crores and above expenditure accounted for 12 per cent of the total projects and shared almost two thirds of the total expenditure made for RKVY projects in Maharashtra.

It can be seen from the Table 6.4.2 that large number of projects from animal husbandry sector i.e., 39.4 percent comes under the below one crore expenditure class and about 47 per cent of the projects falls in Rs. 1 to 10 crore range. On the contrary, 37.5 percent of the projects from agricultural mechanization and 36.4 percent of the projects from micro/minor irrigation spent more than Rs. 25 crores each. Similarly, all the projects from sericulture, more than 80 percent of the IPM projects and 70 percent of projects from seed sector are in the range of Rs. 1 to 10 crores. It is interesting to note that all the projects from cooperatives and cooperation and 50 percent of the dairy development projects spent in the range of Rs. 10 to 25 crores per project. Projects from agricultural mechanization, and micro/minor irrigation sectors shared more than one third of the projects each spending more than Rs. 25 crores per project. Maximum number of projects (32) is implemented by animal husbandry sector followed by micro/minor irrigation (22) and marketing /post harvest management sector (20).

6.4.4. Sector-Wise Expenditure according to Status

Analysis of the project status provides information about the expenditure pattern in release of funds and timely completion of the projects. It can be seen from the Table 6.4.3 that, Rs. 2343.9 are actually spent as against the total allocation of Rs. 4234.2 crores on RKVY projects during 11th FYP. In other words only 55 per cent of the allocated amount for RKVY projects is spent for the implementation of projects. Thus, it gives the impression that implementation of RKVY projects was sluggish during the reference period. Micro and minor irrigation sector spent almost 80 per cent of the allocation i.e., Rs. 979 crores of which projects worth Rs. 413.5 crores are either completed or are on the verge of completion. Another Rs. 252.2 crores is being spent on ongoing projects which are in progress. Similarly projects under domain of horticulture, crop development, marketing and post harvest management, extension, seed, dairy development could use the funds at their disposal and spent more than 60 percent of the allocated amount for implementation. Sericulture sector which has been allocated Rs. 10.1 crores spent all the allocated amount and the projects are listed under on-going category.

A large number of projects spent a negligible portion of the allocated funds. Sectors like natural resource management, IPM could spend just 14 to 15 percent of the allocated amount. A typical case is of the programmes/projects implemented under the head of innovative programmes. The government of Maharashtra made an allocation of Rs. 47.4 crores under the head of innovative programmes and the concerned departments or agencies could spend only Rs. 2.8 crores accounting for less than 6 per cent of the total allocation made for the group of programmes under this head.

6.4.5. Sector Wise distribution of Project by Nature

Table 6.4.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure of normal, State flagship and national flagship projects in Maharashtra. Out of total expenditure of Rs. 2343.9 crores, about 74.7 percent was spent on development of infrastructure in agriculture and allied activities and the remaining 25.4 percent was spent on

non-infrastructure projects. Infrastructure expenditure of normal, State flagship and national flagship projects accounted for 53.1 percent, 0.7 percent and 20.9 percent of the total expenditure, respectively. Conversely, non-infrastructure expenditure of normal accounted for 25.4 per cent of the total expenditure.

6.4.6. Major Sector Wise Expected / Actual Output and Outcomes

An attempt is made here to cross check whether the objectives/goals set at the beginning of the project have been achieved or not based on the information provided by the State government (as reported on the RKVY website). However, the information on this aspect i.e., output and outcome of the projects is very scanty and we try to interpret the same. In most of the cases actual out and outcome are missing and hence it is difficult to conclude about the success or failure of the programme in achieving the targeted benefits/achievements.

There are 18 projects listed under micro /minor irrigation sector. Development of pulse villages was one of the programmes undertaken under micro /minor irrigation sector to provide irrigation to pulse crops so as to improve productivity and production. Inputs/ kits were supplied to the farmers and a total of 13648 ha of area under pulses benefited through this intervention and improved the pulse productivity. Similarly 28910 demonstrations are conducted to boost productivity of millets and improved post harvest processing. 783 water bodies are repaired to provide protective irrigation to 1175 ha. Under irrigation sector, reclamation of 7145 ha of saline land was suggested but we do not find any mention about the area covered or the outcome. There are other projects like straightening of 3120 RMT of Nighot nala, automation of drip irrigation on 1000 ha, construction of 1243 tube wells was envisaged but no information is available about achievement of targets (Appendix Table 6.4).

It is surprising to note that many a times we find that the actual output and outcome is higher than visualized at the project formulation stage. For example, 646 nala bunds are constructed and 2717 ha of area got irrigation benefit as against the target of 2083 ha envisaged in the project. Similarly, area under micro irrigation project envisaged 43836 ha of additional area would be brought under micro irrigation. However, output indicates that micro irrigation will be increased by 105435 ha and the same department indicated that 122672 ha area has been covered under sprinkler and drip irrigation. Thus, all the three statements are at variance.

Horticulture sector which implemented 6 programmes and one of them is area expansion under Oil Palm. The target was to cover 200 ha however only 125 ha area have been covered so far. Management of pest and diseases to enhance production of horticultural crops was to cover 184643 ha area but no details are available. Similarly, census of area under horticultural crops covering 20 lakh ha area was suggested but no information is available about the progress of work. Project on establishment of laboratory and training of farmers as well as on line registration of farmer exporter, training to urban households for high tech vegetable cultivation, etc is silent on the progress of the projects.

Under crop development sector, two major projects were undertaken. One of them was integrated development of 60, 000 Pulse villages for which inputs were supplied to farmers and covered 13648 ha. It means that inputs are supplied to for only 0.22 ha per village or less number of villages was covered under the project. Second project is on Initiative for Nutritional Security through Intensive Millet Production. The same project appears in Micro/minor irrigation sector exactly with the same data. We are not sure whether it has been repeated by mistake or otherwise.

There are 20 projects listed under marketing and post harvest management. Most of the projects relates to infrastructure development. Construction of pre-cooling and cold storage was suggested however, but no information is available about the progress. However, about 2.33 lakh MT storage capacities for onion have been created and 10628 farmers benefited from the facility. Construction of buildings and infrastructure for export facility centre, Irradiation facility at Mumbai and APMC yards at 3 places, other projects related to export of flowers, modern marketing facilities, etc., are in progress. Similarly, the information on output and outcome of other projects from different sectors is very ambiguous and hence very difficult to draw the conclusions.

In summary, it is difficult to conclude whether the stated goals and objectives envisaged in the RKVY projects implemented by different agencies have been met or otherwise. The real output and outcome will be visible only through primary survey.

6.4.7. Concluding Remarks

RKVY was started at a time when growth rate of agriculture and allied sectors was not keeping pace with the economy. To accelerate the growth rate in agriculture and allied sectors which include horticulture, animal husbandry, fisheries, etc, National Development Council suggested creation of separate funds to assist State Government to prepare plans for agriculture and allied sectors to achieve a growth rate of 4 percent and more during the 11th FYP. The RKVY provided assistance to State Government to as to induce more public and private investment in agriculture and allied sectors to accelerate the growth rate.

Government of Maharashtra spent Rs. 2343.9 crores on RKVY projects during the 11th FYP. There are 164 major projects implemented by 18 sectors. Of these, 7 sectors i.e., micro/minor irrigation, horticulture, crop development, marketing and post harvest management , animal husbandry, agricultural mechanization and extension together shared more than 85 per cent of the total expenses incurred on RKVY projects. In order to accelerate and maintain the tempo of growth rate in agriculture and allied sectors, the State of Maharashtra spent almost three forth of the RYVY amount on development of infrastructure for agriculture and allied sectors. Around 21 per cent of the RKVY expenditure went for implementation of National flagship programmes.

If one considers / assumes that allocations are made based on priorities, then we find there is some deviations in utilization of funds as the projects ranked at lower positions in terms of

allocation got preference in terms of expenditure and these projects find place in the much higher levels. Projects which were located at 6th and 7th place in terms of allocation of funds finds place at 3rd and 4th rank in terms of expenditure. The total allocation for micro/minor irrigation was Rs. 1231.14 crore followed by animal husbandry (Rs. 475.6 crores), horticulture (Rs.380.2 crores), Natural resource management (Rs.458.3 crores), IPM (Rs.289.7 crores) and so on. However, expenditure pattern indicate first priority for micro/minor irrigation (Rs.978.9 crores) followed by horticulture (Rs.235.4 crores), crop development (Rs.190.9 crores), marketing and post harvest management (189.5 crores), and likewise others follows. The main inference to draw is that though crop development sector ranked 7th inters of allocation, it ranked 3rd in terms of expenditure. Similarly, horticulture sector ranked 3rd in terms of allocation but came next to micro and minor irrigation sector in terms of expenditure. Thus it seems there is a divergence between what was visualized and what took place at the time of actual implementation.

However, it would be interesting to analyze the expenditure pattern under RKVY in conjunction with the State budgetary allocation. An important thrust under RKVY is to incentivize the State Governments, which would in turn increase the budgetary allocation for agriculture and allied sector and thus achieve high growth in the sector. It can be noted from Table 6.4.5 that total budgetary allocation at 2004-05 prices during the 10th Plan was Rs. 178322 crore, which has considerably increased to Rs. 281751 crore during the 11th Plan. Interestingly, capital expenditure on agriculture has risen by 26.5 per cent between the two plan periods. This implies that the RKVY has played a catalyzing role to accelerate the public expenditure on agriculture. However, analysis of composition of budgetary expenditure does not seem to be in correspondence with priority given for spending on different sectors under RKVY.

An attempt was made to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor alone. Table 6.4.5 shows that both revenue and capital expenditure have increased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 58 per cent in the 11th Plan over 10th Plan. However, percentage share of agriculture sector in the State budget declined from 27.9 percent in the 10th Plan to 23.9 percent during the 11th Plan. Out of total expenditure on agriculture in the State, RKVY shared 2.6 percentof the total expenditure. Although agriculture share in State total budget declined in the 11th Plan but percentage share of agriculture expenditure in the State GSDP increased from 20.6 percent in the 10th Plan to 22.5 percent in the 11th Plan. This also suggests that GSDP from other sectors have increased faster than the GSDP from agriculture during the 11th Plan. Looking at sub sector budgetary expenditure (Table 6.4.6), the highest percentage change over the previous Plan happened in Crop Husbandry, Soil and Water Conservation, Animal Husbandry, Dairy Development, Fisheries, Forestry and Wild Life, Plantations, Food Storage and Warehousing, Agricultural Research and Education, Agricultural Finance Institutions, Co-operation, Other Agricultural Programmes, Major and

Medium Irrigation, Minor Irrigation, Flood Control and Drainage, some of these also received priority under RKVY.

Gross State Domestic Product (GSDP) at factor cost (2004-05) by industry of origin shows that the relative share of agriculture and allied activities to the total GSDP declined from 12.2 percent in 2002-03 to 8.5 per cent in 2011-12, whereas the share of services has increased significantly in the same period (Table 6.4.7). The trend indicates that the growth rate in agriculture and allied sectors has decreased over years which are presented in the Table 6.4.8. It is evident from the table that agricultural GSDP fell at a rate of 6 percent in the 10th Plan to 4.3 per centin the 11th Plan in the State. There was no significant increase in the net sown area, gross cropped and irrigated area, cropping and irrigation intensity and very significant increase in land productivity during the above mentioned period (Tables 6.4.8 & 6.4.9). However, such increases in land productivity per hectare in value terms that may be due to inflation factor (Table 6.4.8). The growth rate in area, yield and production was also a mixed bundle where productivity increased in maize, ragi, tur, total pulses whereas it has declined in rice, wheat, soyabean etc (Table 6.4.10). Average Annual growth in production of livestock products and fishery in Maharashtra presented in Table 6.4.11 indicates that there is significant increase in milk, meat and egg production when compared across 10th and 11th FYP. The rate of growth is highest in meat production followed by egg and milk production.

TABLES

Table 6.4.1: Sector-Wise Allocation and Expenditure under RKVY during 11thFYP

Sectors	No. of projects	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure allocation ratio (3/2)	Expenditure per Project (Rs. in crore)
Micro/Minor Irrigation	22(25)	1231.1(29.1)	978.9(41.8)	0.8	44.5
Horticulture	9(15)	380.1(9)	235.4(10.1)	0.6	26.2
Crop Development	8(9)	280.3(6.7)	190.8(8.2)	0.7	23.9
Marketing & PHM	20(25)	290.2(6.9)	189.5(8.1)	0.7	9.5
Animal Husbandry	32(34)	475.8(11.3)	162.8(7)	0.3	5.1
Agriculture Mechanization	8(9)	231.5(5.5)	130.8(5.6)	0.6	16.4
Extension	12(13)	170.3(4.1)	119.2(5.1)	0.7	9.9
Seed	10(10)	104.5(2.5)	76.2(3.3)	0.7	7.6
NRM	7(8)	458.3(10.9)	65.2(2.8)	0.1	9.3
Dairy Development	6(6)	69.5(1.7)	59.2(2.6)	0.9	9.9
IPM	11(11)	289.6(6.9)	43.4(1.9)	0.2	4.0
Fisheries	5(5)	90.6(2.2)	36.2(1.6)	0.4	7.3
Cooperatives And Cooperation	1(2)	40(1)	17.9(0.8)	0.4	18.0
Fertilizers & INM	4(4)	55.2(1.4)	16.2(0.7)	0.3	4.1
Sericulture	3(3)	10.0(0.3)	10.0(0.5)	1.0	3.4
IT	3(3)	9.1(0.3)	8.4(0.4)	0.9	2.8
Innovative Programmes	3(4)	47.4(1.2)	2.8(0.2)	0.1	0.9
Grand Total	**164(186)**	**4234.2(100)**	**2343.8(100)**	**0.6**	**14.3**

Source: www.rkvy.nic.in as on April, 2013;

Note: Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3).

Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis).

INM**:** Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 6.4.2: Sector Classification of Projects according to their Expenditure

(Percent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**	**No.s**	**Expd**
Agriculture mechanization	0.0	0.0	50	4.6	12.5	13.4	37.5	82	8(100)	130.9(100)
Animal husbandry	40.6	4	46.9	33.6	6.3	21.5	6.3	41	32(100)	162.9(100)
Cooperatives and cooperation	0.0	0.0	0.0	0.0	100	100	0.0	0.0	1(100)	18(100)
Crop development	25	0.2	25	5.5	25	21.9	25	72.5	8(100)	190.9(100)
Dairy development	16.7	1.4	33.3	12.8	50	85.8	0	0	6(100)	59.3(100)
Extension	16.7	1.1	50	12.1	16.7	36.5	16.7	50.3	12(100)	119.3(100)
Fertilizers and INM	25	5.7	50	32.4	25	62	0.0	0.0	4(100)	16.3(100)
Fisheries	0.0	0.0	80	43.2	20	56.8	0.0	0.0	5(100)	36.3(100)
Horticulture	33.3	0.9	44.5	7.9	11.1	6.3	11.1	85	9(100)	235.5(100)
IT	33.3	2.9	66.7	97.1	0.0	0.0	0.0	0.0	3(100)	8.5(100)
Innovative programmes	66.7	33.6	33.3	66.4	0.0	0.0	0.0	0.0	3(100)	2.9(100)
IPM	9.1	1.5	81.8	75.1	9.1	23.4	0.0	0.0	11(100)	43.5(100)
Marketing & PHM	10	0.7	55	24.8	25	39.3	10	35.3	20(100)	189.6(100)
Micro/minor irrigation	18.2	0.1	27.3	2.2	18.2	7.2	36.4	90.6	22(100)	979(100)
NRM	14.3	1.4	57.2	32.5	28.6	66.1	0.0	0.0	7(100)	65.3(100)
Seed	0.0	0.0	70	35	30	65	0.0	0.0	10(100)	76.3(100)
Sericulture	0.0	0.0	100	100	0.0	0.0	0.0	0.0	3(100)	10.1(100)
Grand Total	**20.1**	**0.7**	**50**	**12.9**	**17.7**	**21.3**	**12.2**	**65.1**	**164(100)**	**2343.9(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Figures in the parenthesis are percentage to the respective total

Nos: Number of projects, Expd: Expenditure;

Table 6.4.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned / Not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
Horticulture	75	27.0	37	10.7	14	0.0
Micro/Minor Irrigation	28	13.2	7	9.3	2	0.0
Animal Husbandry	17	2.2	49	15.7	26	0.0
Marketing & PHM	12	5.9	8	8.0	6	1.1
Seed	14	3.9	6	6.0	0	0.0
Fisheries	5	1.9	6	6.4	0	0.0
Extension	11	1.3	18	5.2	9	0.0
Agriculture Mechanization	14	4.9	2	1.0	2	0.0
NRM	5	1.6	3	2.7	0	0.0
Organic Farming / Bio Fertilizer	9	1.7	5	2.5	0	0.0
Sericulture	7	1.6	5	2.3	0	0.0
Crop Development	12	1.6	3	1.2	2	0.0
Fertilizers & INM	1	0.0	4	2.4	1	0.0
Non Farm Activities	8	0.4	5	1.2	2	0.0
Cooperatives And Cooperation	3	0.4	1	0.6	1	0.0
IPM	2	0.2	2	0.3	4	0.0
Innovative Programmes	2	0.1	0	0.0	0	0.0
IT	1	0.0	0	0.0	0	0.0
Dairy Development	1	0.0	0	0.0	0	0.0
Research	1	0.0	0	0.0	0	0.0
Grand Total	**228**	**68.0**	**161**	**75.5**	**69**	**1.1**

Source: http://rkvy.nic.in/ as on April, 2013
Note: No. : Number of projects

Table 6.4.4: Sector and Subsector Wise Nature of the Projects

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project	National flagship project	Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Infra structure	Infra structure	Non infra structure	
Micro/minor irrigation	**64.0**	**0.0**	**0.0**	**36.0**	**100(979)**	**0(0)**	**100(979)**
Check dams/ water courses bunds	100.0	0.0	0.0	0.0	100(37.1)	0(0)	100(37.1)
Farm ponds	0.0	0.0	0.0	100.0	100(352.3)	0(0)	100(352.3)
Percolation tanks/ minor irrigation tanks	100.0	0.0	0.0	0.0	100(78)	0(0)	100(78)
Pump sets (diesel/electric)	100.0	0.0	0.0	0.0	100(67.9)	0(0)	100(67.9)
Shallow wells/ dug well	100.0	0.0	0.0	0.0	100(1.3)	0(0)	100(1.3)
Sprinkler and drip irrigation	100.0	0.0	0.0	0.0	100(436)	0(0)	100(436)
Tube wells	100.0	0.0	0.0	0.0	100(6.7)	0(0)	100(6.7)
Horticulture	**11.5**	**88.5**	**0.0**	**0.0**	**11.6(27.2)**	**88.5(208.4)**	**100(235.5)**
Area expansion	100.0	0.0	0.0	0.0	100(1)	0(0)	100(1)
Development of horticulture farms/ facilities	100.0	0.0	0.0	0.0	100(0.6)	0(0)	100(0.6)
Fruits	0.0	100.0	0.0	0.0	0(0)	100(8.4)	100(8.4)
Others (horticulture)	100.0	0.0	0.0	0.0	100(1.3)	0(0)	100(1.3)
Post harvest management	100.0	0.0	0.0	0.0	100(0.5)	0(0)	100(0.5)
Vegetable	10.7	89.3	0.0	0.0	10.7(23.9)	89.4(200)	100(223.9)
Crop development	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(190.9)**	**100(190.9)**
Coarse cereals	0.0	100.0	0.0	0.0	0(0)	100(114.1)	100(114.1)
Cotton	0.0	100.0	0.0	0.0	0(0)	100(3.1)	100(3.1)
Oilseeds and pulses	0.0	100.0	0.0	0.0	0(0)	100(56.7)	100(56.7)
Others (crop development)	0.0	100.0	0.0	0.0	0(0)	100(17.2)	100(17.2)
Marketing and post harvest management	**57.1**	**0.0**	**5.9**	**37.1**	**100(189.6)**	**0(0)**	**100(189.6)**
Cold storages and cold chains	20.9	0.0	0.0	79.1	100(44.7)	0(0)	100(44.7)
Godowns and warehouses	0.0	0.0	24.1	75.9	100(46.1)	0(0)	100(46.1)
Setting up/ strengthening of market infrastructure	100.0	0.0	0.0	0.0	100(98.9)	0(0)	100(98.9)
Animal husbandry	**70.8**	**4.6**	**2.7**	**21.8**	**95.4(155.4)**	**4.7(7.5)**	**100(162.9)**
Animal health	100.0	0.0	0.0	0.0	100(44.4)	0(0)	100(44.4)

Breed improvement	27.4	0.0	7.9	64.7	100(55)	0(0)	100(55)
Feed and fodder	82.3	17.4	0.3	0.0	82.7(23.8)	17.4(5)	100(28.8)
Infrastructure	100.0	0.0	0.0	0.0	100(15.4)	0(0)	100(15.4)
Others (animal husbandry)	0.0	100.0	0.0	0.0	0(0)	100(2.5)	100(2.5)
Poultry	100.0	0.0	0.0	0.0	100(17)	0(0)	100(17)
Agriculture mechanization	**62.9**	**37.1**	**0.0**	**0.0**	**63(82.4)**	**37.1(48.6)**	**100(130.9)**
Custom hiring centers	100.0	0.0	0.0	0.0	100(51)	0(0)	100(51)
Machines and equipment assistance	39.3	60.7	0.0	0.0	39.3(31.4)	60.8(48.6)	100(79.9)
Extension	**34.2**	**44.8**	**0.0**	**21.0**	**55.2(65.9)**	**44.9(53.5)**	**100(119.3)**
Infrastructure	2.7	97.3	0.0	0.0	2.7(0.8)	97.4(26.4)	100(27.1)
Kvks / knowledge centers / dissemination	100.0	0.0	0.0	0.0	100(3.6)	0(0)	100(3.6)
New approaches to extension	41.8	28.4	0.0	29.8	71.7(60)	28.4(23.8)	100(83.8)
Training/ study tour	32.4	67.6	0.0	0.0	32.4(1.6)	67.7(3.4)	100(5)
Seed	**80.2**	**19.8**	**0.0**	**0.0**	**80.2(61.2)**	**19.9(15.2)**	**100(76.3)**
Seed distribution	100.0	0.0	0.0	0.0	100(25.8)	0(0)	100(25.8)
Seed farm	100.0	0.0	0.0	0.0	100(29.6)	0(0)	100(29.6)
Seed production	30.2	69.8	0.0	0.0	30.3(5.9)	69.8(13.5)	100(19.4)
Seed testing lab	0.0	100.0	0.0	0.0	0(0)	100(1.7)	100(1.7)
Natural resource management	**58.6**	**41.4**	**0.0**	**0.0**	**58.7(38.3)**	**41.4(27)**	**100(65.3)**
Water conservation structures and watershed dev	58.6	41.4	0.0	0.0	58.7(38.3)	41.4(27)	100(65.3)
Dairy development	**96.9**	**3.1**	**0.0**	**0.0**	**96.9(57.5)**	**3.2(1.9)**	**100(59.3)**
Assistance to dairy unions/ farmers (inc training)	100.0	0.0	0.0	0.0	100(35.9)	0(0)	100(35.9)
Others (dairy development)	0.0	100.0	0.0	0.0	0(0)	100(1.9)	100(1.9)
Promotion of milk collection centers	100.0	0.0	0.0	0.0	100(21.6)	0(0)	100(21.6)
Integrated pest management	**25.5**	**61.1**	**0.0**	**13.4**	**38.9(17)**	**61.2(26.6)**	**100(43.5)**
IPM labs	14.8	85.2	0.0	0.0	14.8(2.5)	85.3(13.9)	100(16.3)
Others (INM)	0.0	0.0	0.0	100.0	100(5.9)	0(0)	100(5.9)
Pest surveillance	0.0	100.0	0.0	0.0	0(0)	100(10.2)	100(10.2)
Promotion of IPM	77.5	22.5	0.0	0.0	77.5(8.7)	22.6(2.6)	100(11.2)
Fisheries	**100.0**	**0.0**	**0.0**	**0.0**	**100(36.3)**	**0(0)**	**100(36.3)**
Infrastructure/ ponds of fisheries/ dept/ agency	100.0	0.0	0.0	0.0	100(36.3)	0(0)	100(36.3)
Cooperatives and cooperation	**100.0**	**0.0**	**0.0**	**0.0**	**100(18)**	**0(0)**	**100(18)**
Construction of godowns	100.0	0.0	0.0	0.0	100(18)	0(0)	100(18)
Fertilizers and INM	**13.5**	**86.5**	**0.0**	**0.0**	**13.6(2.2)**	**86.5(14.1)**	**100(16.3)**

Fertilizer labs	35.5	64.5	0.0	0.0	35.6(2.2)	64.5(4)	100(6.2)
Soil health cards and soil testing	0.0	100.0	0.0	0.0	0(0)	100(10.1)	100(10.1)
Sericulture	**83.7**	**16.3**	**0.0**	**0.0**	**83.8(8.5)**	**16.3(1.7)**	**100(10.1)**
Cocoon production	0.0	100.0	0.0	0.0	0(0)	100(1.7)	100(1.7)
Others (sericulture)	100.0	0.0	0.0	0.0	100(8.5)	0(0)	100(8.5)
Information technology	**97.1**	**2.9**	**0.0**	**0.0**	**97.1(8.2)**	**3(0.3)**	**100(8.5)**
Development of it facilities	82.8	17.2	0.0	0.0	82.8(1.2)	17.3(0.3)	100(1.5)
Others (it)	100.0	0.0	0.0	0.0	100(7)	0(0)	100(7)
Innovative programmes	**100.0**	**0.0**	**0.0**	**0.0**	**100(2.9)**	**0(0)**	**100(2.9)**
Innovative programmes	100.0	0.0	0.0	0.0	100(2.9)	0(0)	100(2.9)
Grand Total	**53.1**	**25.4**	**0.7**	**20.9**	**74.7(1748.8)**	**25.4(595.1)**	**100(2343.9)**

Source: http://rkvy.nic.in/ as on April, 2013;
Note: Figures in parenthesis indicates the absolute values which are in crores

Table 6.4.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. Crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri. expenditure
2002-03	4903	2926	7829	28014	27.9	18.1	
2003-04*	2769	8229	10998	35322	31.1	23.0	
2004-05	4307	6286	10594	35759	29.6	23.6	
2005-06	3919	6182	10101	37963	26.6	20.6	
2006-07	4461	5576	10036	41264	24.3	17.9	
10th Plan	**20359**	**29200**	**49559**	**178322**	**27.9**	**20.6**	
2007-08	4445	6479	10924	44436	24.6	17.2	
2008-09	6751	10172	16923	53640	31.5	31.5	
2009-10	6754	7307	14061	59940	23.5	25.9	**2.6**
2010-11	5664	7317	12981	59004	22.0	20.3	
2011-12*	6051	5659	11710	64730	18.1	17.5	
11th Plan	**29665**	**36934**	**66599**	**281751**	**23.9**	**22.5**	
% change over 10th plan	**45.7**	**26.5**	**34.4**	**58.0**			

Source: State Finances, RBI

Note: * indicates Revised estimates and Agriculture and allied activities includes Irrigation and flood control; budgetary expenditure is accounts only developmental expenditure; State budget may or may not include RKVY fund
Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100;
For column 2, 3, 4 and 5 10th and 11th plans value indicates sum of five years; for column 6 and 7 10th and 11th plan value indicates average of five years;

Table 6.4.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	596.9(6.1)	1536.4(8.7)	157.4
2	Soil and Water Conservation	223.6(2.3)	532.9(3.1)	138.3
3	Animal Husbandry	237.6(2.4)	497.8(2.9)	109.6
4	Dairy Development	781.9(7.9)	583.1(3.3)	-25.4
5	Fisheries	69(0.7)	164.6(1)	138.7
6	Forestry and Wild Life	359.8(3.7)	828.7(4.7)	130.3
7	Plantations	0(0)	0(0)	0.0
8	Food Storage and Warehousing	152(1.6)	598.9(3.4)	294.2
9	Agricultural Research and Education	253.8(2.6)	471.8(2.7)	85.9
10	Agricultural Finance Institutions	0(0)	0(0)	0.0
11	Co-operation	667.2(6.8)	1766(10)	164.7
12	Other Agricultural Programmes	0(0)	12.3(0.1)	0.0
13	Major and Medium Irrigation	875.7(8.9)	1574.2(8.9)	79.8
14	Minor Irrigation	263.5(2.7)	644.2(3.7)	144.5
15	Flood Control and Drainage	7.7(0.1)	16.5(0.1)	113.5
16	Others	5446.8(54.9)	8506.2(48)	56.2
	Total	**9934.9(100)**	**17732.9(100)**	**78.5**

Source: State Finances, RBI**;**

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total

Table 6.4.7: Gross State Domestic Product (GSDP) at Factor Cost By Industry of Origin (at 2004-05 Prices)

(Per cent)

Sector	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Agriculture and allied	12.2	12.5	10.8	10.4	10.5	10.7	8.8	8.2	8.7	8.5	7.8
Industry	29.2	29.8	29.6	31.1	31.7	31.8	30.7	30.0	29.6	29.1	29.1
Service	58.2	57.4	59.6	58.5	57.8	57.5	60.5	61.8	61.7	62.4	63.2
Aggregate	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Directorate of Economics and Statistics, GOI (2012-13)

Note: GSDP at constant price (2004-05),

Table 6.4.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	2.5	6.8	172	209	121.6	25182
2003-04	10.4	8.0	174	222	127.3	27431
2004-05	-6.0	8.7	175	224	127.9	25687
2005-06	9.2	13.3	175	226	129.1	28079
2006-07	14.0	13.5	175	226	129.2	32015
10th Plan Average	**6.0**	**10.1**	**174**	**221**	**127.0**	**27679**
2007-08	13.8	11.3	175	227	129.7	36423
2008-09	-15.5	2.6	174	225	128.9	30885
2009-10	1.0	9.3	174	226	129.9	31238
2010-11	17.8	10.2	175	241	137.7	36628
2011-12	4.6	7.1	175	241	137.7	38305
11th Plan Average	**4.3**	**8.1**	**174**	**232**	**132.8**	**34696**

Source: Directorate of Economics and Statistics, GOI
Note: *land productivity = agricultural GSDP/ha of NSA,
10th and 11th plan value indicates average of five years

Table 6.4.9: Trend in Inputs Use in Maharashtra

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% Net irrigated to net sown area*	Irrigation intensity (%)	% Gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	32.2	38.1	18.7	118.3	18.2*	73.8
2003-04	32.6	40.9	18.7	125.4	18.4	64.3
2004-05	32.7	39.9	18.7	122.0	17.8	74.7
2005-06	32.7	40.4	18.7	123.7	17.9	84.5
2006-07	32.7	42.4	18.7	129.6	18.8	100.2
10th Plan Average	**32.6**	**40.3**	**18.7**	**123.8**	**18.2**	**79.5**
2007-08	32.7	43.6	18.7	133.5	19.3	102.7
2008-09	32.6	43.3	18.7	132.8	19.3	113.3
2009-10	32.5	43.5	18.7	133.7	19.2	135.3
2010-11	32.6	48.5	18.6	149.0	20.2	152.8
2011-12	32.6	48.5	18.6	149.0	20.2	133.7
11th Plan Average	**32.6**	**45.5**	**18.7**	**139.6**	**19.6**	**127.5**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of five years
* indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 6.4.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	0.2	3.8	3.6	0.2	3.5	2.9
Wheat	10.9	10.9	-0.5	-5.1	0.9	4.2
Jowar	-2.0	0.7	2.2	-6.3	-6.0	0.5
Bajra	1.3	7.2	4.8	-8.7	0.2	8.3
Maize	12.5	11.1	-0.7	9.1	23.8	12.8
Ragi	-2.0	-5.0	-3.4	-0.8	2.8	3.5
Small Millets	-6.3	-1.9	3.4	-0.7	3.2	2.4
Barley	185.5	49.2	15.7	25.5	1.4	23.7
Coarse Cereals	-0.6	2.2	2.4	-5.1	1.5	7.0
Total Cereals	0.6	2.0	1.4	-4.4	1.6	5.9
Gram	12.1	17.3	4.0	-2.9	2.7	3.4
Arhar/Tur	1.9	1.6	-0.4	2.5	7.2	3.1
Other Pulses	-2.5	-0.6	1.4	-18.4	9.1	-2.1
Total Pulses	2.6	5.0	2.2	-1.6	6.6	5.2
Total Foodgrains	1.1	2.4	1.3	-3.7	2.1	5.3
Groundnut	1.3	-3.5	-4.7	-6.9	-0.2	6.5
Sesamum	-10.8	-14.0	-4.8	0.0	14.5	8.6
Rapeseed & Mustard	6.8	15.0	7.9	5.4	2.7	-1.2
Linseed	1.8	1.6	-3.3	-12.3	-7.1	3.2
Castor	18.7	24.8	8.2	-20.4	-11.7	-14.7
Safflower	-0.4	7.0	6.6	-14.5	-15.9	-1.7
Nigerseed	16.3	14.4	-0.7	-14.7	-6.9	8.1
Sunflower	6.1	13.3	5.2	-21.0	-18.6	2.3
Soyabean	18.3	17.6	0.4	4.0	15.0	14.4
Total Oilseeds	10.5	11.4	1.3	-1.0	10.3	12.8
Cotton	0.2	12.8	12.3	6.0	-2.4	-6.0
Mesta	-2.9	-0.7	2.4	-5.0	-9.1	-18.1
Total Fibres	0.1	12.7	12.3	-15.0	-2.5	-8.9
Sugarcane	22.7	25.3	0.3	1.3	4.1	2.6

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 6.4.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	2.4	4.9	3.2	-4.3
2003-04	2.3	0.0	2.4	6.0
2004-05	2.9	2.2	1.8	0.5
2005-06	3.1	2.6	2.5	5.9
2006-07	3.1	3.0	-3.6	2.7
10th plan	**2.7**	**2.5**	**1.3**	**2.2**
2007-08	3.3	116.0	2.0	-6.6
2008-09	3.4	2.1	2.5	-6.0
2009-10	3.0	1.7	8.8	5.2
2010-11	4.8	3.3	9.3	8.2
2011-12*	NA	NA	NA	-2.8
11th plan	**3.6**	**30.8**	**5.7**	**-0.4**

Source: BAHS, www.Indiastat.com;

Note: *For Milk, Meat and Egg 2011-12 data are not available

6.5 RAJASTHAN

6.5.1. Background Information

Rajasthan is the largest State of the Republic of India by area and is located in the northwest of India. Rajasthan covers 342,239 sq km area and accounts for 10.4 per cent of the total geographical area of the country. Rajasthan State comprises of 33 districts. The State is surrounded by five Indian States, viz. Gujarat to the southwest, Madhya Pradesh to the southeast, Uttar Pradesh and Haryana to the northeast and Punjab to the north and it shares its western border with Pakistan. The Aravali Range runs across the State from the southwest peak Guru Shikhar (Mount Abu) to Khetri in the northeast. This range divides the State into 60 percent in the northwest of the range and 40 percent in the southeast. The northwest tract is sandy and unproductive with little water due to rain shadow effect but improves gradually from desert land in the far west and northwest to comparatively fertile and habitable land towards the east.

Total population of Rajasthan as per 2011 census is 68,548,437 of which male and female constitute 51.86 and 48.14 percent of the total population, respectively. The population of Rajasthan forms 5.66 percent of India's population in 2011. The density of population in Rajasthan is 200 persons per sq km which is lower than national average 382 per sq km. Literacy rate in Rajasthan is 66.11 percent as per 2011 population census. As elsewhere in the country, male literacy is higher (79.19 percent) when compared with that of female literacy (47.76 percent).

The economy of Rajasthan is primarily agricultural and pastoral. Wheat and barley are cultivated over large areas, as are pulses, sugarcane, oilseeds, cotton and tobacco are the State's cash crops. Rajasthan is among the largest producers of edible oils in India and the second largest producer of oilseeds. Rajasthan is also the biggest wool producing State in India. There are mainly two crop seasons. The water for irrigation comes from wells and tanks. The Indira Gandhi Canal irrigates north western Rajasthan. Net Sown Area (NSA) accounts for 53.61 per cent of the State’s total geographical area. The cropping intensity of the State is estimated at around 141.71 per cent, meaning that about 42 per cent of the net sown area was planted more than once.

Agriculture is the main stay of livelihood for more than 70 per cent of the population in Rajasthan. However, share of agriculture to GSDP ranged from 20.7 per cent in 2002-03 to 29.1 per cent of the GSDP in 2003-04. On average agriculture and allied sectors contributed Rs. 3193168 lakh accounting for 24.7 per cent of the (Rs. 12950659 lakh) GSDP during the 10th Five Year Plan (FYP) in Rajasthan. Industries and service sector shared 31 percent and 44.3 per cent respectively of the GSDP during the 10th FYP. The mean GSDP of Rajasthan for the 11th FYP was Rs. 19266784 lakh per year. The contribution of agriculture and allied sectors to GSDP

increased in absolute terms from Rs. 3193168 lakh during 10th FYP to Rs. 4137972 lakh per year during 11th FYP Plan but its share declined from 24.7 per cent of the GSDP in 10th FYP to 21.5 per cent of GSDP during 11th Five Year Plan. On the contrary, shares of industry and service sector improved over the years. Average Gross State Domestic Product contributed by industries sector was Rs. 6076796 lakh per year as against Rs. 9052016 lakh shared by service sector in the 11th FYP.

6.5.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on allocation and expenditure of RKVY funds on different projects across sectors. In fact, the allocations made and expenditure incurred indicates the priority accorded by the State Governments to these sectors so as to achieve targeted growth of 4 per cent or more during the 11th FYP. It is expected that the allocation made and expenditure incurred would move in the same direction. However, it may not be true in all the cases and there may be deviations in allocation and actual expenditure due to one or the other reasons. Hence, our emphasis is more on actual expenditure incurred along with allocations made for the projects in agriculture and allied sectors. Analysis of allocation and actual expenditure would bring out whether the priorities set initially stood the ground or there was any diversion in the priorities. Based on the available information, it is observed that RKVY funds were concentrated on 7 major areas in the State of Rajasthan. The major projects identified are Micro/minor irrigation, Horticulture, Seed, Crop development, Fertilizers and INM, Dairy development and Animal husbandry. The projects under these broad area covered 84 percent of the total expenditure and remaining 11 minor sectors utilized only 16 percent of the total expenditure in the State (Table 6.5.1). Micro/minor irrigation, horticulture, seed and crop improvement shared 31.2 percent, 12.6 percent, 10.90 percent, and 9 percent, respectively of the total RKVY expenditure on RKVY during 11th FYP in Rajasthan. Though Rs. 5 crores were allocated to information technology, accounting for 0.2 percent of the total allocations under RKVY, nothing has been spent under this head. Further, projects under micro/minor irrigation incurred highest expenditure i.e., Rs.33.9 crores per project whereas the fisheries sector incurred the lowest expenditure of Rs.0.3 crores per project (Fig. 6.5).

The expenditure and allocation do follow the same trend with respect to the few major projects in various sectors. Interestingly, cost per project of cooperatives and cooperation were found to be higher when compared with few major sectors (Horticulture and Animal husbandry). Average expenditure per project is Rs. 5.3 crores. There are 6 sectors such as micro/minor irrigation, seed, crop development, fertilizers/INM, dairy development, cooperatives and cooperation which attracted more than Rs. 5 crores per project on the contrary, 5 projects related to areas such as research, innovative programmes/ training/ capacity building/ others projects, fisheries, integrated pest management and information technology spent less than Rs. 1 crore per project. A cursory look at the sectoral allocation of funds indicates that micro/minor irrigation, dairy

development and horticulture are the priority sectors. However, in terms of actual expenditure of RKVY funds, micro/minor irrigation is on the top followed by horticulture and seed.

The sector-wise allocation and expenditure and expenditure-allocation ratio (ongoing / initiated / near completion, etc) are also presented in the Table 6.5.1. It can be seen from the table that, Minor/micro irrigation sector attracts majority (Rs.372.7 crore) of the fund from the total expenditure (cost) followed by horticulture (Rs.150.3crore). The least funded sectors are organic farming and bio fertilizer, fisheries and integrated pest management with Rs. 5, Rs. 3.6 and Rs. 2.6 crores, respectively. Though information technology has been allocated Rs. 5.0 crore, it has not spent any amount.

Micro/minor irrigation projects shared a major chunk *i.e.*, Rs. 738.8 crores of the total allocation followed by dairy development (Rs. 363.7 crore). The sectors which got very less share in the allocation are information technology, integrated pest management and innovative programmes, training, capacity building & others with Rs. 5.0, Rs. 5.6 and Rs. 17.7 crores respectively. The expenditure allocation ratio is also not that significant as none of these sectors has the ratio of one or more than one.

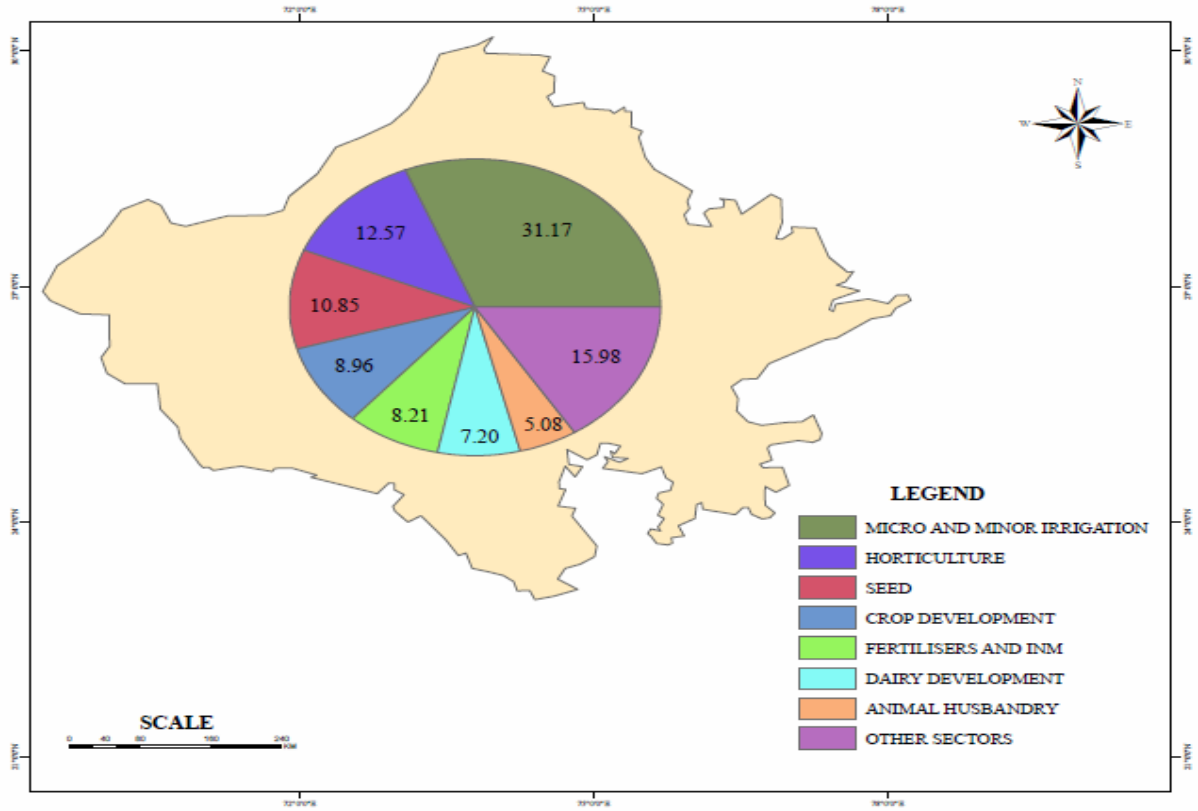

Figure 6.5: Share of Expenditure across Sectors

Note: Minor sectors include Cooperatives and cooperation, Extension, Marketing & PHM, Research Agriculture mechanization, NRM, Innovative programmes, Organic farming / bio fertilizer, Fisheries, IPM and IT

6.5.3. Sector-Wise Size of the Projects based on the Expenditure

Table 6.5.2 presents the number and magnitude of projects undertaken and expenditure incurred under RKVY. The total amount spent under RKVY have been divided into four categories viz., i) less than Rs.1 crore, ii) Rs. 1-10 crore, iii) Rs. 10-25 crore and iv) more than Rs. 25 crore. The amount spent on different projects under RKVY varies from a few lacks (less than a crore) to more than 370 crores. In Rajasthan Rs. 1195.9 crores were spent on 226 projects under RKVY implemented by different agencies. It is interesting to note that around 50 percent of the projects shared 3.6 percent of the total expenditure on RKVY projects in Rajasthan and these projects spent less than Rs. 1.00 crore each. About two third or number of projects from animal husbandry, extension, research, innovative programmes, and integrated pest management sector spent less than Rs. 1 crore per project. Similarly, all the projects under fisheries department incurred an expenditure of less than Rs. 1 crore.

Similarly, around 38 per cent of the projects were in the range of Rs. 1 to 10 crores and shared roughly one fourth of the total expenditure incurred on implementation of RKVY projects (Table 6.5.2). About half of the projects from Seed, fertilizers and integrated nutrition management, dairy development, cooperative and cooperation, NRM, organic farming/ bio fertilizers belonged to this group. Similarly, 60 percent of the projects related to agriculture mechanization and more than 80 percent of the projects from marketing/PHM spent in the range of Rs. 1 to 10 crores per project. About 7.5 percent of the projects spent between Rs. 10 and 25 crores per project and shared roughly 23 percent of the total expenditure on RKVY in the State. In this group seeds accounted for 22 percent of the total expenditure made by all the sectors coming under this category of spending followed by dairy development (22.23 per cent), crop development 13.34 per cent) and horticulture (12.13 per cent). On the other extreme, little more than 5 percent (5.31 per cent) of the projects shared nearly half (49.06 percent) of the total expenditure on RKVY projects during the 11th FYP in Rajasthan and all of these projects spent more than Rs. 25 crores each. It is observed that 45 per cent of the projects grouped under State's flagship programme, i.e., micro/minor irrigation falls under this category. Similarly, 13 percent of the crop development, 12.5 percent of cooperatives and cooperation and 11 percent of dairy development projects spent more than Rs. 25 crores per project. It is interesting to note that almost 95 percent of the expenditure incurred on micro/minor irrigation projects, two thirds of crop development and more than half of the total expenditure on cooperatives and cooperation was shared by the projects in this category.

6.5.4. Sector-Wise Expenditure according to Status

The status of the project (ongoing/initiated/near completion, etc.) is presented in the Table 6.5.3. It can be seen from the table that 58 projects have been either completed or substantially completed and have accounted for Rs.241.7 crores. Seed sector has spent the highest amount on completed and substantially completed projects amounting to Rs. 67.6 crore followed by

micro/minor irrigation, crop development and cooperatives and cooperation sector with an expenditure of Rs. 40 crors, Rs. 36.4 crores and Rs. 32.4 crores, respectively. Integrated pest management has completed/ substantially completed 2 projects and could spend Rs. 0.43 crores followed by dairy development and innovative programmes with expenditure of Rs.1.00, and Rs. 1.3 crores, respectively. The projects in the domain of agricultural mechanization, natural resource management, organic farming and bio fertilizer and information technology have not reported any completed or substantially completed projects under their jurisdiction, although the projects were meant to be completed in 11th five year plan but it has been spilled over to 12th five year plan.

There are 216 projects listed under the category of under progress or ongoing projects. Micro/minor irrigation sector has 10 ongoing and projects in progress with an expenditure of Rs. 332.7 crores followed by horticulture, fertilizer & INM and dairy development with expenditure of Rs. 137.9, Rs. 86.3 and Rs. 85.1 crores respectively. Animal husbandry has the highest (40) number of ongoing/ in progress projects with an outlay of Rs.54 crores. Fisheries, integrated pest management and organic farming / bio fertiliser have fewer numbers of approved and ongoing projects and projects in progress with an expenditure of Rs. 0.6, Rs. 2.4 and Rs. 5 respectively. Sector like information technology has no expenditure with respect to approved and ongoing project and projects in progress.

It is observed that a total of 8 RKVY projects comprising of 2 projects each from animal husbandry, and one project each from fertilizers/INM, Dairy development, marketing/PHM, and NRM are either abandoned or not yet initiated. Moreover, two projects under the domain of extension have been abandoned after spending Rs. 0.6 crores. It is surprising to note that project/s under information technology has been allocated Rs. 5.0 crores but nothing has been spent even after completion of 11th five year plan.

6.5.5. Sector Wise distribution of project by nature

RKVY projects are grouped under three major categories i.e., 1) Normal, 2) State flagship and 3) National flagship projects. Further, each group combine infrastructure and non-infrastructure projects. Flagship projects are the one which are taken up as priority projects, which are supposed to facilitate rapid growth of agriculture sector. There are two types of flagship Projects i.e., Central and State Flagship projects. Rajasthan government has not implemented any national flagship projects under RKVY. State flagship projects were the special kind of projects where the autonomy and flexibility was given to the State Government. Table 6.5.4 presents the sector and sub-sector-wise infrastructure and non-infrastructure expenditure of normal and State flagship projects in Rajasthan. Out of total expenditure of Rs.1196 crores, about 62.5 percent was spent on development of infrastructure in agriculture and allied activities and the remaining 37.6 percent was spent on non-infrastructure projects. Infrastructure expenditure of normal and State

flagship accounted for 45.7 per cent and 16.8 per cent of the total expenditure, respectively. Conversely, non-infrastructure expenditure of normal and State flagship accounted for 37.3 percent and 0.2 per cent of the total expenditure, respectively.

Rajasthan have suggested 2 State Flagship projects for the accelerated growth of agriculture. These are: Micro/Minor irrigation and horticulture. Micro/minor irrigation was the major among flagship projects, which has spent Rs. 372.8 crores, of which 81.6 percent were spent on infrastructure projects and 18.4 percent of the funds were spent on non-infrastructure projects within the micro/minor irrigation sector. Horticulture is identified as a second most important sector and promoted as State flagship programme. Horticulture sector spent about 70 percent of the RKVY funds for infrastructure development and remaining 30 percent on non-infrastructure projects.

Contrary to flagship programmes, crop development sector all the RKVY funds on non-infrastructure projects followed by seed sector spending 83 percent of RKVY funds. Similarly, expenditure by dairy development, animal husbandry, natural resource management and organic farming/bio fertilizer sectors on infrastructure development shared more than 95 percent of the RKVY expenditure incurred by the sector. About 84 percent of the expenditure on innovative programmes and 68 percent of the IPM expenses under RKVY were spent for non-infrastructure projects.

6.5.6. Major Sector Wise Expected / Actual Output and Outcomes

An attempt is made here to cross check whether the objectives/goals set at the beginning of the project have been achieved or not based on the information provided by the State Government (as reported on the RKVY website). However, the information on this aspect i.e., output and outcome of the projects is very scanty and we try to interpret the same (Appendix Table 6.5). In most of the cases actual out and outcome are missing and hence it is difficult to infer about the success or failure of the programme in achieving the targeted benefits/achievements.

Micro/minor irrigation sector is identified as one of the State Flagship Programmes of Rajasthan government and Rs. 372.72 crores are spent on this programme. There are 10 different projects such as construction of Diggies, development of water harvesting structures, storage tanks, sprinkler irrigation, farm ponds, farmers training in conservation of water, etc. As stated earlier, information about the targets, project output and outcome has not been furnished adequately by the State Government and hence it is difficult to conclude about the success or failure of the investments made under the project. The objective was to construct 5000 diggies, but we do not have the data about actual achievements. Similarly, Irrigation facility was to be created for 271185 ha however, only 921 ha has been brought under irrigation and as far as outcome is concerned it indicates 14 pumps have been supplied. it is not clear whether, the project met the

target or otherwise. As per the available information 980 storage tanks with 2 lakh litres capacity has been constructed under the RKVY projects. Similarly, 1365 farm ponds were created to store runoff water during monsoon and use it during the off season. It is acknowledged that the irrigation projects have increased the crop yields in the State by 10 percent and thus the total income of the farmers. Horticulture sector is also treated as a State flagship programme. A large number of programmes (33) are implemented under horticulture sector. Programme on area expansion under horticultural crops indicates sustainability of farm income as output but actual output and outcome is missing. similarly, development of technology programme consist of development of package of practices for high value fruits and the actual output id standardize the package of practices of value fruit crops but outcome of the programme/ intervention is missing. Likewise distribution of 600000 seedlings for 30 ha land has been accomplished but actual output indicates value addition of the flower crops and spice crops is possible. Programme on implementation of greenhouse has expected output as growing of high tech floriculture and actual output is doubling the income. Thus data neither provide information about what was targeted and what is achieved in terms of output and outcome. Thus output and outcome information is missing for more than 70 per cent of the projects under horticulture sector.

A few programmes are implemented under seed sector like Enhancing Seed Replacement Rate (SRR) of oilseed, pulses and maize in and upliftment of poor and marginal farmers.So that seed quality and productivity can be increased and on the other hand farmers can generate more income. Same thing holds true for most of the programmes wherein expected output and outcome are provided but information on actual output and outcome is missing. In summary, it is difficult to conclude whether the stated goals and objectives envisaged in the RKVY projects implemented by different agencies have been met or otherwise. The real output and outcome will be visible only through primary survey.

6.5.7. Concluding Remarks

During the 11th FYP, a total of 282 RKVY projects grouped under 18 major sectors are implemented by different department in Rajasthan. However, only 7 sectors had a loins share in the total expenditure and they accounted for more than 80 per cent of the total amount spent on implementation of RKVY programmes in the State. The Rajasthan government spent Rs. 1196 crores on these projects during the plan period. Of this, more than 60 per cent of the expenditure is incurred on development of infrastructure facilities / assets to facilitate sustainable long term growth in agriculture and allied sectors. similarly, two flagship programmes i.e., micro/minor irrigation (under irrigation sector) and establishment of fruit research and development centre (under horticulture) formed the Flagship programmes of the State and absorbed 17 per cent of the total expenditure made on RKVY projects and programmes.

Most of the Rajasthan receives scanty rains due to its location and hence crops suffer due to moisture stress. Development and expansion of irrigation is the priority area for intervention. Accordingly, micro/minor irrigation is chosen as the flagship programme by the State and shared Rs. 372.7 crore or 31.2 percent of the total expenditure under RKVY projects in the State. The major emphasis of micro/minor irrigation projects was on developing storage facilities, conservation of water and efficient use of available water. Development of plastic covered diggies programme was at the forefront. Construction of storage tanks with 2 lakh litre capacity, construction of farm ponds and provision of sprinkler irrigation sets along with solar water pumps was the strategy adopted for augmenting irrigation in the State. Similarly, emphasis on improvement in quality and production of low volume high value crops such as fruit is appreciable. Among the RKVY projects implemented in Rajasthan, fruit research shared second highest expenditure amounting to Rs. 150.3 crores, followed by seed sector (Rs. 129.7 crores) and crop development (Rs. 107.1 crores).

However, it would be interesting to analyse the expenditure pattern under RKVY in conjunction with the State budgetary allocation. An important thrust under RKVY is to incentivize the State governments, which would in turn increase the budgetary allocation for agriculture and allied sector and thus achieve desirable growth in the sector. It is evident from the Table 5 that total budgetary allocation during the 10th Plan was Rs. 7715 crore (at 2004-05 prices), which increased substantially by 34.1 per cent to reach Rs. 10344 crore during the 11th Plan. Interestingly, there is a remarkable decrease in capital expenditure during the 11th Plan as compared to the 10th Plan with 20.9 per cent. This may be attributed to implementation of RKVY in the State. With respect to composition budgetary expenditure, irrigation and flood control has accounted for relatively a high share, which is more or less in congruence with the RKVY expenditure pattern.

An attempt was made to analyze the performance of agriculture in the State before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme in the State although it is difficult to partial out or deduce good or bad performance to RKVY factor alone. Table 6.5.5 shows that revenue expenditure have increased and capital expenditure have decreased in the 11th Plan compared to 10th Plan and State total budget outlay increased by 14.6 per cent in the 11th Plan over 10th Plan, however, percentage of agriculture share in the State budget declined from 16 per cent in the 10th Plan to 12.9 per cent during the 11th Plan. Out of total expenditure in agriculture in the State, RKVY shared 5.8 per centof the total expenditure. Although agriculture share in State total budget declined in the 11th Plan and the agriculture expenditure as a share of State GSDP decreased from 7.6 per cent in the 10th Plan to 6.7 per cent in the 11th Plan. This also suggests that GSDP from other sectors have increased faster than the GSDP from agriculture in the State from 10th to 11th Plan. Looking at sub sector budgetary expenditure (Table 6.5.6), the highest per cent change over the previous Plan happened in Crop Husbandry, Soil and Water Conservation, Animal Husbandry, Dairy

Development, Fisheries, Forestry and Wild Life, Plantations, Food Storage and Warehousing, Agricultural Research and Education, Agricultural Finance Institutions, Co-operation, Other Agricultural Programmes, Major and Medium Irrigation, Minor Irrigation and Flood Control and Drainage, some of these also received prime priority under RKVY.

Gross State Domestic Product (GSDP) at factor cost (2004-05) by industry of origin shows that the relative share of agriculture and allied activities to the total GSDP increased from 20.7 per cent in 1999-00 to 21.4 per cent in 2011-12, whereas the share of services has increased significantly in the same period(Table 6.5.7). The trend indicates the growth rate in agriculture and allied sectors has increased over years. In Table 8 we see that agricultural GSDP falls, at a rate of 8.4 per cent in the 10th Plan to 7.4 per centin the 11th Plan in the State. There was decrease in the net sown area on the other side not very significant increase in the gross cropped and irrigated area, cropping and irrigation intensity and very significant increase in land productivity during the above mentioned period (Table 6.5.8 & 6.5.9). However, such increases in land productivity per hectare in value terms that may be due to inflation factor (Table 6.5.9). The growth rate in area, yield and production was also a mixed bundle where productivity only increased in wheat and groundnut whereas it was declined in all others like coarse cereals, rice, wheat, jowar, tur, etc. (Table 6.5.10). Average Annual growth in production of livestock products and fishery in Rajasthan presented in Table 6.5.11 indicates that there is significant increase in milk, meat, and fish production when compared across 10th and 11th FYP whereas there is decrease in egg production. The rate of growth is highest in milk and meat production followed by fish production.

TABLES

Table 6.5.1: Sector-Wise Allocation and Expenditure under RKVY 11th Five Year Plan

Sectors	No. of projects	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure allocation ratio (3/2)	Expenditure per Project (Rs. in crore)
Micro/Minor Irrigation	11(13)	738.7(24.7)	372.7(31.2)	0.5	33.9
Horticulture	33(33)	299.5(10)	150.2(12.6)	0.5	4.6
Seed	18(20)	242.0(8.1)	129.7(10.9)	0.5	7.2
Crop Development	15(18)	234.0(7.9)	107.1(9)	0.5	7.1
Fertilizers & INM	10(11)	161.6(5.4)	98.1(8.3)	0.6	9.8
Dairy Development	9(13)	363.6(12.2)	86.0(7.2)	0.2	9.6
Animal Husbandry	33(47)	233.3(7.8)	60.7(5.1)	0.3	1.8
Cooperatives And Cooperation	8(8)	61.5(2.1)	45.7(3.9)	0.7	5.7
Extension	18(20)	194.5(6.5)	44.8(3.8)	0.2	2.5
Marketing & PHM	6(15)	157.2(5.3)	26.1(2.2)	0.2	4.4
Research	23(33)	106.8(3.6)	21.9(1.9)	0.2	1.0
Agriculture Mechanization	10(13)	88.3(3)	20.3(1.8)	0.2	2.0
NRM	4(6)	24.1(0.9)	14.1(1.2)	0.6	3.5
Innovative Programmes	9(10)	17.6(0.6)	6.5(0.6)	0.4	0.7
Organic Farming / Bio Fertilizer	4(4)	32.7(1.1)	4.9(0.5)	0.2	1.2
Fisheries	11(12)	31.8(1.1)	3.6(0.4)	0.1	0.3
Integrated Pest Management	4(5)	5.5(0.2)	2.8(0.3)	0.5	0.7
IT	0(1)	5(0.2)	0(0)	0.0	0.0
Grand Total	**226(282)**	**2998.7286(100)**	**1195.963(100)**	**0.4**	**5.3**

Source: www.rkvy.nic.in as on April, 2013;

Note: Figures in the parenthesis indicate the percentage to the respective total (Column 2 & 3).

Figures in column 2 indicate no. of projects according to expenditure and allocation (within parenthesis).

INM**:** Integrated Nutrient Management; PHM: Post Harvest Management; NRM: Natural Resource Management

if the ratio is < 1 the allocation is not fully utilized, if the ration is > 1 than the expenditure cost is more than the allocation and if the ratio is = 1 then the allocation is exactly equal to the expenditure cost

Table 6.5.2: Project Classification according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Above 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Micro/minor irrigation	36.4	0.4	9.1	0.8	9.1	4.2	45.5	94.6	11(100)	372.8(100)
Horticulture	33.3	4.0	51.5	33.5	12.1	41.5	3.0	21.1	33(100)	150.3(100)
Seed	16.7	0.3	50.0	21.1	27.8	56.1	5.6	22.5	18(100)	129.8(100)
Crop development	53.3	1.4	20.0	4.3	13.3	27.6	13.3	66.8	15(100)	107.2(100)
Fertilisers and INM	30.0	1.5	50.0	29.7	10.0	23.0	10.0	45.9	10(100)	98.2(100)
Dairy development	11.1	0.4	55.6	27.2	22.2	35.6	11.1	36.9	9(100)	86.1(100)
Animal husbandry	63.6	16.2	33.3	51.4	3.0	32.4	0.0	0.0	33(100)	60.8(100)
Cooperatives and cooperation	37.5	2.4	50.0	43.0	0.0	0.0	12.5	54.7	8(100)	45.8(100)
Extension	66.7	7.8	27.8	46.5	5.6	45.8	0.0	0.0	18(100)	44.9(100)
Marketing & PHM	16.7	2.6	83.3	97.4	0.0	0.0	0.0	0.0	6(100)	26.2(100)
Research	69.6	18.3	30.4	81.7	0.0	0.0	0.0	0.0	23(100)	22(100)
Agriculture mechanization	40.0	9.8	60.0	90.2	0.0	0.0	0.0	0.0	10(100)	20.4(100)
NRM	50.0	3.1	50.0	96.9	0.0	0.0	0.0	0.0	4(100)	14.2(100)
Innovative programmes	77.8	57.9	22.2	42.1	0.0	0.0	0.0	0.0	9(100)	6.6(100)
Organic farming / bio fertilizer	50.0	27.4	50.0	72.6	0.0	0.0	0.0	0.0	4(100)	5(100)
Fisheries	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	11(100)	3.7(100)
IPM	75.0	62.8	25.0	37.2	0.0	0.0	0.0	0.0	4(100)	2.9(100)
Grand Total	**49.6**	**3.6**	**37.6**	**24.5**	**7.5**	**22.9**	**5.3**	**49.1**	**226(100)**	**1196(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: * indicates the numbers in absolute figures, Figures in the parenthesis are percentage to the respective total

Nos: Number of projects, Expd: Expenditure;

Table 6.5.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not yet implemented	
	No.	Exp.	No.	Exp	No.	Exp.
Micro/Minor Irrigation	10	332.7	3	40.0	0	0
Horticulture	23	137.9	10	12.4	0	0
Seed	13	62.1	7	67.6	0	0
Crop Development	15	70.7	3	36.4	0	0
Fertilizers & INM	6	86.3	4	11.8	1	0
Dairy Development	11	85.1	1	1.0	1	0
Animal Husbandry	40	54.0	5	6.8	2	0
Cooperatives And Cooperation	3	13.3	5	32.4	0	0
Extension	16	38.2	2	6.0	2	0.6
Marketing & PHM	12	18.0	2	8.2	1	0
Research	26	7.4	7	14.6	0	0
Agriculture Mechanization	13	20.3	0	0	0	0
NRM	5	14.1	0	0	1	0
Innovative Programmes	9	5.3	1	1.3	0	0
Organic Farming / Bio Fertilizer	4	5.0	0	0	0	0
Fisheries	6	0.6	6	3.0	0	0
Integrated Pest Management	3	2.4	2	0.43	0	0
IT	1	0.0	0	0	0	0
Grand Total	**216**	**953.5**	**58**	**241.7**	**8**	**0.6**

Source: http://rkvy.nic.in/ as on April, 2013
Note: No. : Number of projects

Table 6.5.4: Sector and Subsector Wise Nature of the Projects

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Micro/minor irrigation	**27.6**	**18.4**	**53.9**	**0.0**	**81.6(304.2)**	**18.5(68.7)**	**100(372.8)**
Diggies	0.4	0.1	99.6	0.0	100(201.9)	0.1(0.2)	100(202)
Farm ponds	0.0	100.0	0.0	0.0	0(0)	100(67.9)	100(67.9)
Percolation tanks/ minor irrigation tanks	96.9	3.1	0.0	0.0	97(15.7)	3.1(0.5)	100(16.2)
Pump sets (diesel/electric)	100.0	0.0	0.0	0.0	100(83.6)	0(0)	100(83.6)
Sprinkler and drip irrigation	96.2	3.8	0.0	0.0	96.2(3.1)	3.9(0.2)	100(3.2)
Horticulture	**69.9**	**28.4**	**0.0**	**1.7**	**69.9(105.1)**	**30.2(45.3)**	**100(150.3)**
Area expansion	0.0	100.0	0.0	0.0	0(0)	100(16.4)	100(16.4)
Development of horticulture farms/ facilities	88.0	12.0	0.0	0.0	88(58.5)	12.1(8)	100(66.5)
Fruit & vegetables	0.0	100.0	0.0	0.0	0(0)	100(0.7)	100(0.7)
Fruits	93.3	0.3	0.0	6.4	93.4(38)	6.7(2.8)	100(40.7)
Nurseries and green houses	100.0	0.0	0.0	0.0	100(1.6)	0(0)	100(1.6)
Others (horticulture)	0.0	100.0	0.0	0.0	0(0)	100(13)	100(13)
Vegetable	61.0	39.0	0.0	0.0	61(7.1)	39.1(4.6)	100(11.6)
Seed	**16.9**	**83.1**	**0.0**	**0.0**	**17(22)**	**83.1(107.8)**	**100(129.8)**
Others (seed)	22.1	77.9	0.0	0.0	22.2(17.5)	77.9(61.3)	100(78.7)
Seed certification	0.0	100.0	0.0	0.0	0(0)	100(37.7)	100(37.7)
Seed distribution	0.0	100.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Seed production	36.5	63.5	0.0	0.0	36.5(4.5)	63.6(7.9)	100(12.4)
Crop development	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(107.2)**	**100(107.2)**
Construction of godowns	0.0	100.0	0.0	0.0	0(0)	100(2.1)	100(2.1)
Maize	0.0	100.0	0.0	0.0	0(0)	100(45.7)	100(45.7)
Oilseeds and pulses	0.0	100.0	0.0	0.0	0(0)	100(3.1)	100(3.1)
Others (crop development)	0.0	100.0	0.0	0.0	0(0)	100(55.9)	100(55.9)
Wheat and pulses	0.0	100.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Fertilizers and INM	**56.3**	**43.7**	**0.0**	**0.0**	**56.3(55.3)**	**43.8(42.9)**	**100(98.2)**
Fertilizer labs	56.8	43.2	0.0	0.0	56.8(45)	43.3(34.3)	100(79.3)
Infrastructure/ ponds of fisheries/ dept/ agency	100.0	0.0	0.0	0.0	100(0.7)	0(0)	100(0.7)

Micro nutrients labs	100.0	0.0	0.0	0.0	100(9.6)	0(0)	100(9.6)
Soil health cards and soil testing	0.0	100.0	0.0	0.0	0(0)	100(1.7)	100(1.7)
Soil testing lab	0.0	100.0	0.0	0.0	0(0)	100(7.1)	100(7.1)
Dairy development	**100.0**	**0.0**	**0.0**	**0.0**	**100(86.1)**	**0(0)**	**100(86.1)**
Assistance to dairy unions/ farmers (inc training)	100.0	0.0	0.0	0.0	100(3.6)	0(0)	100(3.6)
Dairy units to farmers	100.0	0.0	0.0	0.0	100(3.8)	0(0)	100(3.8)
Milk processing	100.0	0.0	0.0	0.0	100(27)	0(0)	100(27)
Others (dairy development)	100.0	0.0	0.0	0.0	100(20.1)	0(0)	100(20.1)
Promotion of milk collection centers	100.0	0.0	0.0	0.0	100(31.8)	0(0)	100(31.8)
Animal husbandry	**96.3**	**3.7**	**0.0**	**0.0**	**96.3(58.6)**	**3.8(2.3)**	**100(60.8)**
Animal health	99.4	0.6	0.0	0.0	99.4(32.4)	0.7(0.2)	100(32.6)
Breed improvement	100.0	0.0	0.0	0.0	100(15.2)	0(0)	100(15.2)
Buffalo development	100.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Extension and training	100.0	0.0	0.0	0.0	100(0.5)	0(0)	100(0.5)
Feed and fodder	63.0	37.0	0.0	0.0	63.1(1.5)	37(0.9)	100(2.3)
Infrastructure	34.5	65.5	0.0	0.0	34.6(0.4)	65.5(0.7)	100(1.1)
Others (animal husbandry)	94.5	5.5	0.0	0.0	94.5(7.7)	5.6(0.5)	100(8.2)
Poultry	67.8	32.2	0.0	0.0	67.8(0.2)	32.3(0.1)	100(0.3)
Cooperatives and cooperation	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(107.2)**	**100(107.2)**
Construction of godowns	82.0	18.0	0.0	0.0	82(9)	18.1(2)	100(11)
Other facilities	0.0	100.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Others (cooperatives & cooperations)	87.0	13.0	0.0	0.0	87.1(29.3)	13(4.4)	100(33.7)
Extension	**61.5**	**38.5**	**0.0**	**0.0**	**61.6(27.6)**	**38.5(17.3)**	**100(44.9)**
Infrastructure	19.2	80.8	0.0	0.0	19.3(1)	80.8(4)	100(5)
New approaches to extension	60.9	39.1	0.0	0.0	60.9(20.5)	39.2(13.2)	100(33.7)
Others (extension)	98.9	1.1	0.0	0.0	99(6.2)	1.1(0.1)	100(6.2)
Marketing & PHM	**62.2**	**37.8**	**0.0**	**0.0**	**62.2(16.3)**	**37.9(9.9)**	**100(26.2)**
Cold storages and cold chains	0.0	100.0	0.0	0.0	0(0)	100(9.3)	100(9.3)
Others (marketing & phm)	95.9	4.1	0.0	0.0	96(16.3)	4.1(0.7)	100(17)
Research	**41.4**	**58.6**	**0.0**	**0.0**	**41.5(9.2)**	**58.6(12.9)**	**100(22)**
Agri facility	0.0	100.0	0.0	0.0	0(0)	100(1.3)	100(1.3)
Agri research project	1.4	98.6	0.0	0.0	1.5(0.2)	98.6(7.5)	100(7.6)
Agri research/ teaching facility (infrastructure)	10.8	89.2	0.0	0.0	10.9(0.3)	89.2(2.1)	100(2.4)
Others (research)	80.3	19.7	0.0	0.0	80.3(8.8)	19.8(2.2)	100(10.9)
Agriculture mechanization	**7.1**	**92.9**	**0.0**	**0.0**	**7.1(1.5)**	**93(19)**	**100(20.4)**

Custom hiring centers	100.0	0.0	0.0	0.0	100(1)	0(0)	100(1)
Machines and equipment assistance	50.0	50.0	0.0	0.0	50(0.5)	50(0.5)	100(0.9)
Others (agri. Mechanization)	0.0	100.0	0.0	0.0	0(0)	100(18.5)	100(18.5)
Natural resource management	**99.3**	**0.7**	**0.0**	**0.0**	**99.3(14.1)**	**0.8(0.1)**	**100(14.2)**
Others (NRM)	100.0	0.0	0.0	0.0	100(0.4)	0(0)	100(0.4)
Water conservation structures and watershed dev	99.3	0.7	0.0	0.0	99.3(13.7)	0.8(0.1)	100(13.8)
Innovative programmes	**16.1**	**83.9**	**0.0**	**0.0**	**16.1(1.1)**	**84(5.5)**	**100(6.6)**
Innovative programmes	16.1	83.9	0.0	0.0	16.1(1.1)	84(5.5)	100(6.6)
Organic farming / bio fertilizer	**100.0**	**0.0**	**0.0**	**0.0**	**100(5)**	**0(0)**	**100(5)**
Promotion of bio fertilizer	100.0	0.0	0.0	0.0	100(1.2)	0(0)	100(1.2)
Promotion of organic farming	100.0	0.0	0.0	0.0	100(3.9)	0(0)	100(3.9)
Fisheries	**79.5**	**20.5**	**0.0**	**0.0**	**79.5(2.9)**	**20.6(0.8)**	**100(3.7)**
Farmers fish ponds/ assistance including training	21.3	78.7	0.0	0.0	21.3(0.2)	78.8(0.8)	100(1)
Infrastructure/ ponds of fisheries/ dept/ agency	100.0	0.0	0.0	0.0	100(2.7)	0(0)	100(2.7)
IPM	**32.2**	**67.8**	**0.0**	**0.0**	**32.3(1)**	**67.8(2)**	**100(2.9)**
IPM labs	35.9	64.1	0.0	0.0	36(0.5)	64.1(0.9)	100(1.4)
Others (IPM)	0.0	100.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Promotion of IPM	100.0	0.0	0.0	0.0	100(0.5)	0(0)	100(0.5)
Grand total	**45.7**	**37.3**	**16.8**	**0.2**	**62.5(747.5)**	**37.6(448.6)**	**100(1196)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: Figures in parenthesis indicates the absolute values which are in crores

Table 6.5.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (At 2004-05 Prices)

Year	Revenue expenditure (Rs. crore)	Capital expenditure (Rs. crore)	Total (Rs. Crore)	Total State budget (Rs. crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	Percentage of RKVY expenditure to agri. expenditure
2002-03	1318	412	1730	11909	14.5	8.3	
2003-04*	1477	1006	2483	14486	17.1	6.6	
2004-05	1546	1011	2556	15241	16.8	7.8	
2005-06	1704	1059	2763	16151	17.1	8.4	
2006-07	1670	763	2434	17102	14.2	6.9	
10th Plan	**7715**	**4251**	**11966**	**74890**	**16.0**	**7.6**	
2007-08	1640	791	2432	19515	12.5	6.8	
2008-09	1847	740	2587	20683	12.5	6.9	
2009-10	1985	647	2632	21172	12.4	7.2	**5.8**
2010-11	2564	573	3136	20857	15.0	6.5	
2011-12*	2309	613	2922	24208	12.1	6.0	
11th Plan	**10344**	**3364**	**13708**	**106435**	**12.9**	**6.7**	
% change over 10th plan	**34.1**	**-20.9**	**14.6**	**42.1**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts

Agriculture and allied activities includes Irrigation and flood control

Budgetary expenditure is accounts only developmental expenditure

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

State budget may or may not include RKVY fund

Table 6.5.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	1213.4 (10)	5266 (25.8)	334.0
2	Soil and Water Conservation	390.1 (3.3)	368.2 (1.8)	-5.6
3	Animal Husbandry	638.6 (5.3)	1373 (6.8)	115.0
4	Dairy Development	10.2 (0.1)	7 (0.1)	-31.7
5	Fisheries	38.4 (0.4)	59.4 (0.3)	55.0
6	Forestry and Wild Life	1046.3 (8.7)	2078.3 (10.2)	98.6
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	6.9 (0.1)	1.7 (0.1)	-75.5
9	Agricultural Research and Education	296 (2.5)	457.3 (2.3)	54.5
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	180.5 (1.5)	548.7 (2.7)	204.0
12	Other Agricultural Programmes	10.4 (0.1)	30.2 (0.2)	191.3
13	Major and Medium Irrigation	3774.2 (31.1)	4433.6 (21.7)	17.5
14	Minor Irrigation	315.3 (2.6)	617.5 (3.1)	95.9
15	Flood Control and Drainage	0 (0)	0 (0)	0.0
16	Others	4224.5 (34.8)	5237.4 (25.6)	24.0
	Total	**12144.1 (100)**	**20477.7 (100)**	**68.6**

Source: State Finances, RBI**;**

Note: The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total

Table 6.5.7: Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 Prices)

(Per cent)

Sector	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Agriculture and allied	20.66	29.12	25.62	24.09	23.19	22.41	21.41	19.53	22.60	21.41
Industry	32.62	28.15	30.56	31.10	32.77	31.99	31.40	32.57	30.93	31.06
Service	47.80	41.93	43.82	44.81	44.03	45.60	47.19	47.90	46.47	47.53
Aggregate	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: CSO, MOSPI

Table 6.5.8: Growth in State Agricultural Economy

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-33.5	-9.9	108	132	122.3	19338
2003-04	81.4	28.7	174	217	124.5	21791
2004-05	-13.6	-1.9	165	211	127.3	19778
2005-06	0.3	6.7	168	217	128.9	19500
2006-07	7.5	11.7	168	215	128.5	21055
10th Plan Average	**8.4**	**7.1**	**157**	**198**	**126.3**	**20292**
2007-08	1.6	5.1	171	222	129.9	20980
2008-09	4.2	9.1	176	228	129.7	21293
2009-10	-2.7	6.7	170	217	128.1	21424
2010-11	33.4	15.3	183	260	141.7	26441
2011-12	0.5	6.1	183	260	141.7	26584
11th Plan Average	**7.4**	**8.5**	**177**	**237**	**134.2**	**23344**

Source: Directorate of Economics and Statistics, GOI
Note: *land productivity = agricultural GSDP/ha of NSA

Table 6.5.9: Trend in Inputs Use in Rajasthan

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	43.7	52.7	40.5	120.6	39.9	28.5
2003-04	52.4	63.9	30.1	122.0	29.5	37.4
2004-05	58.8	70.9	35.5	120.6	33.7	31.3
2005-06	62.9	78.2	37.4	124.2	36.0	36.3
2006-07	65.0	79.6	38.7	122.5	37.0	43.7
10th Plan Average	**56.6**	**69.1**	**36.4**	**122.0**	**35.2**	**35.4**
2007-08	64.4	80.9	37.7	125.5	36.4	44.4
2008-09	62.5	79.1	35.6	126.7	34.7	47.4
2009-10	58.5	73.1	34.5	124.9	33.6	48.3
2010-11	66.6	83.2	36.3	124.9	32.0	60.6
2011-12	66.6	83.2	36.3	124.9	32.0	62.4
11th Plan Average	**63.7**	**79.9**	**36.1**	**125.4**	**33.8**	**52.6**

Source: Directorate of Economics and Statistics, GOI
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area /Gross sown area*100

Table 6.5.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	-3.0	16.9	13.1	5.1	10.4	5.7
Wheat	3.5	3.4	-0.3	3.2	6.3	3.2
Jowar	3.6	125.6	81.1	-2.3	58.4	63.7
Bajra	6.0	141.4	61.5	0.7	19.5	17.4
Maize	0.4	9.2	5.2	0.4	18.3	17.1
Small Millets	-1.4	171.3	162.1	0.3	43.7	50.5
Barley	6.4	6.4	0.0	6.4	15.7	3.9
Coarse Cereals	3.7	51.7	21.3	0.4	17.0	15.4
Total Cereals	3.3	13.2	3.2	1.1	7.6	6.4
Gram	17.1	21.5	11.1	15.3	31.4	5.9
Arhar/Tur	-2.9	38.1	28.4	1.1	24.1	19.8
Other Pulses	7.8	177.7	71.6	-13.2	144.4	117.2
Total Pulses	10.0	59.0	18.6	8.1	58.6	33.5
Total Foodgrains	4.2	15.7	3.6	2.8	9.4	5.7
Groundnut	5.7	16.1	13.5	7.2	21.9	-5.2
Sesamum	5.3	207.7	122.3	16.1	26.2	16.6
Rapeseed & Mustard	16.5	23.6	4.8	0.0	2.2	1.4
Linseed	7.1	26.9	3.8	33.9	86.6	11.6
Castor	26.9	54.7	6.7	-4.6	11.4	-10.4
Soyabean	1.7	28.1	22.5	7.6	14.7	7.0
Total Oilseeds	11.6	23.4	7.5	2.2	5.3	1.9
Cotton	-5.2	35.7	48.0	10.0	14.4	-10.6
Total Fibers	-5.3	35.7	48.1	-18.0	-15.3	-14.2
Sugarcane	8.5	13.1	5.3	-8.3	-4.4	4.2

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 6.5.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	0.4	11.7	5.6	79.4
2003-04	3.4	0.2	5.7	-44.1
2004-05	3.2	1.6	3.1	14.6
2005-06	4.8	6.3	1.4	12.9
2006-07	7.6	1.5	-5.7	20.0
10th plan	**3.9**	**4.3**	**2.0**	**16.5**
2007-08	1.7	15.9	1.5	15.8
2008-09	25.1	5.0	-4.2	-6.2
2009-10	3.3	9.5	4.1	11.7
2010-11	7.3	16.3	-0.2	4.8
2011-12	NA	NA	NA	69.7
11th plan*	**9.4**	**11.7**	**0.3**	**19.1**

Source: BAHS, www.Indiastat.com; **Note**: *For Milk, Meat and Egg 2011-12 data are not available

7.1 ARUNACHAL PRADESH

7.1.1. Background Information

Arunachal Pradesh is one of the sister States of North-Eastern Region (NER)[4] of India, bordered by two Indian States– Assam and Nagaland to the south. The State of Arunachal Pradesh also shares with international borders– Bhutan in the west, Myanmar in the east and the People's Republic of China (PRC) in the north. Itanagar is the capital city of the State. Arunachal Pradesh is the 14th largest State in the country, covers a geographical area of 83,743 sq. km. According to 2011 census, the total population of the State was 1,382,611. Also, the State is the largest State in the NER and its 94 per cent of the total population lives in rural areas.

As per Arunachal Pradesh Human Development Report 2011-12, altogether 60.4 per cent of the total workforce of the State are cultivators with self-owned land and only 5.1 per cent of the total workforce falls under the agricultural labourer category. However, as the State is dominated by the hilly terrains, only a small portion of the total land area is found under cultivation. Also, the level of cultivation is still in a crude manner. Many of the State's population still engage in the age-old, traditional practice of jhum or what is popularly known as the shifting cultivation. In jhuming, a patch of a jungle or grassland is cleared either by cutting the existing vegetation and burning them, slash and burn. The patch is then cultivated with the raw tools, like spade and hue. After harvesting, the patch is left for several years to rejuvenate fertility of the land. This is what generally known as the jhum cycle[5]. This system of agriculture is often practiced by family units, although whole tribes may engage in it as well. The crops cultivated in jhum lands include, food grains, vegetables, root crops, fruit and species. Basically, it practices mixed cropping. In totality, agro-economic system of Arunachal Pradesh includes jhum, wet cultivation, horticulture, plantations and home gardens. Of these, the last three are of much significance as far as agro-forestry is concerned. Paddy, millet and maize are the major crops in the State. The indigenous vegetables of the State are mainly the sweet potatoes, brinjal, ginger, chillies, pumpkin, cucumber, and local cowpea. Pine apple, oranges, lemon, litchi, papaya, banana and peach walnut, almond, etc. are also grown in Arunachal.

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[4]India's North Eastern Region consists of 8 States– Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Sikkim and Tripura.

[5] The jhum cycle ranges from 3-4 years to 10-15 years depending on the availability of the land and alternative patches for the Jhumias.

As of the structure of the State's economy, agriculture and its allied activities have been the dominant source of livelihood to the people of Arunachal Pradesh. The Net Sown Area (NSA) and the Net Irrigated Area (NIA) have been increasing over the years in the State, albeit it is at the very slow pace, estimated at around 8 per cent and 50 per cent respectively during the period from 2002-03 to 2011-12. As the State is dominated by the hilly terrains, a limited area is found for agricultural purposes. The Gross Cropped Area during 2002-03 was 2.6 lakh ha and rose to 2.8 lakh hectare in 2011-12 (Table 7.1.8 and 7.1.9).

Further, Table 7.1.8 reveals that the growth in agriculture Gross State Domestic Product (GSDP) and the overall GSDP of the State was found to be very significant. On an average, the growth rate of agriculture GSDP was 1.5 during the 10th Five Year Plan (FYP) and rose to 4.5 in 11th FYP. Similarly, the overall GSDP growth rate was 6.2 in 10th FYP and rose to 8.6 in 11th FYP. Despite the growth rate of NSA and Gross Cropped Area (GCA) between the two plan periods (10th and 11th FYP) was very low, the crop intensity was found to be stagnant at around 130.5 per cent in the 11th plan. Nevertheless, the contribution of agriculture sector to overall GSDP was found to be impressive in 11th FYP over the previous plan period, estimated at 4.5 per cent in 11th FYP. But, as happened in the national level, the share of agriculture and its allies sectors to the overall GSDP composition has declined from 50.1 per cent in 1999-00 to 28.2 per cent in 2012-13. Understandably, it is primarily due to the growth of either secondary or tertiary sectors (Table 7.1.7).

Output of the major crops grown in the State, food grain, especially the rice has increased enormously over the year. Of the crops, the annual growth rate of production and productivity of rice was 2.1 per cent and 1.6 per cent respectively in 10th plan and rose to 12.2 per cent each (production and yield) in 11th FYP. In the case of total pulses category, both area and production has been more or less stagnant throughout the two plan periods. During the 10th FYP, the production and productivity of total pulses was 3.7 per cent and 0.7 per cent respectively, and registered the growth rate of production at 5.1 per cent, while yield has fallen at 0.5 per cent during the 11th FYP. Also, the total cereal crop production and yield growth rate has increased significantly over the years (Table 7.1.10). From this simple exercise, we can draw a conclusion that the growth of overall agricultural sector in the State is due to the bumper production and productivity of rice, which is the staple food of the State.

As far as the major constraints of the sector is concerned, larger share of cultivable area under shifting cultivation, low level of productivity due to poor technical knowhow, capital inadequacy, lack of infrastructural support, unfavourable terrain, high cost of production along with demand side constraints of the State can be mentioned. The factors

like, non-availability of basic preservation, storage and processing facilities, low value addition and unfavourable price of agricultural commodities can also be mentioned in this context. Growth of the income level and living standard of the people coupled with modern consumption pattern can also be considered as the driving forces for changing economic institutions in Arunachal Pradesh. In the recent years, the State has felt need of modernising agriculture sector and been trying to capture these issues by giving special emphasis on ensuring better land management, introducing improved cultivation in slope land through agro-forestry, horticulture and encouraging other household activities.

Arunachal Pradesh is one of the special category States[6] in the country and mainly depends on the central assistance because of its low resource base. Therefore, the prime mover of the growth of the economy has been the flow of funds from the centre. In this context, the scheme, Rashtriya Krishi Vikas Yojana (RKVY), introduced by the Government of India (GoI) on 29th May 2007 with an objective of achieving 4 per cent annual growth of agriculture and its allied sector during 11th plan (2007-12) became one of the supportive boons in the State. The government has spent huge fund (Rs. 131.5 crore) under the RKVY scheme during the 11th FYP for ensuring a holistic development of agriculture and its allied sectors in Arunachal Pradesh (Table 7.1.1). The fund allocation under the scheme was based on the foundation of District and State Agricultural Plans, and also, the States have been given maximum autonomy to utilize the fund in their priority sectors. The projects under the scheme have been the time bound nature and the States were given an opportunity to make a convergence with other programmes such as MGNREGS, SGSY, watershed mission, etc. Projects are being implemented under Stream-I (Project based) and Stream-II (Strengthening of schemes with resource gaps).

For effective implementation of RKVY in the State, Arunachal Pradesh has prepared State Agricultural Plan (SAP) and set the target to achieve a growth rate of 4 per cent for the agriculture sector as a whole during 11th FYP. The target decided under the agriculture sub-sector includes, converting 30 per cent of shifting cultivation area into permanent cultivation, converting 50 per cent of mono-cropped area to double cropped area, to cover 25 per cent of NSA under the use of High Yielding Varieties seeds(HYV seeds), irrigation and fertilizers, increasing cropping intensity from 129.7 per cent to 150 per cent, increasing the fertilizer and agro-chemical consumption levels (in kg/ha) and increasing farm family-income growth rate from an average of 9.36 per cent during 1999-00 to 2005-06 to around 12 per cent per annum in the 11th FYP. For other sub-sectors, the State decided to increase farming of animal husbandry, fishery and sericulture on commercial mode by 15 per cent, etc. In addition, the State had also decided to motivate

[6] It a system in the federal set up where the States are basically supported by the centre (90% by the centre and 10% by the State).

farmers towards high-value crops/enterprises including bamboos, medicinal & aromatic plants, floriculture, ornamental fisheries, small tea gardens, etc. and to provide information on market, price, demand, technology, etc., during the 11th FYP. Therefore, to understand the impact of various projects implemented in the State through RKVY, a proper and in-depth evaluation has been necessitated.

As targeted, the areas focus under RKVY schemes in the State include, integrated development of major food crops such as paddy, coarse cereals, minor millets, pulses, oilseeds, activities related to enhancement of soil health, Integrated Pest Management schemes, support to seed production and cultivation, encouraging non-farm activities, activities related to enhancement of horticultural production and popularization of micro irrigation systems, strengthening of infrastructure to promote extension services, fisheries development activities, organic and bio-fertilizers, innovative schemes, animal husbandry and dairy development programs, agriculture mechanization, sericulture, water-shed programs and land terracing, etc.

7.1.2. Rationale of the Scheme's Evaluation in Arunachal Pradesh

Having understood the initiatives made by the government, it is imperative to analyse the impact of the scheme (RKVY) on the growth and development of agriculture sector in the State in the 11th FYP (post-RKVY period). As of the evaluation parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY scheme covers not only field crops of agriculture sector but also many other public goods and services like, infrastructure, irrigation, marketing, extension services, trainings, etc., mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agriculture sector which RKVY sponsors involves multi-faceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult. Therefore, some approximations have to be made while evaluating the performance of RKVY scheme. For the present study of impact evaluation of RKVY, the following broad parameters and methodologies will be followed:

1. The impact evaluation of RKVY would be made for the period of 11th FYP.
2. A comparison of the scheme's performance of entire State will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Assessment of the scheme will be made through the increase in area, production and productivity of major crops as well as the magnitude of change in physical infrastructures in the 11th FYP over the 10th FYP.

4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as one of the major parameters of performance evaluation of the scheme, and attempts have been made to evaluate the output and outcome of the scheme.

7.1.3. Distribution of Allocation and Expenditure across the Sectors

This section focuses on distribution of the allocated fund and expenditure of RKVY projects across the sectors in the State. The projects which have utilized around 80 per cent of the total fund under RKVY were taken for detail analysis. It was presumed that these projects contribute directly or indirectly to achieving targeted agricultural growth rate in the State. Table 7.1.1 reflects the sector-wise allocation and expenditure of RKVY fund in the State during the 11th FYP. It reveals that allocation was made for 126 projects in the State but the expenditure was made only on 65 projects. As the decision of spending scheme's funds on the priority projects has been given to the States, Arunachal government felt the listed 65 projects as important and allocated Rs. 131.5 crores on these projects during 11th FYP. These 65 projects can also be considered as sub-sectors of the 13 broader priority sectors identified by the State (Table 7.1.1).

With respect to expenditure across the sectors, five major sectors such as crop development, horticulture, animal husbandry, fisheries and sericulture have been identified as important and priority sectors in the State. Altogether, 81.60 per cent of the total allocated fund was spent in these 5 sectors and the remaining 18.40 per cent of the total allocated fund was spent on 8 less priority (as decided by the State) sectors, which have been considered as minor sectors. Further, the highest expenditure per project was incurred by the crop development sector with Rs. 1.6 crores and the lowest was incurred by the extension and organic farming/bio fertilizer sector with an equal amount of Rs. 0.1 crores each. Likewise, expenditure and even allocation do follow almost same trend with respect to the major sectors. Interestingly, cost per project of a few minor sectors like agriculture mechanization and marketing and post-harvest management were found to be higher when compared with a few major sectors (horticulture, animal and fisheries). Unfortunately, no expenditure was made on dairy development, albeit it was identified as an important sector by the State.

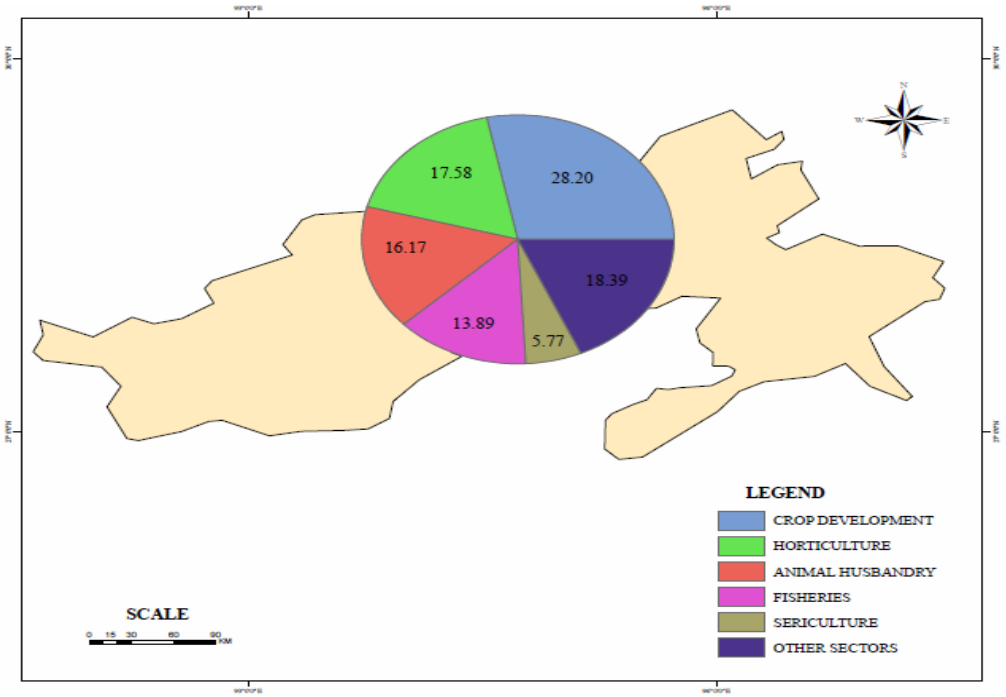

Figure 7.1: Share of Expenditure across Sectors

Note: Other sector includes agriculture mechanization, marketing & PHM, micro/minor irrigation, innovative programmes, seed, extension, organic farming / bio fertilizer and dairy development

To elaborate more on the allocation and expenditure under the scheme in 11th FYP, crop development accounted for 28.3 per cent of the total expenditure. It was followed by horticulture with 17.6 per cent, animal husbandry with 16.2 per cent; fisheries with 13.9 per cent and sericulture with 5.8 per cent (Fig.7.1). The remaining 18.4 per cent of the expenditure was made on the minor sectors. As of the expenditure allocation ratio, the highest ratio was made by seed sector, estimated at 0.9. It implies that the sector spent 90 Per cent of the allocated fund and it was closely followed by sericulture and minor irrigation with equal ratio of 0.8 during the period. Though the crop sector was allocated the highest fund under the scheme, only 8 projects have been initiated against the 21 projects sanctioned. Animal husbandry sector could initiate 18 projects against the 21 sanctioned and horticulture sector could initiate 11 projects against the 22 projects sanctioned (Table 7.1.1).

7.1.4. Sector-Wise Size of the Projects based on the Expenditure

Table 7.1.2 classifies the projects according to two expenditure slabs-1 (up to 1 crore and 2) above 1 crore. In Arunachal Pradesh, altogether 80 per cent of the total expenditure was made on the project category of up to 1 crore and the remaining 20 per cent was

spent on the projects categorized as above 1 crore. This implies that, the projects taken up in the State were mainly small and medium projects during the 11th FYP. Of the major sectors, sericulture sector initiated only small projects (up to 1 crore category) and no project was found under the category of above 1 crore slab. However, the highly prioritized sector– crop development spent its lion's share of fund on the project category of above 1 crore. The other three major sectors horticulture, animal husbandry and fisheries have spent their major share of fund on the project category of up to 1 crore.

In term of expenditure incurred by the sectors between the two cohorts (up to 1 crore and above 1 crore), 60 per cent of the total expenditure was made project category of above 1 crore and remaining 40 per cent was spent on the category of project up to 1 crore. Of the major sectors, crop development spent 93.6 per cent of the total fund on the project category of above 1 crore. Horticulture and fishery sectors have spent their larger share of expenditure on the project slab of "above 1 crore", albeit they initiated more number of projects under the slab of "up to 1 crore project". Similarly, two sectors under minor sector– agriculture mechanization and marketing & PHM have spent their larger share on the project category of "above 1 crore", though they have more number of projects under the slab of "project expenditure up to 1 crore".

7.1.5. Sector-Wise Expenditure according to Status

In the case of project status during the 11th FYP, out of 126 project sanctioned, 61 projects have been completed or substantially completed, 60 projects were found to be continuing (in progress) and 5 projects have been abundant or not yet initiated during the plan period. Largest number of projects (say 17 projects) under the animal husbandry sector was found to have completed or at the verge of completion. It was followed by horticulture with 11 projects, 8 projects under crop development and 7 under sericulture sector. Under the status of "in progress", 12 projects were found under the crop development sector. It was followed by horticulture with 10 projects. One project each was found to have been abundant or not yet started under crop development and horticulture during the 11th FYP (Table 7.1.3).

7.1.6. Sector and Sub Sector Wise Distribution Projects by Nature

Arunachal Pradesh, though strategically very important, is one of the most backward States in the country in the traditional sense of economic parameters. The long isolation and separation from the main land India, posed formidable problems to the efforts of socio-economic development of the State. The main factors responsible for agricultural backwardness could be attributed to (a) physical features of the State, necessitating terrace cultivation owing to availability of limited flat land (b) low cropping intensity due

to mono-cropping and prevalence of age-old shifting cultivation (c) lack of inadequate infrastructural support in transportation, communication, assured irrigation facilities, technical research and marketing (d) lack of improved and locally acceptable crop varieties and economically viable cropping sequence for different agro-climatic zones, and (e) lack of suitable firm implements for mid and high hill areas etc.

Over the few decades, the State has intensified its efforts on modernization of agriculture through intensive and mechanized method in selected areas, promotion of scientific planning and cropping pattern to improve yield level, replacing/improving the traditional jhum cultivation to the maximum possible extent, extensive and intensive agriculture through assured irrigation facilities, infrastructural support in transport and communication, improvement of locally acceptable crop varieties conducive to varied agro-climatic zones, development of marketing network to generate income and to provide employment opportunities. Also, the State's strategy for agricultural development is centred on achieving self-sufficiency in food grain production and marketing of agricultural and horticultural produces at remunerative prices, apart from generating revenue and employment opportunities. Therefore, the State has tried to utilize the RKVY funds in a very effective manner by allocating to different kinds of priority projects.

To understand the importance of the sectors, the entire projects taken up under the RKVY scheme were carried under three broad categories– normal, State flagship and National flagship projects. The projects covered under these three categories can again be classified into two types– infrastructure and non-infrastructure projects. Altogether 38.5 per cent of the fund spent under infrastructure projects and remaining 61.6 per cent were spent under the non-infrastructure type (Table 7.1.4).

Further, of the total expenditure, 84.8 per cent came under normal project and remaining 7.3 per cent and 7.9 per cent were come under State flagship and National Flagship projects respectively. Again, of the total expenditure taken up under the scheme during 11th FYP, 28.9 per cent were the infrastructure projects carried out by normal project category and 55.9 per cent were the non-infrastructure projects carried out under the normal project category. Under the State flagship projects, 1.6 per cent and 5.7 per cent were the infrastructure and non-infrastructure projects respectively during 11th FYP. Again under the National flagship category, 7.9 per cent of the total expenditure spent on infrastructure projects, in this section no expenditure were made on non infrastructure projects.

7.1.7. Major Sector-Wise Stated and Actual Goals

A brief output and outcome under different crop categories of the scheme during the 11th FYP is presented below (Appendix Table 7.1).

a) Crop Development

The production of the crops like, maize, ground nut, soya bean, mustard and vegetable has increased in 11th FYP due to the distribution of seeds of the same under the RKVY scheme. Under the scheme, the supply of bio-fertilizers, organic manure & bio-pesticides have also been made. Efforts were made for the development of land and to convert shifting agriculture to permanent agriculture and hence paddy cultivation increased in the State. Cultivation of local tea beverage was encouraged to provide employments to the unemployed youths in the State. Also, the input usage of bio-fertilizers, bio-pesticides and organic manure has increased by 12.33 per cent.

b) Horticulture

Assistance was given for maintenance of old plantation for increasing production and productivity of these plantations. Awareness was created among the farmers regarding new technologies, to adopt better farming practices and to increase yield and income. Also, encouraged seed production of fruits, vegetables and potato to increase production in different seasons. Encouraged farmers, unemployed youths and unemployed women in SHGs in different ways to take up horticultural production and to earn better income.

c) Fisheries

Construction of ponds for fish seed production was taken up to increase fish production in the State. Encouragement has been made for the local farmers to increase magur fish and carps fish ponds and seeds. Efforts were also made to create awareness among farmers by providing inputs and technical support, so that the farmers can get better returns. Also, meat production especially the pork, duck and duck cum fish production were encouraged in the plan.

d) Animal Husbandry

Huge expenditure was incurred on fodder seeds & fodder grass development in the State for further distribution of seeds to make farmers self-sustaining for the farm and the farmers of the adjoining areas which lead to increase income to the farmers. Twenty milk cows were distributed to the 20 farmers to increase their income to the family, and many

animal health care centers were also established for combating various dangerous diseases in the State. More expenditure was incurred on establishment of dairy farming, goatary farming, Mithun farming and poultry farming activities.

e) Sericulture

Expenditure has been incurred on tasar & mulberry cocoon production at the farmers' level in the State to increase the production and enhancing the revenue of the sericulture farmers. Expenditures were also incurred on raising plantations on kashrush castor, oak tasar, som to increase production of eri, tasar, mulbery & muga cocoons in the State.

7.1.8. An Assessment of RKVY Performance in the State and Concluding Remarks

In Arunachal Pradesh, RKVY project comprises of 13 sectors including 37 sub-sectors. A total of 126 projects have been approved at the time of RKVY scheme inception in the State. Of the 126 projects, State made expenditure for 65 projects during the 11th FYP and 61 projects were at the verge of completion or completed within the plan period. Out of 13 sectors, 5 sectors absorbed 81.60 per cent of the expenditure. Among the major sectors, crop development utilized majority (28.3 per cent) of the funds, and it was followed by horticulture (17.6 per cent), animal husbandry (16.2 per cent), fisheries (13.9 per cent) and sericulture (5.8 per cent).

The major focus of the RKVY scheme evaluation was given to the magnitude of expenditure made on the sectors through which the impact can be accessed directly or indirectly. The status-wise expenditure on the sectors shows that most of these sectors (projects) were in the stage of completion or at the verge of completion and the remaining projects might not have spilled over to the 12th FYP. In case of some sectors like agricultural mechanization and marketing & post-harvest management had huge allocation but the expenditure incurred was very less. As per the classification of the projects, most of the projects in the State were belonged to the group of "up to 1 crore" (80 per cent) and "above 1 crore and up to 10 crores" (20 per cent) respectively. No project was found incurred above 10 crore under the RKVY in the State during the study period. Projects in the RKVY were distributed into infrastructure and non-infrastructure projects. Also, all the projects, irrespective of the types (infrastructure and/or non-infrastructure) under RKVY have been categorized into three groups' normal projects, national flagship projects and State flagship projects.

In the State, the infrastructure projects incurred 38.44 per cent of the total expenditure under the RKVY scheme. The State managed to utilize the RKVY funds effectively as stated in the SAP. Though there are few cases of divergence with the allocation and

expenditure, by and large, most of the stated goals have been met under the scheme in the State. To verify the performance of the 5 major sectors, we tried to look into the basic indicators and then cross checked these indicators in two time periods (pre and post-RKVY periods), *i.e.*, 2006-07 and 2011-12. As indicated above, in case of crop development sector, the area under many crops like maize, paddy, soya bean, ground nut and some vegetables were decreased but the growth of production and productivity was found to be highly significant enormously after the introduction of RKVY scheme in the State. At the same time, fertilizer usage and the NSA have increased by 12.33 per cent and 12.42 per cent respectively. Horticulture area under fruits & vegetable was found to be increased by 32.11 per cent and yield increased by 0.09 per cent. In case of fisheries, fish and egg production was shooting up by 3.9 per cent 110.9 per cent but the pork and duck meat production was decreasing during the same period in the State. In animal husbandry sector, many infrastructures such as veterinary hospital, dispensary & aid centers were supported and improved but the number of these centers remained same. However, the socio-economic status of the farmers has improved. During the 11th plan, RKVY share on the State agriculture expenditure was 1.3 per cent. Also, the share of agriculture expenditure from agriculture GSDP has increased from 21 per cent to 30 per cent in 11th plan.

Apart from all these, during the RKVY scheme, the State has created many infrastructure projects like, extension, agricultural research, animal health & breed improvement, fish production, etc. Farmers were encouraged to adopt improved machineries & equipments by providing financial assistance in the form of subsidies which resulted in decreased cost of cultivation, generation of self-employment and increase farm power; popularized HYV seed cultivation through distribution of seeds, demonstrations in the field, intensive training and amelioration of soil fertility with the use of bio-fertilizers, bio-pesticides, organic manure, etc. Further, effort has been made to strengthen old plantation orchids for increasing production and productivity.

When it comes to the impact of RKVY scheme on the State's agriculture sector, there is no direct and exact indicator which can determine the performance of agriculture, due to the factors mentioned above. Nevertheless, a rough approximation is made to indentify the impact of RKVY on agriculture scheme in Arunachal Pradesh during 11th FYP.

If we look into the State budgetary expenditure on agriculture and its allied sectors, the percentage of agriculture expenditure to State budget was 18.5 per cent in 10th FYP and it remained more or less same in the 11th FYP as well, estimated at 18.1 per cent (Table 7.1.5), albeit the share of agriculture and its allied sector to State GSDP has declined drastically from 50 per cent in 1999-00 to 28 per cent in 2012-13 (Table 7.1.7). The percentage of agriculture expenditure to agriculture GSDP has increased from 21.3 per

cent in 10th FYP to 30 per cent in 11th FYP. Also, the share of RKVY expenditure to total State agriculture expenditure has been 1.3 per cent during the 11th FYP (Table 7.1.5).

As of the pre-condition, one should know that the impact of the RKVY might not be felt immediately, but the expenditure pattern ushers the performance of the scheme indirectly or in the long run. From the Table 7.1.6 we can see the composition of State budgetary expenditure on agriculture and its allied sectors. The State budgetary expenditure of major agricultural sector has increased by 144.2 per cent in 11th FYP over the previous plan. Of the sectors, co-operation, dairy development and agricultural research have been very significant. The impact of these sectors cannot be known immediately and might not be possible to measure quantitatively, e.g. agriculture education, cooperation, etc. However, the flood control and drainage have been neglected in the 11th FYP. This might be due to the factor that the State is not a flood prone one.

Without forgetting the RKVY's aims at achieving 4 per cent growth rate in agriculture sector in 11th FYP, the scheme has made its maximum effort and worked in a synergetic manner with other agencies. Overall GSDP has increased from 6.2 per cent in 10th FYP to 8.6 per cent in 11th FYP and the agriculture GSDP growth has been very significant, rose from 1.5 per cent in 10th FYP to 4.5 per cent in 11th FYP (Table 7.1.8). In term of growth of livestock and fish production, the annual average growth of egg has reached to almost 111 per cent in 11th FYP and 4 per cent of fish during the same period (Table 7.1.11).

In totality, the State has achieved the targeted growth rate of 4 per cent in agriculture as planned in the 11th FYP. The average annual growth rate agriculture GSDP during the 11th FYP period was 4.5 per cent, compared to 1.5 per cent of the previous plan period. Also, the State budgetary expenditure has increased by 144 per cent in 11th FYP over the previous plan period. Major increase was visible in food grains, fish and milk production. Increase in fertilizer usage was also visible. Nevertheless, this achievement in agriculture might not be solely due to RKVY intervention in the State, because there are other initiatives like Rain-fed Area Development Program (RADP), New agricultural policy 2001, Integrated program for development of spices, commercial floriculture, integrated development of fruits etc., have been taken up by the State in the recent past. But, looking at the changes that have been made in the 11th FYP compared to the previous plan, and also the effort made by the scheme, no one can ignore the contribution of the RKVY scheme. In order to validate the results provided by RKVY in this study, a primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

TABLES

Table 7.1.1: Sector-Wise Allocation and Expenditure under RKVY during 11th FYP

Sectors	No. of project*	Allocation^ (Rs. Crore)	Expenditure^ (Rs. Crore)	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
Crop Development	8 (21)	40.5 (30.9)	12.6 (28.3)	0.3	1.6
Horticulture	11 (22)	30.8 (23.5)	7.9 (17.6)	0.3	0.7
Animal Husbandry	18 (21)	10.1 (7.7)	7.2 (16.2)	0.7	0.4
Fisheries	6 (11)	10.2 (7.8)	6.2 (13.9)	0.6	1.0
Sericulture	8 (10)	3.4 (2.6)	2.6 (5.8)	0.8	0.3
Agriculture Mechanization	2 (8)	13.4 (10.2)	2.6 (5.8)	0.2	1.3
Marketing & PHM***	2 (5)	11 (8.4)	2.5 (5.7)	0.2	1.3
Micro/Minor Irrigation	3 (6)	1.9 (1.5)	1.4 (3.2)	0.8	0.5
Innovative programmes/training/ capacity building/ others	2 (6)	2.2 (1.7)	0.9 (2.1)	0.4	0.5
Seed	1 (2)	0.7 (0.6)	0.6 (1.4)	0.9	0.6
Extension	3 (7)	1.4 (1.1)	0.2 (0.4)	0.1	0.1
Organic Farming / Bio Fertilizer	1 (6)	3 (2.4)	0.1 (0.2)	0.0	0.1
Dairy Development	0 (1)	2.9 (2.3)	0 (0)	0.0	0.0
Grand Total	**65 (126)**	**131.5 (100)**	**44.7 (100)**	**0.3**	**0.7**

Source: www.rkvy.nic.in as on April (2013)

Note:* Figures in the parenthesis indicate number of projects based on allocation under RKVY;

^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total.

**The ratio=0 indicates the allocation is totally not utilised, the ratio <1 indicates the allocation is not fully utilised, the ratio >1 indicates the expenditure is more than the allocation and the ratio=1 indicates the allocation is exactly equal to the expenditure;

***PHM: Post Harvest Management;

Table 7.1.2: Sector Classification of Project according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 to 10 crore		Grand Total*	
	No.	**Expenditure**	**No.**	**Expenditure**	**No.**	**Expenditure**
Crop development	37.5	6.4	62.5	93.6	8 (100)	12.6 (100)
Horticulture	81.8	40.5	18.2	59.5	11 (100)	7.9 (100)
Animal husbandry	88.9	65.1	11.1	34.9	18 (100)	7.2 (100)
Fisheries	66.7	38	33.3	61.9	6 (100)	6.2 (100)
Sericulture	100	100	0	0	8 (100)	2.6 (100)
Agriculture mechanization	50	21.7	50	78.4	2 (100)	2.6 (100)
Marketing and PHM	50	28.6	50	71.4	2 (100)	2.5 (100)
Micro/minor irrigation	100	100	0	0	3 (100)	1.4 (100)
Innovative program/ training/ capacity building/ others	100	100	0	0	2 (100)	0.9 (100)
Seed	100	100	0	0	1 (100)	0.6 (100)
Extension	100	100	0	0	3 (100)	0.2 (100)
Organic farming / bio fertilizer	100	100	0	0	1 (100)	0.05 (100)
Grand Total	**80**	**40.4**	**20**	**59.6**	**65 (100)**	**44.71 (100)**

Source: Same as Table 1.

*** Note:** No: Number of projects which are in absolute figures**;** Figures in the parenthis are per cent of the accompanying absolute values.

Table 7.1.3: Sector-Wise Classification of Projects by their Status under RKVY during 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
Crop Development	12	0	8	12.6	1	0
Horticulture	10	0	11	7.9	1	0
Animal Husbandry	4	0.5	17	6.7	0	0
Fisheries	6	0.4	5	5.8	0	0
Sericulture	3	0.2	7	2.4	0	0
Agriculture Mechanization	7	0.6	1	2.0	0	0
Marketing & PHM	2	0.0	2	2.5	1	0
Micro/Minor Irrigation	3	0.0	3	1.4	0	0
Innovative Programmes	4	0.0	2	0.9	0	0
Seed	0	0.0	1	0.6	1	0
Extension	3	0.0	3	0.2	1	0
Organic Farming/ Bio Fertilizer	5	0.0	1	0.1	0	0
Dairy Development	1	0.0	0	0.0	0	0
Grand Total	**60**	**1.6**	**61**	**43.1**	**5**	**0**

Source: Same as Table 1

Note: No.: Number of projects

Table 7.1.4: Sector and Sub Sector Wise Classification Nature of Projects under RKVY during 11th Five Year Plan

(Per cent)

Sectors & Sub-sectors	Normal project		State Flagship project		National flagship project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Seed	**0.0**	**25.6**	**0.0**	**6.9**	**8.4**	**59.2**	**8.4(40.5)**	**91.7(442.4)**	**100(482.8)**
Others (seed)	0.0	0.0	0.0	0.0	0.0	100.0	0(0)	100(109.9)	100(109.9)
Seed distribution	0.0	32.1	0.0	10.8	0.0	57.1	0(0)	100(307.9)	100(307.9)
Seed farm	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(3.5)	100(3.5)
Seed processing centers and storage	0.0	34.4	0.0	0.0	65.6	0.0	65.7(40.5)	34.4(21.2)	100(61.6)
Horticulture	**1.0**	**74.7**	**0.2**	**2.7**	**6.4**	**15.0**	**7.6(28.2)**	**92.5(343)**	**100(371.2)**
Area expansion	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(246.3)	100(246.3)
Development of horticulture farms/ facilities	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(4.4)	100(4.4)
Fruits	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(3.2)	100(3.2)
Nurseries and green houses	0.0	0.0	100.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Others (horticulture)	24.9	75.1	0.0	0.0	0.0	0.0	24.9(3.6)	75.2(10.8)	100(14.4)
Vegetable	0.0	16.6	0.0	5.7	23.3	54.3	23.3(23.9)	76.8(78.5)	100(102.3)
Animal husbandry	**1.3**	**57.5**	**3.2**	**13.8**	**0.0**	**24.1**	**4.6(15.8)**	**95.5(330.8)**	**100(346.5)**
Animal health	3.8	46.1	12.5	37.6	0.0	0.0	16.3(14.5)	83.8(74.8)	100(89.3)
Breed improvement	0.0	1.9	0.0	12.3	0.0	85.8	0(0)	100(68.2)	100(68.2)
Extension and training	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.4)	100(2.4)
Feed and fodder	0.0	81.3	0.0	18.8	0.0	0.0	0(0)	100(32)	100(32)
Infrastructure	1.7	98.3	0.0	0.0	0.0	0.0	1.7(1.3)	98.4(73.2)	100(74.5)
Others (animal husbandry)	0.0	68.9	0.0	0.0	0.0	31.1	0(0)	100(80.4)	100(80.4)
Agriculture mechanization	**0.0**	**67.8**	**11.4**	**2.6**	**7.2**	**11.0**	**18.7(54.1)**	**81.4(236.1)**	**100(290.1)**
Custom hiring centres	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(99.7)	100(99.7)
Machines and equipment assistance	0.0	64.7	0.0	0.0	14.0	21.3	14.1(21.1)	86(129)	100(150)
Others (agri. Mechanization)	0.0	0.0	81.5	18.5	0.0	0.0	81.5(33)	18.6(7.5)	100(40.5)
Research (agri/horti/animal husbandry/ etc.)	**0.0**	**89.9**	**8.6**	**1.5**	**0.0**	**0.0**	**8.7(9.9)**	**91.4(104.4)**	**100(114.3)**
Agri facility	0.0	80.6	0.0	19.4	0.0	0.0	0(0)	100(6.2)	100(6.2)
Agri research project	0.0	94.4	5.0	0.6	0.0	0.0	5.1(4.9)	95(91.5)	100(96.3)

Agri. research/ teaching facility (infrastructure)	0.0	25.6	74.4	0.0	0.0	0.0	74.5(5)	25.6(1.8)	100(6.8)
Others (research-agri, horti & animal husbandry)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(5.1)	100(5.1)
Crop development	**0.0**	**79.5**	**0.0**	**20.5**	**0.0**	**0.0**	**0(0)**	**100(99.5)**	**100(99.5)**
Coarse cereals	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(8)	100(8)
Others (crop development)	0.0	26.9	0.0	73.1	0.0	0.0	0(0)	100(28)	100(28)
Paddy	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(38.5)	100(38.5)
Pulses	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(25.1)	100(25.1)
Marketing and post harvest management	**51.4**	**27.4**	**0.0**	**21.2**	**0.0**	**0.0**	**51.5(40)**	**48.6(37.9)**	**100(77.9)**
Godowns and warehouses	75.9	24.1	0.0	0.0	0.0	0.0	75.9(40)	24.2(12.8)	100(52.8)
Others (marketing & PHM)	0.0	34.2	0.0	65.8	0.0	0.0	0(0)	100(25.2)	100(25.2)
Dairy development	**4.7**	**57.0**	**38.3**	**0.0**	**0.0**	**0.0**	**43.1(30)**	**57(39.7)**	**100(69.7)**
Dairy units to farmers	0.0	0.0	100.0	0.0	0.0	0.0	100(6)	0(0)	100(6)
Milk processing	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(6.9)	100(6.9)
Promotion of milk collection centres	5.8	57.8	36.4	0.0	0.0	0.0	42.2(24)	57.9(32.9)	100(56.8)
Fisheries	**43.7**	**34.5**	**20.3**	**1.6**	**0.0**	**0.0**	**64(24.4)**	**36.1(13.8)**	**100(38.2)**
Farmers fish ponds/ assistance including training	4.9	78.8	16.3	0.0	0.0	0.0	21.3(2)	78.8(7.3)	100(9.2)
Fish marketing	63.2	0.0	36.8	0.0	0.0	0.0	100(9.5)	0(0)	100(9.5)
Infrastructure/ ponds of fisheries/ dept/ agency	48.8	35.0	16.3	0.0	0.0	0.0	65.1(11)	35(5.9)	100(16.9)
Others (fisheries)	76.7	0.0	0.0	23.3	0.0	0.0	76.7(2)	23.4(0.6)	100(2.6)
Organic farming / bio fertilizer	**0.0**	**98.6**	**0.0**	**1.4**	**0.0**	**0.0**	**0(0)**	**100(26.1)**	**100(26.1)**
Others (organic farming & bio-fertilizer)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(22.1)	100(22.1)
Promotion of organic farming	0.0	90.9	0.0	9.1	0.0	0.0	0(0)	100(4)	100(4)
Extension	**0.0**	**4.0**	**84.0**	**12.0**	**0.0**	**0.0**	**84.1(15.7)**	**16(3)**	**100(18.6)**
Infrastructure	0.0	0.0	100.0	0.0	0.0	0.0	100(13)	0(0)	100(13)
KVKs / knowledge centres / dissemination	0.0	15.0	52.4	32.6	0.0	0.0	52.4(2.7)	47.7(2.4)	100(5.1)
New approaches to extension	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Fertilizers and INM	**0.0**	**0.0**	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(16.3)**	**100(16.3)**
Fertilizer labs	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(16.3)	100(16.3)
Innovative programmes/ training/ capacity building/ others	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(10.6)**	**100(10.6)**
Innovative programmes	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(10.6)	100(10.6)
Natural resource management	**0.0**	**0.0**	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(10)**	**100(10)**

Others (NRM)	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(10)	100(10)
Sericulture	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(7)**	**100(7)**
Cocoon production	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Others (sericulture)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(6.8)	100(6.8)
Micro/minor irrigation	**0.0**	**43.8**	**0.0**	**56.2**	**0.0**	**0.0**	**0(0)**	**100(4.6)**	**100(4.6)**
Drip irrigation	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(2.6)	100(2.6)
Sprinkler and drip irrigation	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2)	100(2)
Integrated pest management	**0.0**	**5.7**	**0.0**	**94.3**	**0.0**	**0.0**	**0(0)**	**100(0.4)**	**100(0.4)**
Promotion of IPM	0.0	5.7	0.0	94.3	0.0	0.0	0(0)	100(0.4)	100(0.4)
Grand Total	**3.4**	**55.4**	**5.3**	**8.6**	**4.3**	**23.0**	**13.1(258.2)**	**87(1724.9)**	**100(1983.1)**

Source: Same as Table 1

Note: Figures in the parentheses are the respective absolute expenditure values;

Table 7.1.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

(Rs crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State Budget	% of Agri. Expenditure to State budget	% of Agri. Expenditure to Agri. GSDP	% of RKVY Expenditure to Agri. expenditure
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
2002-03	193	11	204	1001	20.4	16.8	-
2003-04*	295	28	323	1544	20.9	25.6	
2004-05	219	9	228	1381	16.5	18.6	
2005-06	238	27	265	1528	17.4	22.2	
2006-07	278	26	304	1746	17.4	23.2	
10th Plan	**1223**	**100**	**1323**	**7199**	**18.5**	**21.3**	
2007-08	317	182	500	2059	24.3	34.0	**1.3**
2008-09	373	69	442	2700	16.4	32.3	
2009-10	376	37	413	2370	17.4	30.6	
2010-11	323	73	397	2375	16.7	25.7	
2011-12*	372	71	444	2844	15.6	27.6	
11th Plan	**1762**	**434**	**2195**	**12347**	**18.1**	**30.0**	
% change over 10th Plan	**44.0**	**333.7**	**65.9**	**71.5**	**-**	**-**	**-**

Source: State Finances, RBI

Note: * indicates Revised estimates and Agriculture and allied activities includes Irrigation and flood control; budgetary expenditure is accounts only developmental expenditure;
Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100;For column 2, 3, 4 and 5 10th and 11th plans value indicates sum of five years; for column 6 and 7 10th and 11th plan value indicates average of five years;

Table 7.1.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs crore)

Particulars	10th Plan	11th Plan	% Change over 10th FYP
Crop Husbandry	259.5 (19.4)	590.7 (18.1)	127.7
Soil and Water Conservation	81.9 (6.2)	204.6 (6.3)	149.9
Animal Husbandry	114.3 (8.6)	240.2 (7.4)	110.2
Dairy Development	2.4 (0.2)	13.4 (0.5)	468.8
Fisheries	24.2 (1.8)	69.1 (2.2)	186.2
Forestry and Wild Life	257.8 (19.3)	525.6 (16.1)	103.9
Plantations	0 (0)	0 (0)	0.0
Food Storage and Warehousing	225.2 (16.8)	360.2 (11)	59.9
Agricultural Research and Education	5.6 (0.5)	22.3 (0.7)	303.4
Agricultural Finance Institutions	0 (0)	0 (0)	0.0
Co-operation	37.4 (2.8)	227.5 (7.0)	509.3
Other Agricultural Programmes	13.4 (1)	38.7 (1.2)	189.4
Major and Medium Irrigation	2.2 (0.2)	2.3 (0.1)	6.5
Minor Irrigation	199.8 (14.9)	608.7 (18.6)	204.7
Flood Control and Drainage	60 (4.5)	44.2 (1.4)	-26.4
Others	58.9 (4.4)	329.9 (10.1)	460.3
Total	**1342 (100)**	**3276.7 (100)**	**144.2**

Source: State Finances, RBI

Note: *The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control is categorized under others;

Figures in the parenthesis are percentage to the respective total;

Table 7.1.7: Percentage Share of Gross Domestic Product (GSDP) at Factor Cost by Industry Origin (at 2004-05 Prices)

(Per cent)

Year	Agri. and Allied Sector	Industry	Services
1999-00	50.1	18.0	38.5
2000-01	52.8	16.3	38.7
2001-02	43.3	25.4	35.0
2002-03	44.9	20.9	38.5
2003-04	42.0	24.4	36.6
2004-05	35.1	31.9	33.0
2005-06	33.3	32.5	34.2
2006-07	34.8	30.0	35.3
2007-08	34.8	31.2	34.0
2008-09	29.8	35.3	34.9
2009-10	26.8	29.9	43.3
2010-11	29.7	31.4	38.9
2011-12	28.3	32.7	39.1
2012-13	28.2	32.0	39.8

Note: GSDP at constant price (2004-05),
Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.1.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in Agricultural GSDP (%)	Growth in overall GSDP (%)	Net Sown Area (lakh ha)	Gross Cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-0.7	-4.3	1.6	2.6	156.1	73951.3
2003-04	3.7	10.9	2.0	2.5	126.4	62563.0
2004-05	-2.6	16.4	2.0	2.6	126.2	60615.3
2005-06	-2.5	2.8	2.1	2.7	129.1	57952.9
2006-07	9.8	5.2	2.1	2.7	129.7	62737.8
10th Plan Average	**1.5**	**6.2**	**2.0**	**2.6**	**133.5**	**63564.1**
2007-08	12.2	12.1	2.1	2.7	130.8	64891.5
2008-09	-6.9	8.7	2.1	2.8	130.2	63720.3
2009-10	-1.3	9.7	2.1	2.8	130.5	72414.1
2010-11	14.2	2.9	2.1	2.8	130.5	75462.9
2011-12	4.2	9.5	2.1	2.8	130.5	75462.9
11th Plan Average	**4.5**	**8.6**	**2.1**	**2.8**	**130.5**	**70390.3**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);
10th and 11th plan value indicates average of five years
*land productivity = agricultural GSDP/ha of NSA;

Table7.1.9: Trend of Inputs Use in Arunachal Pradesh

Year	Net irrigated Area (lakh ha)	Gross Irrigated Area (lakh ha)	% Net Irrigated to Net Sown Area*	Irrigation Intensity (%)	% Gross Irrigated to Gross Sown Area^	Fertilizer Consumption (Kg/ha of GCA)
2002-03	0.4	0.4	26.2	100.0	16.8	2.8
2003-04	0.5	0.5	23.4	100.0	18.5	2.9
2004-05	0.5	0.5	24.3	100.0	19.2	3.0
2005-06	0.5	0.5	24.3	100.0	18.8	2.9
2006-07	0.5	0.5	24.9	100.0	19.2	1.7
10th Plan Average	**0.5**	**0.5**	**24.6**	**100.0**	**18.5**	**2.7**
2007-08	0.5	0.5	25.7	100.0	19.9	2.7
2008-09	0.6	0.6	26.5	100.0	20.3	3.0
2009-10	0.6	0.6	26.4	100.0	20.3	3.0
2010-11	0.6	0.6	26.3	100.0	20.1	3.0
2011-12	0.6	0.6	26.3	100.0	20.1	2.5
11th Plan Average	**0.6**	**0.6**	**26.3**	**100.0**	**20.1**	**2.8**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of five years
***** indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 7.1.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	0.5	2.1	1.6	0.2	12.2	12.2
Wheat	1.1	6.1	4.3	-1.1	1.6	2.4
Maize	3.9	4.0	0.2	0.2	1.7	1.5
Coarse Cereals	3.2	3.9	0.7	0.2	1.5	1.2
Total Cereals	1.4	2.6	1.2	0.2	8.4	8.4
Other Pulses	3.2	4.0	0.7	-17.7	-17.9	-20.2
Total Pulses	2.9	3.7	0.7	4.4	5.1	0.5
Total Food grains	1.4	2.7	1.2	0.3	8.3	8.0

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.1.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	9.5	2.2	0.0	0.0
2003-04	0.0	-52.6	2.3	1.9
2004-05	4.3	-11.1	2.3	1.9
2005-06	0.0	150.0	-18.9	1.9
2006-07	2.1	5.0	0.0	0.7
10th plan	**3.2**	**18.7**	**-2.9**	**1.3**
2007-08	2.0	-4.8	439.7	2.2
2008-09	-52.0	0.0	-8.4	1.8
2009-10	8.3	5.0	5.3	-8.0
2010-11	7.7	0.0	7.1	18.9
2011-12	NA	NA	NA	4.8
11th plan	**-8.5**	**0.1**	**110.9**	**3.9**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan value indicates average of five years

NA: Data not available;

7.2 ASSAM

7.2.1. Background Information

Assam is one of the sister States of India's North-Eastern Region (NER)[7], bordering seven Indian States, viz. Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and West Bengal, and two international borders, viz. Bangladesh and Bhutan. The State covers a geographical area of 78,438 sq. km, estimated at about 2.4 per cent of the country's total geographical area, making it the 16th largest State in the country. As per 2011 census, the State stands at about 31 million populations, making it the 14th most populated State in the country, makes up about 2.5 per cent of the country's population. The density of population per sq. km. is about 397.

Assam continues to be predominantly an agrarianeconomy. The overall GSDP has increased from 5 per cent in 10th FYP to 6.8 per cent in 11th FYP, albeit the contribution of agriculture and its allied sector to GSDP has declined from 31 per cent in 1999-00 to 21 per cent in 2012-13 (Table 7.2.7). As of the challenges of agriculture sector in Assam, almost 17 per cent of the State's NSA is identified as chronically flood prone area, and 3.3 per cent of NSA is categorised as chronically drought prone area. Also, 11 per cent of the total geographical area of the State comes under shifting cultivation and 1 per cent of the geographical area of the State is cultivable waste land. Though the State receives good average annual rainfall, 8 per cent of the cultivable land comes under char area. Besides these natural difficulties, poor technology and weak agriculture infrastructure, especially irrigation facility exacerbate sector's initiatives for better production and productivity of different crops.

After critical analysis of the sectoral growth of the State economy, it has been observed that the growth of the agriculture and allied sector in the State was not encouraging during the last three consecutive Five-Year Plan (8th to 10th Five-Year Plan) periods. With the apprehension of slow growth of agriculture and its allied sector in the country, the Rashtriya Krishi Vikas Yojana **(**RKVY) was implemented by the government of India on May 29, 2007, including Assam. The scheme aims at achieving 4 per cent annual growth in agriculture and its allied sector during 11th Five Year plan (2007-12). Over the years, the State economy has witnessed a shift towards the service sector[8] resulting service sector to flourish very rapidly.

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[7]North Eastern Region of India consists of 8 States– Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Sikkim and Tripura.
[8]Reduced agriculture GSDP from 28 per cent in 2002-03 to 21 per cent in 2011-12 in Assam

With the introduction of RKVY scheme in the State, it was expected to increase the agriculture sector at least 4 per cent per annum. According to Directorate of Economics and Statistics, government of Assam (DES, 2012-13), production and productivity of major agriculture crops in Assam has increased significantly due to RKVY scheme. For instances, the growth of production of rice was 52 per cent during the 11th FYP, 19 per cent of pulses and 7 per cent of oilseeds. As of the productivity of agriculture crops, rice productivity has been 39 per cent, 6 per cent of pulses and 8 per cent of oilseeds during the same period. Now, the issue remains in this context is whether this shift can be solely credited to RKVY scheme or not. Detail evaluation is needed, through primary as well as secondary data.

7.2.2. Rationale of the Scheme's Evaluation in Assam

Having understood the initiatives taken up by the government, it is imperative to analyse the impact of the scheme (RKVY) on overall development of agriculture sector in the State in the 11th FYP (post-RKVY period). As of the parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY scheme covers not only field crops but also many other agriculture related sectors like, infrastructure, irrigation, marketing, extension services, trainings, etc., mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agriculture sector involves multi-faceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult; some approximations have to be made while evaluating the performance of RKVY scheme. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be made for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance of the State will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment is made through growth in area, production and productivity of crops as well as change in physical infrastructures of the sector in the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as one of the main parameters of performance evaluation.

7.2.3. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across the sectors. There are 16 broader sectors of agriculture cover under RKVY scheme in

Assam. Based on the expenditure limit across the 16 sectors, 9 major sectors[9] have been taken up for detail evaluation (Table 7.2.1 and Figure 7.2). Out of the 16 sectors, one sector was not initiated or abundant during the 11th FYP. These 9 sectorsutilized 83.36 per cent of the total expenditure of the RKVYscheme and remaining 6 minor sectors utilized only 16.64 per cent of the total expenditure in the State. According to the expenditure limit, the sectors have been arranged in descending order in Table 7.2.1. Within the selected sectors, expenditure per project incurred by the Micro/minor irrigation sector was found to be at the highest with Rs.38.80 crores and lowest expenditure was incurred by the dairy development sector with Rs. 1.13 crore in the State during the 11th FYP.

Interestingly, cost per project of a few minor sectors (like, Fertilisers and INM, Organic farming / bio fertiliser, etc.) were found to be higher compared to that of the major sectors (like, horticulture, animal husbandry and fisheries). As shown in Table 7.2.1, RKVY sanctioned Rs. 1059.34 crores to develop 197 projects during 11th FYP in Assam. Out of the sanctioned amount Rs. 678.3 crore has been spent (64.03 per cent of the sectioned amount). Out of the total 197 projects sanctioned under RKVY, 135 projects have been initiated during the period and on an average, Rs 5.02 crore was spent per project. The average expenditure-allocation ratio was 60 per cent, meaning the out of Rs 100 sanctioned, Rs. 60 could be utilised by the end of 11th PFY in the State.

The micro/minor irrigation sector was allocated the largest share of the RKVY fund, accounted for Rs. 173.74 crores and spent Rs 155.19 crore. The sectors which have been allocated lesser fund were– natural resource management, non-farm activities and fertilizer and INM with Rs. 14.89, Rs. 15.05 and Rs. 19.44 crores respectively. Micro/minor irrigation sector spent lion's share of the fund (Rs.155.19 crore) from the total fund. It was followed by crop development with Rs.88.48 crore. The sectors which spent less were– the dairy development, natural resource management and fertilisers and INM with Rs. 14.71, Rs. 14.98 and Rs. 15.15 crores respectively. Though the allocation of fund under the project of "non-farm activities" was made with Rs. 15.05 crore, the project could not be initiated during the period and no expenditure was made on this particular project. With respect to expenditure allocation ratio, the natural resource management sector spent more than allocated amount (expenditure-allocation ratio was 1.01:1), meaning that, Rs. 14.98 crore was spent by the sector against the allocated fund of Rs. 14.89 crore. Barring NRM sector, no other sector reached 100 per cent spending of the allocated fund during the period.

[9] The 9 Sectors are Micro/minor irrigation, Crop development, Animal husbandry, Agriculture mechanization, Fisheries, Horticulture, Innovative programmes/ training/ capacity building/ others, Research (agri/horti/animal husbandry/ etc.) and Marketing and post harvest management

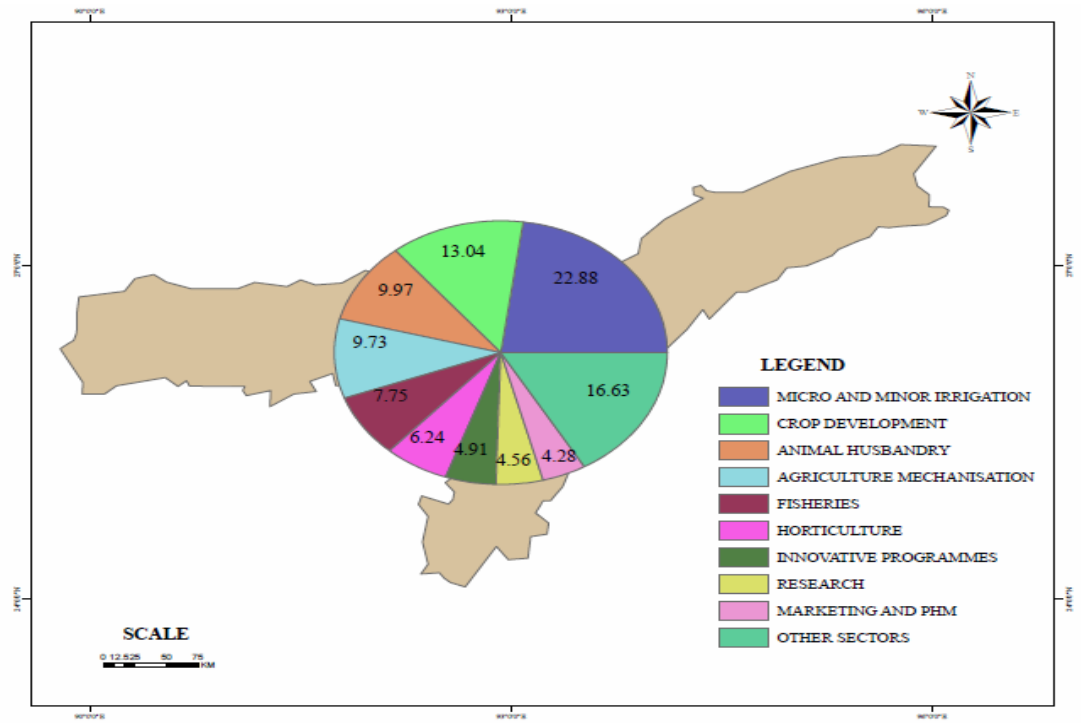

Figure 7.2: Share of Expenditure across Sectors

Note: Other sector includesseed, extension, organic farming / bio fertilizer, fertilizers & INM, NRM, dairy development and non farm activities;

7.2.3. Sector-Wise Size of the Projects based on the Expenditure

To understand the magnitude of the projects based on the expenditure limit, whole projects under RKVY scheme were classified under four slabs (Table 7.2.2). They are a) 0 to 1 crore, b) Above 1 crore to 10 crore c) Above 10 crore to 25 crore, and d) above 25 crore. Out of total project included under RKVY in Assam, 34 per cent of projects falls under the first category/slab (0 to 1 crore), but, less share of expenditure was spent by these projects, estimated at 2.82 per cent of the total scheme's expenditure. Most of the projects (55.6 per cent of the total) come under the second slab (1 to 10 crore) and 43.9 per cent of the scheme's expenditure were spent by them. Under the third and fourth expenditure category/slab (Above 10 crore to 25 crore and above 25 crore) very limited projects were covered under these slabs, but 22.62 per cent and 30.67 per cent of the total RKVY fund have been spent under these two slabs respectively.

In terms of the status of the projects and their corresponding expenditures, the completed and substantially completed projects covered 60 per cent of the project during the 11th FYP, accounted for 118 projects. Despite allocation of the fund under RKVY, 2 projects have been abundant. Altogether 77 projects were found to be in progress or "on-going", estimated at around 39 per cent of the total project. However, hardly 14 per cent of the total expenditure was made for these on-going projects, estimated at Rs. 95 crore in

absolute term, and the remaining 86 per cent of the total expenditure was made for the completed/substantially completed projects during the 11th FYP (Table 7.2.3).

7.2.4. Status-Wise Expenditure according to Status

Assam is identified as an agriculturally backward State, in term of physical infrastructure which includes road and communication, flood control, post-harvest mechanism of agriculture, marketing, etc. Therefore, more emphasis should be given in this regard. To understand the importance of the sectors, the entire projects taken up under the RKVY scheme were carried under two broad categories– normal and State flagship projects. The projects covered under these two categories can again be classified into two types– infrastructure and non-infrastructure projects. Altogether 52.2 per cent of the projects came under infrastructure and remaining 47.8 per cent were found under the non-infrastructure type (Table 7.2.4).

Further, of the total projects, 71.1 per cent came under normal project and remaining 28.9 per cent were under State flagship project. Again, of the total projects taken up under the scheme during 11th FYP, 31.3 per cent were the infrastructure projects carried out by normal project category and 39.8 per cent were the non-infrastructure projects carried out under the normal project category. Under the State flagship projects, 20.9 per cent and 8 per cent were the infrastructure and non-infrastructure projects respectively during 11th FYP. In Table 7.2.5 budgetary expenditure of agriculture and share of RKVY to agriculture is depicted in Assam during 10th and 11th FYP. After the inception of RKVY, i.e. in 11th FYP the contribution of the scheme to State's agriculture expenditure was 5.9 per cent in Assam. The share of agriculture to State budget increased from 12 per cent in 10th FYP to 16 per cent in 11th FYP, and the share of agriculture expenditure to agriculture GSDP also increased from 6 per cent in 10th FYP to 10 per cent in 11th FYP.

When we look at the incremental change in the budgetary expenditure of agriculture and its allied sector in 11th FYP over the 10th FYP was around 163 per cent in Assam (Table 7.2.6). Of the sectors, crop development registered the larger incremental change over the 10th plan. It was followed by agriculture research and fisheries in the second and third position respectively. However, no change was found for the plantation and food storage and warehouse sectors during the period. In the case of annual average growth of the major crops in 11th FYP over the previous period, total food grain and cereal have been at the highest during the 11th plan. As also rice being the staple food for the State, more emphasis was given on the area, production and yields of this crop and achieved the highest return during the period (Table 7.2.10). In term of inputs used (Table 7.2.9), fertiliser consumption has increased significantly after the RKVY. Similar trend was witnessed in irrigation intensity, irrigated area in the State. However, for live stock/fish output (Table

7.2.11), barring fish, other products, like meat, milk and egg have gone down during 11th FYP in the State.

In nutshell, overall agricultural growth in the State has increased significantly during 11th plan, after the inception of RKVY. Output of the major crops has also increased greatly. Of the crops, the area covered under paddy cultivation was 25.71 lakh hectares, estimated at around 91 per cent of the total cropped area under food-grains in the State during 2010-11. The production of total food-grains in the State was 51.78 lakh tonnes during 2010-11 against 45.57 lakh tonnes during 2009-10, showing an incremental change of 13 per cent over the previous year. Also, the increase in production of pulses in 2010-11 has recorded at 9.1 per cent over 2009-10. During the same period, the production of oilseeds has also increased by 8.4 per cent as compared to the previous year.

7.2.5. An Assessment of RKVY Performance in the State and Concluding Remarks

In Assam, RKVY project comprises of 16 sectors which include 39 sub-sectors. Out of the 16 sectors, 9 sectors absorbed 83.36 per cent of the total expenditure of the scheme. Among the major sectors, minor/micro irrigation utilized the major funds. It was followed by crop development, animal husbandry, agriculture mechanization, fisheries, horticulture, innovative programmes/ training/ capacity building/ others, research (agri/horti/animal husbandry/ etc.) and marketing and post-harvest management. The major focus of the scheme's evaluation was given to the magnitude of expenditure of the sectors, as the scheme’s impact can be depicted directly or indirectly on which the expenditures have been made. In the State, to develop infrastructure and assets in agriculture and its allied sectors, RKVY spent significant share of funds (5.9 per cent of the total expenditure). It might have played a crucial role for development of agriculture and its allied sector in the State. Besides, 28.9 per cent of the total expenditure was spent under the State flagship projects. It means, 28.9 per cent of the fund was spent for the priority sectors of the State. As per the RKVY mandate, the funds were being utilized and spent for development of agriculture and its allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the stated goals have been met.

To verify the performance of the nine sectors, first we took basic indicators and then cross checked in two time periods (pre and post RKVY), *i.e.*, 2006-07 and 2010-11. As indicated in Appendix Table 7.2, the area covered under micro irrigation as well as cropping intensity was found to be increased by 60.69 per cent and 8.03 per cent respectively over a period of five years. In the agricultural mechanization, the distribution of tractors and power tillers increased by 58.9 and 12 per cent respectively while farm power increased by 40 per cent. In the animal husbandry sector, production of milk and meat increased by 1.08 and 12.29 per cent respectively during. During the 11th plan, RKVY share on State

agriculture expenditure was 5.9 per cent, and with the introduction of the scheme, share of agriculture expenditure in the State budget has risen from 12 per cent in 10th plan to 16 per cent in 11th plan.

In totality, the Assam State has achieved the targeted growth rate of 4 per cent in agriculture as planned in 11th FYP. The average agricultural growth rate during the 11th Plan period was 4.1 per cent compared 1.2 per cent during the previous plan period. Also, the State budgetary expenditure on agriculture has increased by 39.2 per cent in 11th plan over the previous plan. Major increase was visible in the sectors like, crop development, minor/micro irrigation, agri. research and fisheries. Nevertheless, this achievement might not be solely due to the RKVY intervention in the State, because there have been some significant initiatives like, Tribal Sub-plan, Land Reclamation, NAEP-III, etc. in the recent past. But no one can deny the contribution of RKVY in the process of agricultural development in Assam. In order to validate these results drawn from the available secondary data of RKVY projects, primary survey of beneficiaries is very necessary. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

TABLES

Table 7.2.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th FYP

Sectors	No. of project*	Allocation^ Rs. Crore	Expenditure^ Rs. Crore	Expenditure allocation ratio**	Expenditure per Project
1	**2**	**3**	**4**	**5=3/2**	**6=4/2**
Micro/Minor Irrigation	4 (4)	173.7 (16.5)	155.2 (22.9)	0.9	38.8
Crop Development	13 (14)	91.6 (8.7)	88.5 (13.1)	1.0	6.8
Animal Husbandry	25 (38)	104.9 (10)	67.6 (10)	0.6	2.7
Agriculture Mechanization	4 (7)	121.6 (11.5)	66. (9.8)	0.5	16.5
Fisheries	19 (24)	75.3 (7.2)	52.5 (7.8)	0.7	2.8
Horticulture	11 (27)	72.2 (6.9)	42.3 (6.3)	0.6	3.8
Innovative program/ training/capacity building	1 (4)	40.9 (3.9)	33.3 (5)	0.8	33.3
Research (agri/horti/animal husbandry/ etc.)	10 (19)	43.9 (4.2)	30.9 (4.6)	0.7	3.1
Marketing & PHM	8 (10)	48.4 (4.6)	29 (4.3)	0.6	3.6
Seed	10 (11)	38.6 (3.7)	28.9 (4.3)	0.7	2.9
Extension	6 (8)	145.1 (13.7)	21.2 (3.2)	0.1	3.5
Organic Farming / Bio Fertilizer	4 (4)	25.1 (2.4)	17.9 (2.7)	0.7	4.5
Fertilizers & INM	3 (5)	19.4 (1.9)	15.2 (2.3)	0.8	5.1
NRM	4 (4)	14.9 (1.5)	14.9 (2.3)	1.0	3.7
Dairy Development	13 (17)	28.6 (2.7)	14.7 (2.2)	0.5	1.1
Non Farm Activities	0 (1)	15.1 (1.5)	0 (0)	0.0	0.0
Grand Total	**135 (197)**	**1059.3 (100)**	**678.3 (100)**	**0.6**	**5.0**

Source: www.rkvy.nic.in, April (2013)

Note:* Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY; ^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total;

** The ratio <1 indicates the allocation is not fully utilised, the ratio=1 indicates the allocation is exactly equal to the expenditure and the ratio =0 indicates the allocation has not spent yet;

PHM: Post Harvest Management; INM: Integrated Nutrient Management; NRM: Natural Resource Management;

Table 7.2.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crore		10 crore to 25 crore		Above 25 crores		Grand Total*	
	No	**Expd.**	**No.**	**Expd.**	**No.**	**Expd.**	**No.**	**Expd.**	**No.**	**Expd.**
Micro/minor irrigation	0.0	0.0	50.0	8.2	25.0	7.9	25.0	197.3	4 (100)	155.2 (100)
Crop development	7.7	0.3	69.2	43.8	23.1	55.9	0.0	0.0	13 (100)	88.5 (100)
Animal husbandry	48.0	6.9	48.0	77.7	4.0	15.4	0.0	0.0	25 (100)	67.6 (100)
Agriculture mechanization	25.0	0.1	25.0	9.4	25.0	23.4	25.0	67.2	4 (100)	66.0 (100)
Fisheries	52.6	8.4	42.1	69.3	5.3	22.3	0.0	0.0	19 (100)	52.5 (100)
Horticulture	36.4	3.9	45.5	38.7	18.2	57.4	0.0	0.0	11 (100)	42.3 (100)
Innovative programmes/ training/ capacity building/ others	0.0	0.0	0.0	0.0	0.0	0.0	100.0	50.5	1 (100)	33.3 (100)
Research (agri/horti/animal husbandry/ etc.)	20.0	3.0	80.0	97.0	0.0	0.0	0.0	0.0	10 (100)	30.9 (100)
Marketing and PHM	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	8 (100)	29.0 (100)
Seed	40.0	3.8	50.0	51.7	10.0	44.5	0.0	0.0	10 (100)	28.9 (100)
Extension	50.0	5.8	33.3	14.2	16.7	80.0	0.0	0.0	6 (100)	21.2 (100)
Organic farming / bio fertilizer	25.0	2.3	75.0	97.7	0.0	0.0	0.0	0.0	4 (100)	18 (100)
Fertilizers and INM	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	3 (100)	15.2 (100)
NRM	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	4 (100)	15.0 (100)
Dairy development	61.5	30.1	38.5	69.9	0.0	0.0	0.0	0.0	13 (100)	14.7 (100)
Grand Total	**34.1**	**2.8**	**55.6**	**43.9**	**8.2**	**22.6**	**2.2**	**315.0**	**135 (100)**	**678.3 (100)**

Source: Same as Table 1;**Note:***No:Number of projects where are in absolute figures; Expd: Expenditure; Figures in the parenthesis are percentage of accompanying absolute values;

Table 7.2.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/ Substantially completed		Abandoned/ not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
Micro/Minor Irrigation	1	5	3	150.2	0	0
Crop Development	5	12.7	9	75.8	0	0
Animal Husbandry	13	0.0	25	67.6	0	0
Agriculture Mechanization	5	44.4	2	21.6	0	0
Fisheries	5	0.0	19	52.5	0	0
Horticulture	15	0.0	11	42.3	1	0
Innovative programmes	3	0.0	1	33.3	0	0
Research	9	0.0	10	30.9	0	0
Marketing & PHM	3	1.1	7	28.0	0	0
Seed	2	1.2	8	27.6	1	0
Extension	5	19.8	3	1.4	0	0
Organic Farming / Bio Fertilizer	2	7.4	2	10.5	0	0
Fertilizers & INM	2	0.0	3	15.2	0	0
NRM	0	0.0	4	15.0	0	0
Dairy Development	6	3.4	11	11.3	0	0
Non Farm Activities	1	0.0	0	0.0	0	0
Grand Total	**77**	**95.0**	**118**	**583.3**	**2**	**0**

Source: Same as Table 1;
Note: Number of projects

Table 7.2.4: Sector and Sub Sector Wise Classification by Nature of Project under RKVY during the 11th FYP

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		Grand Total		Grand Total
	Infra structure	Non-infra structure	Infra structure	Non-infra structure	Infra structure	Non- infra structure	
Micro/minor irrigation	**12.8**	**3.2**	**83.9**	**0.0**	**96.8(150.2)**	**3.3(5)**	**100(155.2)**
Pump sets (diesel/electric)	8.3	3.4	88.3	0.0	96.7(142.5)	3.4(5)	100(147.5)
Tube wells	100.0	0.0	0.0	0.0	100(7.7)	0(0)	100(7.7)
Crop development	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(88.5)**	**100(88.5)**
Coarse cereals	0.0	100.0	0.0	0.0	0(0)	100(21.3)	100(21.3)
Oilseeds and pulses	0.0	100.0	0.0	0.0	0(0)	100(23.2)	100(23.2)
Others (crop development)	0.0	100.0	0.0	0.0	0(0)	100(40.1)	100(40.1)
Sugarcane	0.0	100.0	0.0	0.0	0(0)	100(4)	100(4)
Animal husbandry	**53.1**	**46.9**	**0.0**	**0.0**	**53.1(35.9)**	**47(31.8)**	**100(67.7)**
Animal health	0.0	100.0	0.0	0.0	0(0)	100(7.2)	100(7.2)
Breed improvement	0.0	100.0	0.0	0.0	0(0)	100(11)	100(11)
Feed and fodder	73.7	26.3	0.0	0.0	73.7(8.5)	26.4(3.1)	100(11.5)
Infrastructure	72.5	27.5	0.0	0.0	72.6(19.7)	27.5(7.5)	100(27.2)
Others (animal husbandry)	71.2	28.8	0.0	0.0	71.3(7.8)	28.8(3.2)	100(11)
Agriculture mechanization	**32.7**	**0.0**	**0.0**	**67.2**	**32.8(21.7)**	**67.3(44.5)**	**100(66.1)**
Machine & equipment assistance	32.7	0.0	0.0	67.2	32.8(21.7)	67.3(44.5)	100(66.1)
Fisheries	**49.3**	**9.7**	**22.3**	**18.6**	**71.7(37.7)**	**28.4(15)**	**100(52.6)**
Farmers fish ponds/ assistance including training	68.6	0.0	0.0	31.4	68.6(21.4)	31.5(9.8)	100(31.2)
Fish marketing	0.0	100.0	0.0	0.0	0(0)	100(3.9)	100(3.9)
Infrastructure/ ponds of fisheries/ dept/ agency	13.8	8.4	77.8	0.0	91.6(13.9)	8.5(1.3)	100(15.1)
Others (fisheries)	100.0	0.0	0.0	0.0	100(2.5)	0(0)	100(2.5)
Horticulture	**46.3**	**53.7**	**0.0**	**0.0**	**46.3(19.6)**	**53.8(22.8)**	**100(42.4)**
Development of horticulture farms/ facilities	66.8	33.2	0.0	0.0	66.8(19.6)	33.3(9.8)	100(29.4)
Others (horticulture)	0.0	100.0	0.0	0.0	0(0)	100(13)	100(13)
Innovative programmes	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(33.4)**	**100(33.4)**
Innovative programmes	0.0	100.0	0.0	0.0	0(0)	100(33.4)	100(33.4)

Research	**90.5**	**9.5**	**0.0**	**0.0**	**90.6(28)**	**9.5(3)**	**100(31)**
Agri facility	90.3	9.7	0.0	0.0	90.4(5)	9.7(0.6)	100(5.6)
Agri research project	90.6	9.4	0.0	0.0	90.6(23)	9.5(2.4)	100(25.4)
Marketing and PHM	**84.9**	**15.1**	**0.0**	**0.0**	**85(24.7)**	**15.1(4.4)**	**100(29.1)**
Others (marketing & PHM)	58.5	41.5	0.0	0.0	58.6(6.2)	41.5(4.4)	100(10.6)
Setting up/ strengthening of market infrastructure	100.0	0.0	0.0	0.0	100(18.5)	0(0)	100(18.5)
Seed	**46.4**	**53.6**	**0.0**	**0.0**	**46.4(13.4)**	**53.7(15.5)**	**100(28.9)**
Others (seed)	100.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Seed distribution	0.0	100.0	0.0	0.0	0(0)	100(4.1)	100(4.1)
Seed processing center & storage	100.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Seed production	52.9	47.1	0.0	0.0	53(12.9)	47.1(11.5)	100(24.3)
Extension	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(21.2)**	**100(21.2)**
Infrastructure	0.0	100.0	0.0	0.0	0(0)	100(2.9)	100(2.9)
New approaches to extension	0.0	100.0	0.0	0.0	0(0)	100(17.1)	100(17.1)
Training/ study tour	0.0	100.0	0.0	0.0	0(0)	100(1.4)	100(1.4)
Organic farming / bio fertilizer	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(18)**	**100(18)**
Promotion of organic farming	0.0	100.0	0.0	0.0	0(0)	100(18)	100(18)
Fertilizers and INM	**24.1**	**75.9**	**0.0**	**0.0**	**24.1(3.7)**	**76(11.5)**	**100(15.2)**
Micro nutrients labs	0.0	100.0	0.0	0.0	0(0)	100(8.5)	100(8.5)
Soil health cards and soil testing	0.0	100.0	0.0	0.0	0(0)	100(3)	100(3)
Soil testing lab	100.0	0.0	0.0	0.0	100(3.7)	0(0)	100(3.7)
NRM	**100.0**	**0.0**	**0.0**	**0.0**	**100(15)**	**0(0)**	**100(15)**
Land reclamation	100.0	0.0	0.0	0.0	100(4.9)	0(0)	100(4.9)
Water conservation structures and watershed dev	100.0	0.0	0.0	0.0	100(10.2)	0(0)	100(10.2)
Dairy development	**29.8**	**70.2**	**0.0**	**0.0**	**29.9(4.4)**	**70.2(10.4)**	**100(14.8)**
Assistance to dairy unions/ farmers (inc training)	42.6	57.4	0.0	0.0	42.7(0.9)	57.4(1.2)	100(2.1)
Dairy units to farmers	19.3	80.7	0.0	0.0	19.4(0.5)	80.7(2)	100(2.4)
Others (dairy development)	0.0	100.0	0.0	0.0	0(0)	100(3.8)	100(3.8)
Promotion of milk collection centers	47.1	52.9	0.0	0.0	47.2(3.1)	52.9(3.5)	100(6.6)
Grand total	**31.3**	**39.8**	**20.9**	**8.0**	**52.2(354)**	**47.9(324.4)**	**100(678.3)**

Source: Same as Table 1; **Note**: Figures in the parentheses are the respective absolute expenditure values in crore;

Table 7.2.5: Trend in budgetary expenditure on agriculture and allied sector (at 2004-05 Prices)

(Rs. crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	% of RKVY expenditure to agri. expenditure
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
2002-03	540	124	665	4937	13.5	4.9	
2003-04*	879	170	1050	8849	11.9	7.6	
2004-05	696	110	806	8684	9.3	5.9	
2005-06	713	104	817	6879	11.9	5.8	
2006-07	789	177	965	7660	12.6	6.8	
10th Plan	**3617**	**686**	**4303**	**37010**	**11.8**	**6.2**	
2007-08	822	359	1180	8058	14.6	8.0	
2008-09	867	344	1211	8382	14.5	8.1	
2009-10	968	557	1525	10081	15.1	9.5	**5.9**
2010-11	1243	376	1619	10156	15.9	9.6	
2011-12*	1694	849	2544	14847	17.1	14.6	
11th Plan	**5594**	**2484**	**8079**	**51524**	**15.5**	**10.0**	
% change over 10th plan	**54.7**	**262.0**	**87.8**	**39.2**			

Source: State Finances, RBI

Note: *indicates Revised estimates and Agriculture and allied activities includes Irrigation and flood control; Budgetary expenditure accounts only developmental expenditure;

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100; For column 2, 3, 4 and 5 10th and 11th plan value indicates sum of five years; for column 6 and 7 10th and 11th plan value indicates average of five years

Table 7.2.6: Composition of State Budgetary Expenditure on Agriculture and its Allied Sector

(Rs. crore)

Particulars	10th Plan	11th Plan	% change over 10th FYP
Crop Husbandry	729.6 (16.8)	2285.5 (20)	213.3
Soil and Water Conservation	99.1 (2.3)	142 (1.3)	43.3
Animal Husbandry	428.5 (9.9)	733.8 (6.5)	71.3
Dairy Development	67.7 (1.6)	105.9 (1)	56.5
Fisheries	112.8 (2.6)	239.3 (2.1)	112.3
Forestry and Wild Life	638.3 (14.7)	1195.6 (10.5)	87.3
Plantations	0.2 (0.1)	4.1 (0.1)	0.0
Food Storage and Warehousing	84.1 (2)	351.6 (3.1)	0.0
Agricultural Research and Education	275.4 (6.4)	603.7 (5.3)	119.2
Agricultural Finance Institutions	0 (0)	0 (0)	0.0
Co-operation	183.5 (4.3)	215.9 (1.9)	17.7
Other Agricultural Programmes	13.3 (0.4)	21.8 (0.2)	64.5
Major and Medium Irrigation	152.4 (3.6)	284.7 (2.5)	86.9
Minor Irrigation	450.9 (10.4)	1077.4 (9.5)	139.0
Flood Control and Drainage	423.4 (9.8)	695.2 (6.1)	64.2
Others*	691.9 (16)	3492.4 (30.6)	404.8
Total	**4350.3 (100)**	**11448.3 (100)**	**163.2**

Source: State Finances, RBI

Note: *The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control is categorized under others;

Figures in the parenthesis are percentage to the respective total;

Table 7.2.7: Percentage Share of Gross Domestic Product (GSDP) at Factor Cost by Industry Origin (at 2004-05 Prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	31.9	22.5	44.2
2000-01	30.7	22.1	45.7
2001-02	29.7	23	46
2002-03	28.1	25.7	45.7
2003-04	26.9	27	45.9
2004-05	25.6	27.5	46.9
2005-06	25.4	25.7	48.9
2006-07	24.7	24.5	50.8
2007-08	24.2	23.6	52.2
2008-09	23.4	23.8	52.8
2009-10	22.9	23.8	53.3
2010-11	22.5	22.4	55.1
2011-12	21.7	21.7	56.6
2012-13	21.1	21	57.9

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.2.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	1.2	7.1	28	40	143.8	49532
2003-04	1.5	6.0	28	40	143.7	50282
2004-05	-1.4	3.7	28	39	141.5	49603
2005-06	2.6	3.4	28	39	143.4	50875
2006-07	1.9	4.7	28	38	136.7	51848
10th Plan Average	**1.2**	**5.0**	**28**	**39**	**141.8**	**50428**
2007-08	2.8	4.8	28	38	139.4	53309
2008-09	1.9	5.7	28	40	142.3	53242
2009-10	6.9	9.0	28	41	145.8	56892
2010-11	5.9	7.9	28	42	148.0	60231
2011-12	2.9	6.5	28	42	148.0	62006
11th Plan Average	**4.1**	**6.8**	**28**	**41**	**144.7**	**57136**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);
10th and 11th plan value indicates average of the five years;
* Land productivity = agricultural GSDP/ha of NSA;

Table 7.2.9: Trend in Inputs Use in Assam

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% Net irrigated to net sown area*	Irrigation intensity (%)	% Gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	1.4	1.7	5.1	123.6	4.4	42.7
2003-04	1.4	1.7	5.1	123.6	4.4	47.5
2004-05	1.4	1.7	5.1	122.1	4.4	41.3
2005-06	1.4	1.4	5.1	101.4	3.6	49.3
2006-07	1.4	1.4	5.1	101.4	3.8	54.6
10th Plan Average	**1.4**	**1.6**	**5.1**	**114.4**	**4.1**	**47.1**
2007-08	1.4	1.4	5.1	101.4	3.7	57.3
2008-09	1.4	2.9	5.0	207.9	7.3	62.1
2009-10	2.0	2.3	7.0	114.2	5.5	63.1
2010-11	1.6	1.7	5.8	104.9	4.1	67.6
2011-12	1.6	1.7	5.8	104.9	4.1	67.3
11th Plan Average	**1.6**	**2.0**	**5.7**	**126.7**	**4.9**	**63.5**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of the five years;
***** indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 7.2.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	-2.8	-5.1	-2.5	3.0	9.5	3.1
Wheat	-2.7	-3.6	-1.0	-1.3	-0.7	6.1
Total Cereals	-2.8	-5.1	-2.4	2.9	9.2	-1.2
Gram	0.0	0.2	0.0	-2.4	-2.2	6.0
Arhar/Tur	0.1	0.2	0.0	-2.9	-2.7	0.4
Other Pulses	-2.1	-2.0	0.0	-16.0	-16.0	0.1
Total Pulses	-1.9	-1.8	0.0	2.6	3.1	-20.0
Total Food grains	-2.8	-5.0	-2.4	2.9	9.1	0.6
Rapeseed & Mustard	-2.3	-2.1	-0.4	0.3	3.1	-1.5
Linseed	-4.3	-4.2	0.0	-2.0	-1.3	3.0
Castor	-8.2	5.3	34.5	-19.7	-33.5	0.8

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.2.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	3.4	NA	0.6	2.5
2003-04	3.1	-1.6	0.8	9.4
2004-05	1.7	13.6	1.5	2.9
2005-06	1.1	8.0	2.7	0.9
2006-07	0.5	7.4	-0.2	-3.5
10th plan average	**2.0**	**6.9**	**1.1**	**2.4**
2007-08	0.1	3.4	-8.2	4.9
2008-09	0.1	3.3	-5.1	5.2
2009-10	0.4	3.2	0.3	9.3
2010-11	4.5	6.3	0.8	3.8
2011-12	NA	NA	NA	0.6
11th plan average	**1.3**	**4.1**	**-3.1**	**4.8**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years;
NA: data not available;

7.3 BIHAR

7.3.1. Background Information

Bihar is located in theEastern part of the country. The State covers a geographical area of 94,163 sq. km, which accounts 5.68 per cent of the country's total geographical area. It is the 12th largest state in terms of geographical size in India. In terms of population, the state stands about 103 million, making it the 3rd most populated state in India. The state makes up about 8.58 per cent of the country's population. The density of population per sq. km is about 1,106 (2011 census).

The economy of Bihar is basically on agriculture based. At present, agriculture sector provides employment to 81 per cent of the people of the state. The state is characterized by small land holders in the country. More than 90 per cent of farm households belong to marginal farm category (less than 1 ha land) but own about 44 per cent of cultivated land in Bihar. The state agriculture growth was almost stagnant during 1981-1994, and its growth was negative in Ninth Five Year Plan (-1.4 per cent) which turned positive in Tenth Five Year Plan (0.91 per cent). The state agriculture sector achieved spectacular growth of 31 per cent in the year 2006-07. But the state failed to maintain higher agriculture growth due to flood in 2007 and 2008, and drought in 2009 and 2010. Despite severe drought during 2010, the state recorded the food grain production of 125 lakh tonnes and milk production of 63 lakh tonnes, indicating sustainability in agricultural production in Bihar (***The Bihar Times, 8th Nov 2011***).

As far as the challenges of agriculture sector in Bihar, it receives bountiful rainfall ranging between 1000-1500 mm but only half of the area is irrigated, leading to low agricultural productivity and high risk. The poor performance of agriculture in Bihar may be due to the multiple reasons like high risk due to concurrent twin problems of flood and drought; small and fragmented landholdings; week institutions and poor governance; absence of enabling agri-infrastructure; and poor policy response to changing agriculture. It is irony that traditional institutions have eroded and new institutions did not develop. Credit and insurance sector is weak, though the credit flow in the state is rising over time. The seed sector, technology delivery system and input service delivery system are also under stress. The state is characterized to have poor road network, thin markets and fragile electricity sector. The markets are underdeveloped and thinly spread become a major constraint in accessing the markets and led to low prices of their produce. Often farmers get prices below the minimum support prices of paddy and wheat during the marketing season. Besides these natural calamities, poor institution set up, poor technology and weak

infrastructure exacerbate sector's initiatives for production and productivity of different crops.

After critical analysis of the sectoral growth of the state economy, it has been observed that the growth of the agriculture and allied sector in the state was not encouraging during the last three consecutive Five Year Plan (8th to 10th five year plan) periods. In this context, the scheme Rashtriya Krishi Vikas Yojana (RKVY) implemented by the government of India (GOI) on May 29, 2007 with the apprehension of slow growth of agriculture and its allied sector in the country seems to be the magnificent program for the state to develop agriculture & allied activities. The scheme aims at achieving 4 percent annual growth in agriculture and its allies sector during 11th Five Year Plan (2007-12). For further development of agriculture, GOI has spent huge fund under the RKVY scheme.

7.3.2. Rationale of the Scheme's Evaluation in Bihar

Having understood the initiatives made by the government, it is imperative to analyze the impact of the scheme (RKVY) on overall development of agriculture sector in the state in the 11th FYP (post RKVY period). As of the parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY schemes covers not only field crops but many other agricultural related sectors like, infrastructure, irrigation, marketing, extension services, trainings, etc. mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agricultural sector involves multifaceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult; some approximations have to be made while evaluating the performance of RKVY scheme. In this study, impact evaluation of RKVY will be carried out with the following broad parameters:

1. The impact evaluation of RKVY would be for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance of the state will be made between pre and post –RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment needs to be made through increase in area, production and productivity of crops as well as change in physical infrastructure of the sectors in the state.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as the main parameter of performance evaluation of the scheme, and output and outcome of the scheme were also evaluated.

7.3.3. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across the sectors. In fact, these are the projects which have contributed significantly for achieving targeted agricultural growth rate in the State. Table 7.3.1 presents the allocation and expenditure distribution across the sectors during 11th FYP under RKVY. The expenditure incurred under different sectors indicates the priority given by the state to these sectors for achieving the expected agricultural growth in the state. The sectors in the table are arranged in descending order based on expenditure to know the order of priority. It is evident from the Table 7.3.1 that the state has given higher preference in terms of expenditure to 8 major sectors such as crop development, agriculture mechanization, organic farming/bio fertilizer, seed, horticulture, innovative programmes/training/capacity building/others, animal husbandry and extension which accounted for 83.65 per cent of the total expenditure and remaining 11 minor sectors utilized 16.35 per cent of the total expenditure in the State (Figure 7.3).

Further, the expenditure to allocation ratio indicates the divergence of the state priorities in terms of expenditure incurred compared to the allocation made. Higher the ratio indicates closeness of expenditure and allocation, and signifies correct allocation of funds to expenditure. It is evident from the Table 7.3.1 that four sectors namely marketing and PHM, Nonfarm activities, fertilizers & INM, and Micro/Minor irrigation belonging to the minor sectors in terms of expenditure have made the expenditure equals to the allocation (with a ratio 1). Even, Agriculture mechanization, Organic farming/bio fertilizer, Fisheries, Crop development, and Information technology had the ratio of 0.8 to 0.9 indicating that there is no much deviation in terms of allocation made and expenditure incurred. But there is much divergence seen in the case of sectors like Research (Agri/Horti/Animal husbandry), NRM, and Cooperatives and Cooperation wherein the ratio is less than 0.5 suggesting that perhaps the allocation requested for those sectors was incorrect. However, horticulture, innovative programs, animal husbandry sectors seems to be balanced in terms of allocation and expenditure because the ratio was hovering around 0.5 to 0.6.

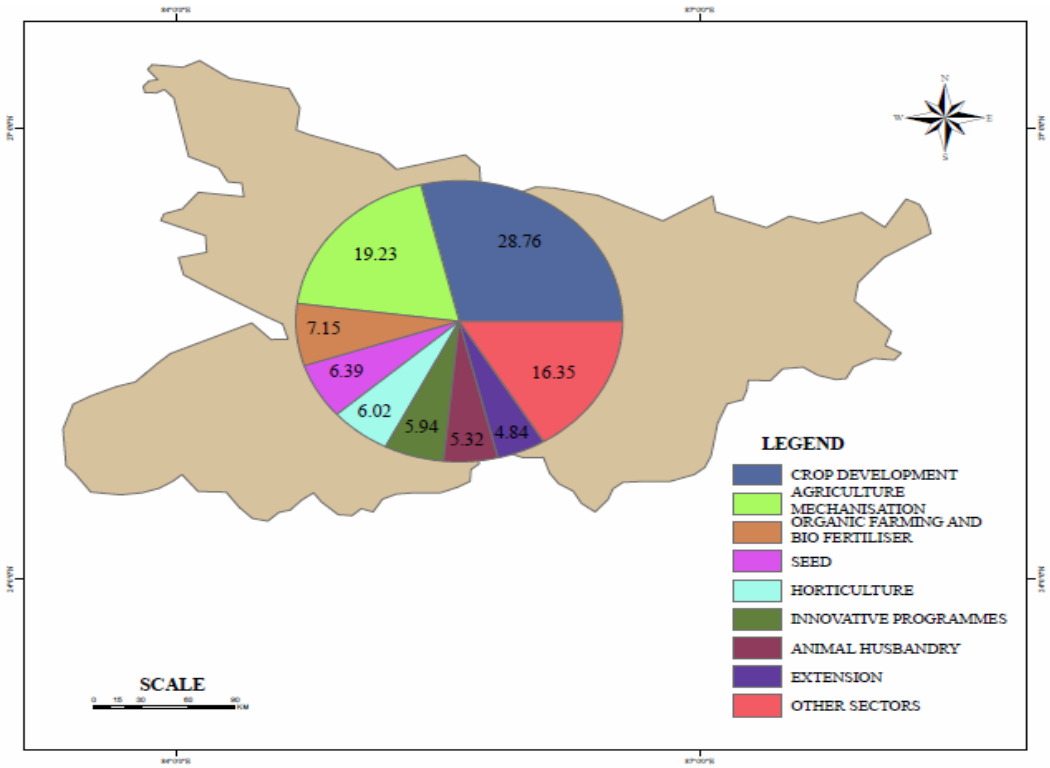

Figure 7.3: Share of Expenditure across Sectors

Note: Other Sectors include Dairy Development, Fisheries, Cooperatives and Cooperation, Marketing & Post Harvest management (PHM), Integrated Pest Management (IPM), Nonfarm activities, Information Technology (IT), Research (Agri/Horti/Animal Husbandry/etc), Fertilizers and Integrated Nutrient Management (INM), Natural Resources management (NRM), and Micro/Minor Irrigation

In general it is possible to acknowledge that the funds provided by RKVY to the state have been broadly spent as allocated to the various state projects. In terms of the 8 major sectors, Seed, Horticulture, Innovative programs, Animal husbandry and Extension were perhaps of a lesser priority and the other 5 major sectors due to those sectors having lower allocation to expenditure ratios. That being said considering how high all the major sectors are in terms of allocation to expenditure ratios; it is hard to conclusively say that some of these sectors did not have the correct amount of funds properly allocated to them.

The ratio of expenditure to allocation point out whether there was any diversion taking place in the priorities set initially as well to see the absorption capacity of funds in relation to allocation. It is revealed from the table that overall expenditure-allocation ratio was 0.7 in Bihar meaning that out of the total allocated amount under RKVY; only 70 per cent was actually spent. The ratio was closer to 1 in sectors; Agriculture mechanization, Organic farming/bio fertilizer, Fisheries, Crop development, and Information technology. The total allocation was completely spent in Marketing and PHM, Nonfarm activities, fertilizers & INM, and Micro/Minor irrigation sectors. On the other hand, less than half of the total

allocated amount was spent in Research (Agri/Horti/Animal husbandry), NRM, and Cooperatives and Cooperation.

In addition, expenditure per project was the highest in organic farming with Rs. 21.3 crores and the lowest was the Research (Agri/Horti/Animal husbandry etc) with Rs. 0.3 crores. Interestingly, expenditure per project of a few minor sectors (integrated pest management, non farm activities, marketing and post harvest management, etc.) were found to be higher when compared with one major sector (extension). The above results are clearly seen in the table 2, which represent distribution of allocation, expenditure and expenditure per project across sectors.

The state has spent funds from RKVY to various sectors and projects in each sector to develop agricultural production, to improve productivity, and to support the farmers in their activities. For example, heavily spending on agricultural mechanization sector reduces the labour required per unit of production and in organic farming improves the soil condition or quality of soil, reduces the dependency on chemical fertilizers as it is costlier. The states have started introducing various other sectors into their budgetary expenses after the introduction of RKVY in the country.

7.3.4. Sector-Wise Size of the Projects based on Expenditure

The numbers and magnitude of projects undertaken and expenditure incurred under RKVY during the 11th FYP is presented in Table 7.3.2. The total amount spent under RKVY was classified into four categories/slabs– a) less than 1 crore, b) Above 1 crore to 10 crores c) Above 10 crores to 25 crores, and d) above 25 crores. Out of total expenditure under RKVY in Bihar, 9.53 per cent of the projects incurred 60.2 per cent of the expenditure at the peak spending above Rs. 25 crores on each project. Most of these mega projects were undertaken only in the major sectors except animal husbandry. On the other hand, majority (51.86 per cent) of the projects consumed less than 19 per cent of the total expenditure falls under the category/slab two (above Rs. 1 crore to 10 crores) spent in almost all the sectors. In the first category (above Rs. 0 to 1 crore), about 26 per cent of the projects absorbed only 1 per cent of the total expenditure whereas the third category constituted about 12 per cent of projects and 20 per cent of the total expenditure. The projects under these two categories falls under crop development, seed, horticulture, animal husbandry, extension, fisheries, cooperatives and cooperation, and integrated pest management sectors.

The state has the largest spread of projects (115 projects out of 189) and its expenditure (Rs. 1498 crores out of Rs. 1790 crores) on major sectors which broadly have all been very efficient with expenditure with regards to allocation. Interestingly, all the mega projects

were associated with major sectors and are of long term duration. All other sector spending is typically of shorter durations.

7.3.5. Sector-Wise Distribution according to Status

The sector-wise, status-wise expenditure are presented in Table 7.3.3. Out of the total expenditure incurred, about 85 per cent (Rs. 1515.9 crores) was spent on projects completed or substantially completed projects (175 no.) and the remaining 15 per cent (Rs. 274.8 crores) was spent on projects either approved or projects in progress and ongoing (64 no.). Out of all sectors, crop development sector has highest number of completed and substantially completed projects with an expenditure of Rs.389.19 crores followed by agriculture mechanization and organic farming & bio-fertilizer sector with expenditure of Rs.344.39 and Rs.128.06 crores respectively. Micro & minor irrigation has least number of completed and substantially completed projects with an expenditure of Rs. 1.63 crores followed natural resource management and fertilizers & INM with expenditure of Rs. 2.72, and Rs. 6.44 crores respectively. The state has made expenditure in almost all the projects (93 per cent of the projects) which are completed or in the verge of completion.

Sectors like agriculture mechanization, organic farming & bio-fertilizer, animal husbandry, extension, dairy development, marketing & post harvest management, integrated pest management, nonfarm activities, information technology, research (Agri/Horti/Animal Husbandry/ etc), fertilizers & INM and natural resource management have no expenditure with respect to approved, ongoing and projects in progress while Fertilizers & INM and micro & minor irrigation sectors have spent entire approved fund.

About 32 projects were either abandoned or not yet implemented considering the number projects as per allocations with an allocation cost of Rs. 30.60 crores (1.7 per cent of the expenditure) shown no expenditure in the state belonging to animal husbandry, cooperatives & cooperation, dairy development, extension, fisheries, horticulture, Marketing & post harvest management and Research (Agri/ Horti/ Animal Husbandry /etc.) sectors.

7.3.6. Sector and Sub Sector Wise distribution of Projects by Nature

Table7.3.4 presents sector and sub-sector-wise contribution of expenditure on infrastructure, central, and state flagship programmes in Bihar. Out of the total projects (271 no.), only 11 are infrastructure projects in which 9 already completed or in the verge of completion and one each in the group of not yet implemented and abandoned under RKVY funding. In terms of total expenditure Rs. 1790.7 crores under RKVY scheme in Bihar, about 2.93 per cent (Rs. 50.9 crores) spent on infrastructure projects in agriculture

and allied activities. The cooperatives & cooperation sector accounted for highest share of Rs. 23.50 crores followed by animal husbandry with Rs. 15.1 crores, horticulture with Rs. 11.4 crores, and the innovative programmes/training/capacity building/others become the least sector in terms of amount spent under infrastructure with Rs.1.1 crores.

With regard to state and national flagship projects, it is to be noted that the state flagship projects constituted about 8.9 per cent of the total expenditure and the national flagship projects constituted around 6.8 per cent of the total expenditure in the state. State flagship projects were the special kind of projects wherein the autonomy and flexibility was given to the State government for their implementation. Bihar had 29 State flagship projects covered in 12 sectors and extension was the major sector among State flagship projects with an expenditure of Rs. 49.97 crores followed by organic farming / bio fertilizer with an expenditure of Rs. 36.32 crores. In case of National flagship projects, Bihar has 5 projects in 3 sectors. Out of which, seed sector has accounted the highest expenditure of Rs. 73.98 crores followed by agriculture mechanization with an expenditure of Rs. 37.32 crores from the total expenditure for national flagship projects.

Apart from these projects, there are 8 Sub-scheme projects in East and North East region those are not considered under state or national flagship projects and have their own classification under RKVY. Out of which 8 sub-schemes, each state have one or more these scheme projects of which Bihar has 6 schemes in operation namely, the Vegetable Initiative for Urban Clusters (VIUC), Programme of Integrated Development of 60,000 Pulses Villages in Rainfed Area, Extending Green Revolution to Eastern India, Rainfed Area Development Program (RADP), Accelerated Fodder Development Programme (AFDP) and national Mission for Protein Supplement (NMPS). Within these sub schemes, allocation was made for 11 projects with an amount of Rs. 305.76 crores but the expenditure was incurred only on 9 projects with an amount of Rs. 260.16 crores. The expenditure was not made for one project each in RADP and AEDP projects. These schemes are unique to the region and have significance to the overall public image of the RKVY project as well.

7.3.7. Major Sector-Wise Stated and Actual Goals

An effort was made with this study to capture the impact of RKVY projects in terms of output and outcome. The Appendix Table 7.3 presents the summary of expected and actual output, and expected and actual outcome of the major sectors of RKVY projects in Bihar as provided in the website. Due to the non-availability of the data in the website it was very difficult to analyze the results with the Appendix Table 7.3 and hence the impact in terms of different impact indicators were considered from the secondary information and discussed in the concluding remarks.

7.3.8. An Assessment of Agricultural Performance in the State and Concluding Remarks

In Bihar, RKVY project comprises of 19 sectors which includes 60 sub-sectors. Out of the 19 sectors, 8 major sectors spent 83.65 per cent of the total expenditure incurred. Among these major sectors, animal husbandry utilized the major funds followed by Crop development, Agriculture mechanization, Organic farming / bio fertilizer. These sectors might have played a significant role in the development of agriculture and allied activities in the state. In terms of number of projects and magnitude of projects under RKVY in Bihar, 9.53 per cent of the projects incurred 60.2 per cent of the total expenditure at the peak spending above Rs. 25 crores on each project. Out of the total expenditure of Rs. 1790.7 crores about 2.93 per cent (Rs. 51.0 crores) spent on infrastructure projects, state flagship projects constitute 8.62 per cent and national flagship comprised of 6.58 per cent. The majority of the projects (85 per cent of the total expenditure and 93 per cent of the projects) were either completed or substantially completed. The major focus in this study is given to the expenditure because impact can be depicted clearly on which expenditures are made. The State managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. Though there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects in terms of divergence and benefits can be explicitly known.

RKVY has really helped the state when the state was facing a severe flood (2007 and 2008) and drought (2009 and 2010) and hindering the state in maintaining higher agriculture growth in the previous years. This may be reason the state able to produce the record food grain production (125 lakh tonnes) and milk production (63 lakh tonnes) in 2010. It is also evident from the priorities of the state in RKVY fund allocation and expenditure. Crop Development was given highest priority in the state followed by agriculture mechanization and organic farming during this period.

An attempt was made to analyze the performance of agriculture in the state before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme although it is difficult to partial out or deduce good or bad performance to RKVY factor alone as the agricultural sector involves multifaceted interventions, related with many other non-RKVY schemes directly or indirectly. Table 7.3.5 shows that although both revenue and capital expenditure have increased in the 11th FYP compared to 10th FYP and state outlay budget has increased by 97.7 per cent in the 11th FYP over 10th plan, however, percentage of agriculture share in the state budget declined from 14.8 per cent in the 10th plan to 12.9 per cent in the 11th plan. Out of the total expenditure in agriculture in the state, RKVY shared 8.9 per cent of the total expenditure. Although agriculture share in the state budget declined in the 11th plan but agriculture expenditure as

a share of state Gross State Domestic Product (GSDP) increased from 6 per cent in 10th Plan to 9.2 per cent in the 11th Plan. This also suggests the GSDP from other sectors have increased faster than the GSDP from agriculture in the state during the same period. If we look into the state budgetary composition on agriculture and allied sectors in Bihar, the highest per cent change over the previous Plan happened in crop development (444.2 per cent) followed by other agricultural programmes (402.4 per cent), fisheries (249.1 per cent), flood control & drainage (223.6 per cent) and dairy development (215.3 per cent) (Table 7.3.6). This change in priorities of the composition is mainly because of the severe flood (2007 and 2008) and drought (2009 and 2010) happened in the 11th Plan period. The RKVY funds were helped the state much in recovering from these serious issues and hence the state could able to recover and shown a record food grain & milk growth during the same period.

The GSDP at factor cost (2004-05) by industry origin shows that the relative share of agriculture and allied activities to the total GSDP (Table 7.3.7) declined from 32.2 per cent in 1999-00 to 21.3 per cent in 2012-13, whereas industry share has increased from 14.8 per cent in 1999-00 to 21.5 per cent in 2012-13 followed by services sector share of 53.1 per cent in to 57.2 per cent. The growth in overall GSDP has increased from 6.9 per cent to 9.9 percent but the GSDP growth in agriculture has come down from average of 7.7 per cent in 10th Plan to average of 3.8 per cent in 11th Plan. There was a reduction in Net Sown Area, and Gross Cropped Area. However, there is a little increase in cropping intensity, irrigation intensity in the state during 11th Plan compared to 10th Plan (Table 7.3.8 & 7.3.9). The increase in land productivity may be due to inflation factor (Table 7.3.8). The average fertilizer consumption has increased from 107.1kg/ha of GCA in the 10th Plan to 170.9kg/ha of GCA in the 11th FYP (Table 7.3.9). In case of growth rate in area, yield and production of major crops in the state shows a mixed bundle where there a considerable increase in the production and productivity of crops especially in the case of rice, wheat, bajra, barley, sugar cane and few pulses and at the same time reduction of growth in area, production and productivity was found in other pulse, total fibres, jowar and ragi (Table 7.3.10). The average annual growth in production and productivity of livestock products and fisheries in the Bihar presented in Table 7.3.11 depicts that there was a drastic decrease in milk and egg production when compared to 10th Plan over 11th Plan and good growth in meat and fish.

7.3.9. Has RKVY Addressed the Challenges Facing Agriculture in Bihar?

Of course, RKVY during the 11th Plan has made an impact in terms of growth of agriculture and allied activities in the state when the state has really in need of such programmes. The state agricultural priorities were met from the RKVY funds especially in the areas of crop development, agricultural mechanization, organic farming/bio-fertilizer,

seed and horticulture. Infrastructure projects were taken up mainly in the co-operatives and cooperation sector by construction of godowns and creating other facilities followed by animal husbandry and horticulture sectors. The small and marginal farmers' requirements were met through hybrid seed distribution and by providing machines and equipment assistance. Organic farming was promoted for improving the soil quality, distributed soil health cards and encouraged farmers for undertaking soil testing to reduce the reliance on chemical fertilizers that cost more and adopt sustainable agriculture practices in the state. Stress was given on innovative programs/training/capacity building activities to upgrade farmers' knowledge. Under Natural Resources Management (NRM) sector, state tried to build water conservation structures and watershed development programs thereby improving ground water level.

TABLES

Table 7.3.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th Five Year Plan

Sectors	No. of projects *	Allocation^ (Rs. Crore)	Expenditure^ (Rs. Crore)	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
Crop Development	19 (27)	631.7 (23.9)	514.9 (28.8)	0.8	19.1
Agriculture Mechanization	5 (8)	388.6 (14.7)	344.4 (19.3)	0.9	43
Organic Farming / Bio Fertilizer	6 (6)	141.1 (5.4)	128.1 (7.2)	0.9	21.3
Seed	8 (8)	188.9 (7.2)	114.4 (6.4)	0.6	14.3
Horticulture	8 (10)	218.6 (8.3)	107.8 (6.1)	0.5	10.8
Innovative programmes/ training/ capacity building/ others	9 (10)	180.7 (6.9)	106.4 (6)	0.6	10.6
Animal Husbandry	48 (68)	187.9 (7.1)	95.3 (5.4)	0.5	1.4
Extension	12 (19)	139.3 (5.3)	86.6 (4.9)	0.6	4.6
Dairy Development	30 (38)	116.9 (4.5)	71.1 (4)	0.6	1.9
Fisheries	20 (25)	70.8 (2.7)	60.5 (3.4)	0.9	2.4
Cooperatives and Cooperation	5 (10)	145.9 (5.6)	42.7 (2.4)	0.3	4.3
Marketing & PHM	3 (6)	34.8 (1.4)	33.1 (1.9)	1	5.5
Integrated Pest Management	3 (3)	46.6 (1.8)	29.2 (1.7)	0.6	9.7
Non Farm Activities	3 (3)	28.8 (1.1)	27.8 (1.6)	1	9.3
IT	1 (3)	13.1 (0.5)	10 (0.6)	0.8	3.3
Research (Agri/Horti/Animal Husbandry/ etc.)	5 (22)	102.3 (3.9)	7.6 (0.5)	0.1	0.3
Fertilizers & INM	2 (2)	6.4 (0.3)	6.4 (0.4)	1	3.2
NRM	1 (2)	6.9] (0.3)	2.7 (0.2)	0.4	1.4
Micro/Minor Irrigation	1 (1)	1.6 (0.1)	1.6 (0.1)	1	1.6
Grand Total	**189 (271)**	**2651.2 (100)**	**1790.7 (100)**	**0.7**	**6.6**

Source: www.rkvy.nic.in, April (2013)

Note: * Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY; ^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total. ** the ratio <1 indicates the allocation is not fully utilised, the ratio >1 indicates the expenditure is more than the allocation and the ratio=1 indicates the allocation is exactly equal to the expenditure;

Table 7.3.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	Above 0 to 1 crore		Above 1 crore to 10 crore		Above 10 crore to 25 crore		Above 25 crores		Grand Total*	
	No.	Expd.	No	Expd.	No.	Expd.	No.	Expd.	No.	Expd.
Crop development	10.5	0.2	26.3	5.0	26.3	13.4	36.9	81.5	19(100)	515.0(100)
Agriculture mechanization	0	0	20	0.4	0	0	80	99.6	5(100)	344.4(100)
Organic farming / bio fertilizer	0	0	50	8.42	0	0	50	91.6	6(100)	128.1(100)
Seed	12.5	0.1	37.5	19.8	37.5	35.9	12.5	44.3	8(100)	114.4(100)
Horticulture	12.5	0.9	25	5.1	50	47.02	12.5	47.0	8(100)	107.8(100)
Innovative programmes/ training/ capacity building/ others	0	0	66.7	12.3	22.2	35.8	11.1	52.01	9(100)	106.4(100)
Animal husbandry	45.8	6.4	52.1	81.6	2.09	12.0	0	0	48(100)	95.3(100)
Extension	25	2.7	58.3	21.6	8.3	28.0	8.3	47.8	12(100)	86.6(100)
Dairy development	36.7	5.7	63.3	94.3	0	0	0	0	30(100)	71.0(100)
Fisheries	25	1.4	70	78.2	5	20.4	0	0	20(100)	60.5(100)
Cooperatives and cooperation	20	1.5	40	12.9	40	85.6	0	0	5(100)	42.8(100)
Marketing and PHM	0	0	66.7	36.2	33.3	63.8	0	0	3(100)	33.0(100)
Integrated pest management	33.3	2.3	33.3	12.5	33.3	85.3	0	0	3(100)	29.2(100)
Non farm activities	0	0	66.7	42.5	33.3	57.6	0	0	3(100)	27.8(100)
IT	0	0	0	0	100	100	0	0	1(100)	10(100)
Research (agri/horti/animal husbandry/ etc.)	40	18.8	60	81.2	0	0	0	0	5(100)	7.6(100)
Fertilizers and INM	50	4.5	50	95.5	0	0	0	0	2(100)	6.4(100)
NRM	0	0	100	100	0	0	0	0	1(100)	2.7(100)
Micro/minor irrigation	0	0	100	100	0	0	0	0	1(100)	1.6(100)
Grand Total	**26.5**	**1.02**	**51.9**	**19.0**	**12.2**	**19.8**	**9.5**	**60.2**	**189(100)**	**1790.2(100)**

Source: www.rkvy.nic.in, April (2013)

Note: No.: Number of projects; *indicates the number in absolute figures**;** PHM: Post Harvest Management; IT: Information Technology; INM: Integrated Nutrient Management, NRM: Natural Resource Management;

Table 7.3.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/ Substantially completed		Abandoned/ not yet implemented	
	No. of projects	Expenditure	No. of projects	Expenditure	No. of projects	Expenditure
Crop Development	11	125.8	16	389.2	0	0
Agriculture Mechanization	2	0.0	6	344.4	0	0
Organic Farming / Bio Fertilizer	0	0.0	6	128.1	0	0
Seed	2	14.3	6	100.2	0	0
Horticulture	6	83.2	3	24.6	1	0
Innovative programmes/ training/ capacity building/ others	5	26.2	5	80.2	0	0
Animal Husbandry	3	0.0	48	95.3	17	0
Extension	4	0.0	13	86.6	2	0
Dairy Development	6	0.0	30	71.1	2	0
Fisheries	1	1.2	20	59.3	4	0
Cooperatives And Cooperation	5	24.1	3	18.6	2	0
Marketing & PHM	1	0.0	3	33.1	2	0
Integrated Pest Management	0	0	3	29.2	0	0
Non Farm Activities	0	0	3	27.8	0	0
IT	2	0.0	1	10.0	0	0
Research (agri/horti/animal husbandry/ etc.)	16	0.0	5	7.6	1	0
Fertilizers & INM	0	0	2	6.4	0	0
NRM	0	0	1	2.7	1	0
Micro/Minor Irrigation	0	0	1	1.6	0	0
Grand Total	**64**	**274.8**	**175**	**1515.9**	**32**	**0**

Source: www.rkvy.nic.in, April (2013)

Note: PHM: Post Harvest Management; IT: Information Technology; INM: Integrated Nutrient Management, NRM: Natural Resource Management;

Table 7.3.4: Sector and Sub-Sector Wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project	National flagship project	Total		Grand Total
	Infra structure	Non infra structure	Non infra structure	Non infra structure	Infra structure	Non infra structure	
Crop development	**0.0**	**95.8**	**4.2**	**0.0**	**0(0)**	**100(515)**	**100(515)**
Oilseeds and pulses	0.0	100.0	0.0	0.0	0(0)	100(28.4)	100(28.4)
Others (crop development)	0.0	100.0	0.0	0.0	0(0)	100(180.5)	100(180.5)
Paddy	0.0	100.0	0.0	0.0	0(0)	100(206.5)	100(206.5)
Sugarcane	0.0	0.0	100.0	0.0	0(0)	100(21.9)	100(21.9)
Wheat	0.0	100.0	0.0	0.0	0(0)	100(77.8)	100(77.8)
Agriculture mechanisation	**0.0**	**89.2**	**0.0**	**10.8**	**0(0)**	**100(344.4)**	**100(344.4)**
Machines and equipment assistance	0.0	89.1	0.0	10.9	0(0)	100(343.1)	100(343.1)
Others (agri. Mechanisation)	0.0	100.0	0.0	0.0	0(0)	100(1.4)	100(1.4)
Organic farming / bio fertiliser	**0.0**	**79.2**	**20.8**	**0.0**	**0(0)**	**100(128.1)**	**100(128.1)**
Promotion of bio fertilizer	0.0	100.0	0.0	0.0	0(0)	100(39.5)	100(39.5)
Promotion of organic farming	0.0	69.4	30.6	0.0	0(0)	100(87.1)	100(87.1)
Vermi composting	0.0	100.0	0.0	0.0	0(0)	100(1.6)	100(1.6)
Seed	**0.0**	**35.3**	**0.1**	**64.7**	**0(0)**	**100(114.5)**	**100(114.5)**
Seed distribution	0.0	65.2	0.4	34.4	0(0)	100(24.3)	100(24.3)
Seed farm	0.0	22.5	0.0	77.5	0(0)	100(65.4)	100(65.4)
Seed processing centres and storage	0.0	100.0	0.0	0.0	0(0)	100(9.8)	100(9.8)
Seed production	0.0	0.0	0.0	100.0	0(0)	100(15)	100(15)
Horticulture	**10.5**	**88.3**	**1.2**	**0.0**	**10.5(11.4)**	**89.6(96.6)**	**100(107.9)**
Area expansion	0.0	100.0	0.0	0.0	0(0)	100(4.3)	100(4.3)
Development of horticulture farms/ facilities	0.0	100.0	0.0	0.0	0(0)	100(10.6)	100(10.6)
Fruits	0.0	100.0	0.0	0.0	0(0)	100(1)	100(1)
Nurseries and green houses	100.0	0.0	0.0	0.0	100(11.4)	0(0)	100(11.4)
Others (horticulture)	0.0	97.5	2.5	0.0	0(0)	100(52)	100(52)

Vegetable	0.0	100.0	0.0	0.0	0(0)	100(28.9)	100(28.9)
Innovative programmes/ training/ capacity building/ others	**1.0**	**94.3**	**4.7**	**0.0**	**1.1(1.1)**	**99(105.4)**	**100(106.4)**
Innovative programmes	1.0	94.2	4.8	0.0	1.1(1.1)	99(103.3)	100(104.4)
Others (innovative programmes, training & others)	0.0	100.0	0.0	0.0	0(0)	100(2.1)	100(2.1)
Animal husbandry	**15.8**	**70.3**	**13.9**	**0.0**	**15.9(15.1)**	**84.2(80.2)**	**100(95.3)**
Animal health	25.3	74.7	0.0	0.0	25.3(11.1)	74.8(32.6)	100(43.6)
Breed improvement	0.0	78.7	21.3	0.0	0(0)	100(9.4)	100(9.4)
Extension and training	0.0	60.1	39.9	0.0	0(0)	100(10.2)	100(10.2)
Feed and fodder	0.0	42.1	57.9	0.0	0(0)	100(2.6)	100(2.6)
Infrastructure	11.8	88.2	0.0	0.0	11.8(2.1)	88.3(15.6)	100(17.7)
Others (Animal Husbandry)	0.0	7.6	92.4	0.0	0(0)	100(4)	100(4)
Poultry	25.0	50.0	25.0	0.0	25(2)	75(6)	100(8)
Extension	**0.0**	**42.3**	**57.7**	**0.0**	**0(0)**	**100(86.7)**	**100(86.7)**
Infrastructure	0.0	100.0	0.0	0.0	0(0)	100(5.6)	100(5.6)
KVKs / knowledge centres / dissemination	0.0	61.5	38.5	0.0	0(0)	100(8.9)	100(8.9)
New approaches to extension	0.0	34.2	65.8	0.0	0(0)	100(70.8)	100(70.8)
Training/ study tour	0.0	100.0	0.0	0.0	0(0)	100(1.5)	100(1.5)
Dairy development	**0.0**	**84.7**	**6.2**	**9.1**	**0(0)**	**100(71.1)**	**100(71.1)**
Assistance to dairy unions/ farmers (inc training)	0.0	100.0	0.0	0.0	0(0)	100(8.2)	100(8.2)
Dairy units to farmers	0.0	83.7	0.0	16.3	0(0)	100(40)	100(40)
Milk processing	0.0	100.0	0.0	0.0	0(0)	100(9)	100(9)
Others (dairy development)	0.0	100.0	0.0	0.0	0(0)	100(0.9)	100(0.9)
Promotion of milk collection centres	0.0	66.8	33.2	0.0	0(0)	100(13.3)	100(13.3)
Fisheries	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(60.6)**	**100(60.6)**
Farmers fish ponds/ assistance including training	0.0	100.0	0.0	0.0	0(0)	100(23.1)	100(23.1)
Infrastructure/ ponds of fisheries/ dept/ agency	0.0	100.0	0.0	0.0	0(0)	100(21.9)	100(21.9)
Others (Fisheries)	0.0	100.0	0.0	0.0	0(0)	100(15.7)	100(15.7)
Cooperatives and cooperation	**54.9**	**35.7**	**9.4**	**0.0**	**55(23.5)**	**45.1(19.3)**	**100(42.7)**
Construction of godowns	0.0	78.5	21.5	0.0	0(0)	100(18.6)	100(18.6)
Other facilities	97.3	2.7	0.0	0.0	97.4(23.5)	2.7(0.7)	100(24.1)
Marketing and post harvest management	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(33.1)**	**100(33.1)**
Godowns and warehouses	0.0	100.0	0.0	0.0	0(0)	100(12)	100(12)
Setting up/ strengthening of market infrastructure	0.0	100.0	0.0	0.0	0(0)	100(21.2)	100(21.2)

Integrated pest management	**0.0**	**12.5**	**87.5**	**0.0**	**0(0)**	**100(29.2)**	**100(29.2)**
Farmers field schools	0.0	0.0	100.0	0.0	0(0)	100(24.9)	100(24.9)
IPM labs	0.0	0.0	100.0	0.0	0(0)	100(0.7)	100(0.7)
Promotion of IPM	0.0	100.0	0.0	0.0	0(0)	100(3.7)	100(3.7)
Non farm activities	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(27.8)**	**100(27.8)**
Post harvest processing facilities	0.0	100.0	0.0	0.0	0(0)	100(27.8)	100(27.8)
Information technology	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(10)**	**100(10)**
Development of it facilities	0.0	100.0	0.0	0.0	0(0)	100(10)	100(10)
Research (Agri/Horti/Animal Husbandry etc.)	**0.0**	**90.3**	**9.7**	**0.0**	**0(0)**	**100(7.7)**	**100(7.7)**
Agri facility	0.0	0.0	100.0	0.0	0(0)	100(0.8)	100(0.8)
Agri research project	0.0	100.0	0.0	0.0	0(0)	100(6.9)	100(6.9)
Fertilisers and INM	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(6.5)**	**100(6.5)**
Fertiliser labs	0.0	100.0	0.0	0.0	0(0)	100(6.2)	100(6.2)
Soil health cards and soil testing	0.0	100.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Natural resource management	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(2.8)**	**100(2.8)**
Water conservation structures and watershed dev	0.0	100.0	0.0	0.0	0(0)	100(2.8)	100(2.8)
Micro/minor irrigation	**0.0**	**0.0**	**100.0**	**0.0**	**0(0)**	**100(1.7)**	**100(1.7)**
Sprinkler and drip irrigation	0.0	0.0	100.0	0.0	0(0)	100(1.7)	100(1.7)
Grand total	**2.8**	**82.0**	**8.6**	**6.6**	**2.9(51)**	**97.2(1739.8)**	**100(1790.7)**

Source: www.rkvy.nic.in, April (2013)

Note: Figures in the parentheses are the respective absolute values; PHM: Post Harvest Management; IT: Information Technology; INM: Integrated Nutrient Management, NRM: Natural Resource Management;

Table 7.3.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 Prices)

(Rs. in crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. expenditure to State budget	% agri. expenditure to agri GSDP	Percentage of RKVY expenditure to agri. expenditure
2002-03	823	701	1524	9013	16.9	5.9	
2003-04*	729	745	1475	8890	16.6	6.8	
2004-05	870	453	1323	7968	16.6	5.4	
2005-06	844	647	1490	10617	14.0	6.4	
2006-07	913	575	1488	15206	9.8	5.3	
10th Plan average	**4179**	**3121**	**7300**	**51693**	**14.8**	**6.0**	
2007-08	1089	763	1852	16921	10.9	7.0	
2008-09	1485	309	1794	18184	9.9	6.1	
2009-10	1670	939	2609	19012	13.7	10.1	**8.9**
2010-11	2140	890	3030	20397	14.9	10.1	
2011-12*	2471	1645	4116	27660	14.9	12.4	
11th Plan average	**8855**	**4545**	**13400**	**102174**	**12.9**	**9.2**	
% change over 10th plan	**111.9**	**45.6**	**83.6**	**97.7**			

Source: State Finances, RBI;

Note: * indicates Revised estimates, rest all accounts; Agriculture and allied activities includes Irrigation and flood control; budgetary expenditure is accounts only developmental expenditure; Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100; 10th and 11th plan average value indicates average of the five years;

Table 7.3.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. in crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	913.9 (12.3)	4972.9 (24.8)	444.2
2	Soil and Water Conservation	53.8 (0.8)	85.8 (0.5)	59.6
3	Animal Husbandry	324.7 (4.4)	894.4 (4.5)	175.5
4	Dairy Development	85.8 (1.2)	270.5 (1.4)	215.3
5	Fisheries	50.4 (0.7)	175.9 (0.9)	249.1
6	Forestry and Wild Life	240.2 (3.3)	469.2 (2.4)	95.4
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	0 (0)	192.5 (1)	0.0
9	Agricultural Research and Education	269.8 (3.7)	667.5 (3.4)	147.4
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	304.9 (4.1)	522.7 (2.7)	71.4
12	Other Agricultural Programmes	9.8 (0.2)	48.9 (0.3)	402.4
13	Major and Medium Irrigation	858.4 (11.5)	2161.6 (10.8)	151.8
14	Minor Irrigation	864.2 (11.6)	1798.6 (9)	108.1
15	Flood Control and Drainage	268.2 (3.6)	867.9 (4.4)	223.6
16	Others	3237.1 (43.3)	6964.1 (34.7)	115.1
Total		**7480.8 (100)**	**20091.9 (100)**	**168.6**

Source: State Finances, RBI

***Note:** The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total;

Table 7.3.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 Prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	32.2	14.8	53.1
2000-01	37.3	12.5	49.8
2001-02	31.7	12.9	55.3
2002-03	35.3	12.5	51.9
2003-04	31.2	12.8	55.9
2004-05	31.5	13.8	54.7
2005-06	29.7	15.1	55.2
2006-07	31.4	15.1	53.5
2007-08	27.8	17.1	55.1
2008-09	27.3	17.7	55.0
2009-10	22.8	19.0	58.2
2010-11	23.0	21.2	55.7
2011-12	23.0	21.0	56.0
2012-13	21.3	21.5	57.2

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05)

Table 7.3.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	24.6	11.8	57	80	139.0	45077
2003-04	-16.3	-5.1	57	79	138.0	37831
2004-05	13.5	12.2	56	74	132.8	44023
2005-06	-5.6	0.2	56	74	133.1	41674
2006-07	22.2	15.6	57	77	136.3	49947
10th Plan Average	**7.7**	**6.9**	**56**	**77**	**135.8**	**43710**
2007-08	-6.3	5.7	57	78	137.1	46829
2008-09	10.2	12.2	56	77	138.1	52608
2009-10	-11.7	6.0	53	75	140.5	48381
2010-11	16.3	15.0	53	72	136.8	57055
2011-12	10.4	10.7	53	72	136.8	63012
11th Plan Average	**3.8**	**9.9**	**54**	**75**	**137.9**	**53577**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05); land productivity = agricultural GSDP/ha of NSA;
10th and 11th plan average value indicates average of the five years;

Table 7.3.9: Trend in Inputs Use in Bihar

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area*	Irrigation intensity (%)	%gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	34.6	45.7	60.5	132.1	57.5	87.3
2003-04	34.3	45.7	60.1	133.0	57.9	88.0
2004-05	30.3	42.0	54.5	138.3	56.7	99.8
2005-06	31.6	43.3	56.9	136.8	58.5	125.3
2006-07	34.6	46.5	61.1	134.2	60.2	134.9
10th Plan Average	**33.1**	**44.6**	**58.6**	**134.9**	**58.2**	**107.1**
2007-08	35.3	47.3	62.3	133.9	60.8	152.4
2008-09	35.4	46.9	63.7	132.7	61.2	171.6
2009-10	33.9	44.3	63.7	130.6	59.2	165.6
2010-11	30.3	44.5	57.6	146.8	61.8	180.6
2011-12	30.3	44.5	57.6	146.8	61.8	184.2
11th Plan Average	**33.0**	**45.5**	**61.0**	**138.2**	**61.0**	**170.9**

Source: Directorate of Economics and Statistics, GOI (2012-13);

Note:* indicates the Net irrigated area /Net sown area*100; ^ indicates Gross irrigated area /Gross sown area*100; 10th and 11th plan average value indicates average of the five years;

Table 7.3.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	-0.9	6.9	6.0	0.3	19.3	15.4
Wheat	-0.7	-1.6	-1.1	0.9	4.3	3.2
Jowar	15.6	20.0	4.4	-2.7	-1.6	0.7
Bajra	62.7	71.5	8.1	21.8	22.4	0.9
Maize	1.6	3.6	2.3	1.0	-0.4	-1.5
Ragi	-5.4	-4.5	1.3	-11.2	-3.4	10.9
Small Millets	16.1	12.9	0.6	6.7	7.5	0.5
Barley	-2.2	-5.0	-2.8	-3.2	10.9	8.3
Coarse Cereals	1.3	3.4	2.4	0.5	-0.5	-1.0
Total Cereals	-0.7	1.4	1.5	0.4	7.7	6.4
Gram	-3.1	-5.6	-2.7	1.9	12.5	9.9
Arhar/Tur	-2.5	-5.3	-2.4	-9.0	-0.2	9.6
Other Pulses	-2.4	-3.6	-1.2	-19.0	-15.3	-16.3
Total Pulses	-2.6	-4.1	-1.5	-2.6	3.5	6.3
Total Food grains	-0.9	1.1	1.4	0.1	7.3	6.6
Sesamum	1.8	5.7	3.4	-3.7	-0.6	3.2
Rapeseed & Mustard	-1.3	3.8	5.1	0.8	0.9	0.1
Linseed	-3.2	0.1	3.6	-3.9	-3.5	0.4
Sunflower	18.8	18.2	-0.4	-6.2	-4.8	1.6
Total Oilseeds	0.1	4.8	4.7	-1.3	-1.0	0.3
Jute	-2.1	5.4	7.6	0.4	4.5	-16.5
Mesta	-0.4	9.0	10.8	160.0	222.9	-17.5
Total Fibres	-2.3	5.2	7.8	-19.3	-20.8	-21.3
Sugarcane	3.4	4.1	0.2	18.5	27.4	3.8

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.3.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	7.7	11.5	-0.6	8.6
2003-04	10.8	0.0	0.4	2.1
2004-05	49.2	0.0	6.6	0.4
2005-06	6.7	0.6	26.8	4.5
2006-07	7.7	1.1	-5.6	-4.5
10th plan	**16.4**	**2.6**	**5.5**	**2.2**
2007-08	6.1	14.0	13.3	19.5
2008-09	2.6	3.0	0.3	-5.8
2009-10	3.2	4.3	2.4	-1.1
2010-11	6.4	2.3	-32.3	0.8
2011-12	NA	NA	NA	14.9
11th plan*	**4.6**	**5.9**	**-4.1**	**5.7**

Source: BAHS, www.Indiastat.com; **Note:** NA: Data not available;

7.4 JHARKHAND

7.4.1. Background Information

Jharkhand is located in the eastern[10] part of India bordering the states of Bihar, West Bengal, Orissa and Chattisgarh. The state covers a geographical area of 79,714 sq. km., which is 2.42 per cent of countries total geographical area which makes it 15th largest state of the country. As per 2011 census document, the state has population of 32,966,238 no. of persons, making it the 13th most populous state of the country.

Agriculture is the primary income generating activity and provides employment to the masses in the State wherein 80 per cent of the population directly depends on agriculture for their livelihood. The agricultural sector of the state is characterized by dependency on nature, low investment and low productivity, inadequate irrigation facilities, small and marginal holdings and mono cropping with paddy as the dominant crop. The dependency of agriculture on rainfall can be the cause from the fact that only 12.77 percent of the net sown area is irrigated. Hence, total net sown area is only 28 per cent of geographical area of the State due to hilly terrain. The state is mostly affected by drought like situation in the year 2010 as monsoon was poor in that year. As a result, agriculture growth was poor in the same year.

There are some opportunities that can be improve the growth of agriculture sector of the State, where the state receive 1300 mm average annual rainfall gives an opportunity for better water use through water conservation techniques along with the soil type and weather condition apt for horticulture, floriculture etc. State has a good scope for food processing industries[11]. These indicators can play a very important role for enhancement of the agriculture & allied sector of the state.

According to the sectoral growth of the State economy, it is observed that the growth rate of agriculture and allied sector was not encouraging during the last three consecutive Five Year Plan (8th to 10th Five-Year Plan) periods. With an apprehension of slow growth of agriculture and allied sector in the country, the Rashtriya Krishi Vikas Yojana **(**RKVY) was implemented by the Government of India on May 29, 2007, including Jharkhand. The scheme aims at achieving 4 per cent annual growth in agriculture and allied sector during 11th Five Year plan (2007-12). For further development of agriculture sector, the Government of India has spent huge fund under the RKVY scheme.

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[10] Eastern Region of India consist 4 states-Bihar, Jharkhand, Orissa & West Bengal
[11] State 12th 5 year plan (2012-2017)

7.4.2. Rationale of the Scheme's Evaluation in Jharkhand

Having understood the initiatives taken by the government, it is imperative to analyse the impact of the scheme (RKVY) on the growth and development of agriculture sector in the State in 11th FYP (post-RKVY period). As of the parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY scheme covers not only field crops of agriculture sector but also many other public goods and services like, infrastructure, irrigation, marketing, extension services, trainings, etc., mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agriculture sector which RKVY sponsors involves multi-faceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult; some approximations have to be made while evaluating the performance of RKVY scheme. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance of entire State will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment needs to be made through increase in area, production and productivity of crops as well as change in physical infrastructures of the sector in the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as one of the major parameters of performance evaluation of the scheme, and output and outcome of the scheme were also evaluated.

7.4.3. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors. In fact, these are the projects which have contributed significantly for achieving targeted agricultural growth rate in the State. Table 7.4.1 represents the allocation and expenditure distribution across the sectors during 11th FYP under RKVY. The expenditure incurred under different sectors indicates the priority given by the state to these sectors for achieving the expected agriculture growth in the State. The sectors in the table arranged in descending order based on expenditure to know the order of priority. There were 19 broader sectors of agriculture covered under RKVY scheme in Jharkhand. It is evident from the Table 7.4.1 that the state has given higher preferences in terms of expenditure to 5 major sectors[12]. These sectors utilize 80.57 per cent of the total

[12] The 5 Sectors Crop Development, Micro/Minor Irrigation, Extension, Dairy Development and Seed

expenditure of the RKVY scheme and remaining 14 minor sectors utilized only 19.43 per cent of the total expenditure in the State (Figure 7.4).

Further, the expenditure-allocation ratio indicates the divergence of the state priorities in terms of expenditure incurred compared to the allocation made. Higher the ratio indicates closeness of expenditure and allocation signifies correct allocation of funds to expenditure. It is evident from the Table 7.4.1 that only one sector namely extension have made the expenditure equals to the allocation (with a ratio 1). Even the sector like research had the ratio of 0.8, indicating that there is not much deviation in terms of allocation made and expenditure incurred. But much divergence observed in case of sectors like dairy development, organic farming, animal husbandry, Natural Resources management (NRM), seed, horticulture, cooperatives and cooperation, marketing and Post Harvest Management (PHM), agriculture mechanisation, and fertilizer and Integrated Nutrient Management (INM), with the ratio less than 0.5 suggesting that perhaps the allocation made for these sectors were not benefited. Again, Innovative programmes, IPM, Nonfarm activities and sericulture have the ratio of '0' indicating that the allocation requested for these sectors was totally useless. However, Micro/minor irrigation balanced in terms of expenditure incurred and allocation made with the ratio of 0.6.

The expenditure allocation ratio pointed out whether there was any divergence in the priorities set by RKVY initially to achieve the goal. It is observed from the table that the overall expenditure allocation ratio was 0.4 in Jharkhand which indicates that out of the total allocated fund by RKVY to the State only 40 per cent of the fund was spent. It clearly states that the State was not able to utilize the allocated funds effectively and efficiently.

Within the selected sectors, expenditure per project incurred by micro/minor irrigation was found to be at thehighest with Rs. 18.2 crores and lowest expenditure per project in research sector with Rs. 0.9 crores in the State during 11th FYP. In addition, expenditure per project of a few minor sectors (NRM, cooperatives and cooperation, marketing and PHM) was found to be higher compared with few major sectors (dairy development, seed and extension). As shown in Table 2, RKVY sanctioned Rs 1595.2 crores to develop 225 projects during 11th FYP. Out of the total sanctioned amount, Rs 573.4 crore has been spent (35.9 per cent), and out of the total 225 projects sanctioned under RKVY, only 110 projects have been initiated during the period and Rs 5.2 crore was spent per project. The column 6 of Table 7.4.1 (expenditure share) clearly reflected the explained segment.

7.4.4. Sector-Wise Size of the Projects based on Expenditure

An effort was also made to classify the projects based on numbers, magnitude and expenditure incurred under RKVY during 11th FYP and the same results are presented in Table7.4.2. The total amount spent under RKVY were classified into four categories/slabs- a) less than Rs. 0 to 1 crore, b) Above Rs. 1 crore to 10 crores, c) Above Rs. 10 to 25 crores and d) Above Rs. 25 crores. Out of the total expenditure under RKVY in Jharkhand, 34.6 per cent falls under the category/slab one with less share of total scheme's expenditure (2.9 per cent) which includes projects under almost all sectors. Most of the projects (51.8 per cent of the total) come under the second slab (Rs. 1 to 10 crore) with 32.7 per cent of the scheme's expenditure. Very limited projects fall under the third and fourth category/slab (Above Rs. 10 crores to 25 crores and above Rs. 25 crores) with the respective contribution of 20.7 per cent and 43.7 per cent of the total RKVY funds spent. Most of the projects under third and fourth slabs are of long duration projects compared to other two categories.

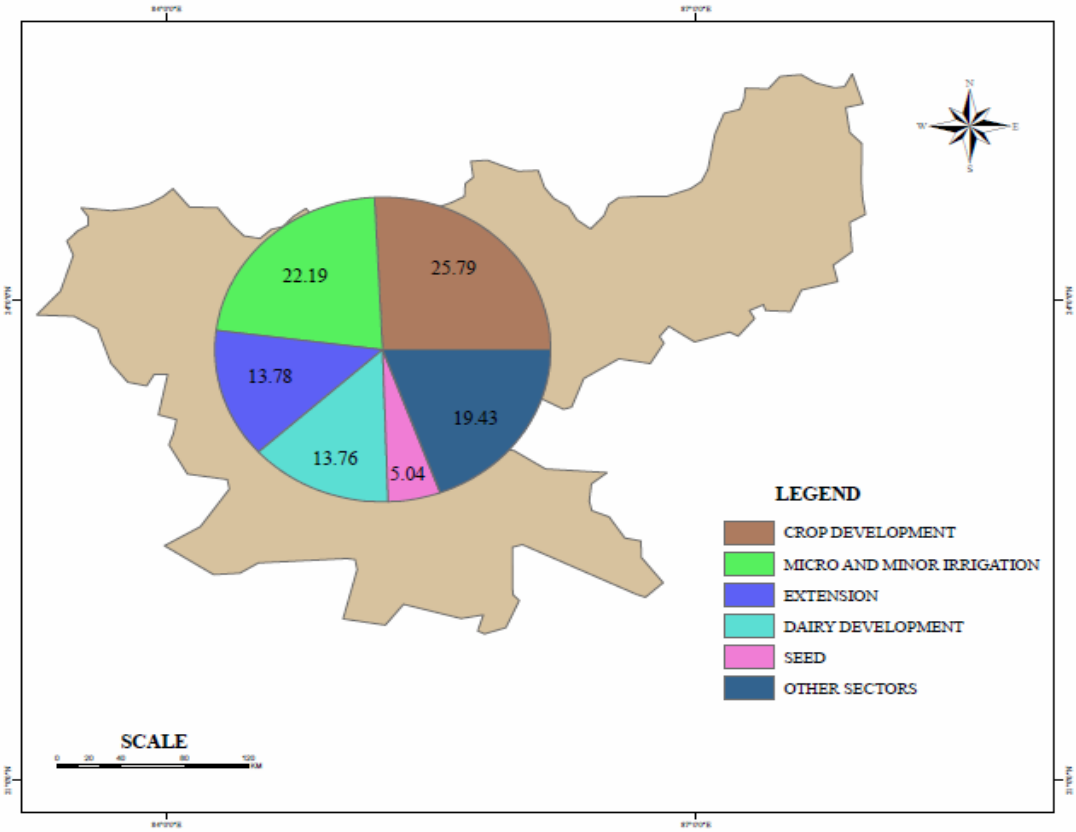

Figure 7.4: Share of Expenditure across Sectors

In terms of number of projects, highest number of projects comes under first two slabs (less than 1 to 1 crore and Above 1 crore to 10 crores) but the larger share of expenditure on projects fall under last two slabs (Above 10 to 25 crores and Above 25 crores).

Although, major sectors like crop development, micro/minor irrigation and extension has major projects which come under slabs above Rs. 25 crores.

7.4.5. Sector-Wise Expenditure according to Status

The sector-wise and status-wise expenditure is presented in Table 7.4.3. The Table revealed that out of 225 sanctioned projects, 82 projects have been completed or substantially completed, 84 projects found to be continued (in progress) and 59 projects were abandoned or not yet initiated during the 11th Plan. Largest number of projects (15 projects) under the animal husbandry sector were found to be completed or in the verge of completion followed by fisheries sector with 14 projects, 11 projects under crop development, 10 projects under dairy development and 8 projects under horticulture sector. Under the status of 'project in progress', 14 projects found under horticulture followed 8 projects each in extension, fisheries, animal husbandry and agriculture mechanisation sectors. Out of the 59 projects abandoned/ not yet initiated projects, 11 projects found under horticulture alone followed by crop development (7 projects), innovative programmes and marketing & PHM (6 projects each), seed (5 projects) and extension, fisheries, and fertilizer and INM (3 projects each). Even though, highest allocation was made for micro/minor irrigation, extension, diary development and seed sectors but are left with the highest remaining amount to be spent on ongoing projects.

7.4.6. Sector and Sub Sector Wise distribution of Projects by Nature

Jharkhand is identified one of the backward state in terms of drought control, dependency on nature, low investment and productivity, inadequate irrigation facilities. Most of the farmers are small and marginal in the state. Mono cropping with paddy is the dominant crop of the state. Therefore, more emphasis should be given in this regard.

The State has tried to utilize the RKVY funds in very effective manner by allocating to different kinds of projects in the State. From the Table 7.4.4, it is observed that the nature of the projects coded with normal projects and state flagship projects, which are all, fall under non-infrastructure category. Out of the total expenditure, 94.3 per cent of the total expenditure was spent on normal projects while 5.7 per cent spent on state flagship projects. The state flagship projects found to be dominant by the seed and fisheries sectors. There were no infrastructure and national flagship projects in the state during the 11th FYP under RKVY. Except innovative programmes, IPM, Nonfarm activities and sericulture sectors, normal projects were found in almost all other sectors in the state.

7.4.7. Major Sector-Wise Stated and Actual Goals

RKVY aims at achieving the targeted annual growth of 4 per cent in the agriculture sector by ensuring a holistic development of agriculture and allied sectors.The projects under RKVY comprise of various components involving almost all the stakeholders in the agriculture and allied sectors. Therefore, it is very difficult to analyze the output and outcome of RKVY through any one of the model becuase the development and growth in agricultural production and productivity has always been a synergistic and cumulative effect of various ongoing schemes / projects and efforts put forth by all the stake holders involved.

An effort was made with this study to capture the impact of RKVY projects in terms of output and outcome. The Appendix Table 7.4 presents the summary of expected and actual output, and expected and actual outcome of the major sectors of RKVY projects in Jharkhand as provided in the website. Due to the non-availability of the data in the website it was very difficult to analyze the results with the Appendix Table 7.4 and hence the impact in terms of different impact indicators were considered from the secondary information and discussed in the concluding remarks.

7.4.8. An Assessment of RVKY Performance in the State and Concluding Remarks

In Jharkhand, RKVY project comprises of 19 sectors which includes 51 sub sectors. A total numbers of 225 projects have been approved at the time of RKVY scheme inception in the state. Out of the 225 projects, state made expenditure for 110 projects during 11th FYP; other 115 projects were at the verge of completion within the plan period. Of the 19 sectors, 5 sectors absorbed 80.7 per cent of the total expenditure of the scheme. Among the major sectors, crop development utilized the major funds (25.8 per cent) and it was followed by micro/minor irrigation (22.2 per cent), extension (13.8 per cent), dairy development (13.8 per cent) and seed (5.1 per cent).

The major focus of the RKVY scheme evaluation was given to the magnitude of expenditure made on the sectors through which the impact can be accessed directly or indirectly. The status wise expenditure on the sectors shows that most of the sectors (projects) in the stage of completion or at the verge of completion and the remaining projects might have spilled over to the 12th FYP. In case of some sectors like dairy development and seed had huge allocation but expenditure incurred was very less. As per the classification of the projects, most of the projects (51.8 Per cent of the total) come under the second slab (1 to 10 crores) with an expenditure of 32.7 per cent of the scheme. Projects fall under third and fourth expenditure category/slab were limited. The various projects under RKVY were distributed into normal and state flagship projects but there

were no projects under infrastructure even though it was a prominent component of RKVY scheme.

In the state the major focus of the scheme evaluation was given to the magnitude of expenditure of the sectors as impact can be depicted directly or indirectly on which expenditures are made. In the State 5.7 per cent of the total RKVY expenditure spent on the State flagship projects covered especially under animal husbandry sector. The State managed to utilize these funds effectively compared to other projects, probably due to autonomy and flexibility given to the State under RKVY. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the targeted goals have been met.

An attempt was made to analyze the performance of agriculture in the state before and after the initiation of RKVY programme to have some indication in the state although it is difficult to partial out or deduce good or bad performance to RKVY factor alone as the agriculture sector involves multifaceted interventions, related with many other non-RKVY schemes directly or indirectly. Table 7.4.5 shows that although revenue and capital expenditure both have increased in the 11th Plan compared to 10th Plan and state total budget outlay increased by 49.8 per cent in the 11th Plan over 10th Plan, however, percentage of agriculture share in the state budget declined from 13.4 percent in the 10th Plan to 11.9 per cent during the 11th Plan. Out of total expenditure in agriculture in the state, RKVY share was 5.6 per cent in the state. Although, agriculture share in state total budget declined in the 11th Plan similar trend was observed in case of agriculture expenditure of state GSDP, it was decreased from 11.8 per cent in the 10th Plan to 11.3 per cent in the 11th Plan. This also suggests that GSDP from other sectors have increased faster than the GSDP from agriculture in the state from 10th to 11th Plan. Looking at state budgetary expenditure on agriculture and allied sector (Table 7.4.6), the highest percentage change over the previous Plan happened in crop husbandry, major and medium irrigation, dairy development, fisheries, animal husbandry, minor irrigation and agricultural research and education, some of these also received prime priority under RKVY.

Without forgetting the RKVY's aim to achieve the target of 4 per cent growth rate in agriculture sector in 11th FYP, the scheme has made its maximum effort and worked in a synergetic manner with other agencies. Overall GSDP has increased from 5 per cent in 10th FYP to 10.4 per cent in 11th FYP and the agriculture GSDP growth is also very significant, rose from 2.7 per cent in 10th FYP to 4.9 per cent in 11th FYP (Table 7.4.8). There was no significant decline in the net sown area, gross cropped area as well cropping intensity during the above mentioned period (Table 7.4.8). However, land

productivity per hectare in value terms increased from Rs. 58 thousand in the 10th Plan to approximately Rs. 97 thousand in the 11th Plan, a part of that may be due to inflation factor. Although a lot of work on irrigation projects was taken up, especially in the micro irrigation, the net and gross irrigated area remained almost at the level where it was in the previous Plan period. There was marginal increase in irrigation intensity from 133.5 during the 10th Plan to 135.5 at the end of 11th Plan (Table 7.4.9). The growth rate in area, yield and production was also a mixed bundle where average annual growth in production of rice, wheat and ragi increased but declined in average annual growth area of maize, ragi and coarse cereals (Table 7.4.10). In terms of growth of livestock and fish production, the annual average growth of fish production has reached to 26.5 per cent (ref Table 7.4.11). Further a brief output and outcome under different crop categories of the scheme during the 11th FYP is presented below (Appendix Table 7.4).

To conclude, the information displayed on the RKVY website proclaims having achieved most of the output and outcome stated for the RKVY programme. However, on the cross checking, the performance of agriculture in the state does not portray a very remarkable picture, as in most of the indicators, the performance of agriculture has remained only moderate. As a pre-condition, one should know that the impact of RKVY might not be felt immediately, but the expenditure pattern and the performance of the scheme can be seen in the long run.

TABLES

Table 7.4.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th FYP

(Rs. in Crore)

Sl. No.	Sectors	No. of projects*	Allocation^	Expenditure ^	Expenditure allocation ratio**	Expenditure per Project
	1	2	3	4	5=3/2	6=4/2
1	Crop Development	11 (23)	79 (5)	147.9 (25.8)	0.5	13.4
2	Micro/Minor Irrigation	7 (8)	208.3 (13.1)	127.2 (22.2)	0.6	18.2
3	Extension	16 (16)	79 (5)	79 (13.8)	1.0	4.9
4	Dairy Development	13 (16)	211.1 (13.3)	78.9 (13.8)	0.4	6.1
5	Seed	5 (14)	124.6 (7.9)	28.9 (5.1)	0.2	5.8
6	Fisheries	16 (25)	49.6 (3.2)	26.1 (4.6)	0.5	1.6
7	Animal Husbandry	15 (25)	77.7 (4.9)	25 (4.4)	0.3	1.7
8	Horticulture	10 (33)	81.1 (5.1)	17.2 (3.1)	0.2	1.7
9	Agriculture Mechanization	8 (15)	194.6 (12.2)	13.7 (2.4)	0.1	1.7
10	NRM	1 (4)	37.3 (2.4)	9.7 (1.7)	0.3	9.7
11	Cooperatives And Cooperation	1 (1)	31.2 (2)	6.5 (1.2)	0.2	6.5
12	Marketing & PHM	1 (7)	30.1 (1.9)	5.5 (1)	0.2	5.5
13	Fertilizers & INM	3 (8)	26.1 (1.7)	3.6 (0.7)	0.1	1.2
14	Organic Farming / Bio Fertilizer	0 (7)	8.7 (0.6)	3.3 (0.6)	0.4	0.0
15	Research	1 (4)	1.2 (0.1)	0.9 (0.2)	0.8	0.9
16	Innovative Programmes	0 (12)	98.2 (6.2)	0 (0)	0.0	0.0
17	Integrated Pest Management	0 (4)	7.4 (0.5)	0 (0)	0.0	0.0
18	Non Farm Activities	0 (1)	0.6 (0.1)	0 (0)	0.0	0.0
19	Sericulture	0 (2)	1.9 (0.2)	0 (0)	0.0	0.0
Grand Total		**110 (225)**	**1595.2 (100)**	**573.4 (100)**	**0.4**	**5.2**

Source: www.rkvy.nic.in, April, (2013);

Note: * Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY; ^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total. PHM: Post Harvest Management; INM: Integrated Nutrient Management; NRM: Natural Resource Management; ** the ratio <1 indicates the allocation is not fully utilised, the ratio >1 indicates the expenditure is more than the allocation and the ratio=1 indicates the allocation is exactly equal to the expenditure;

Table 7.4.2: Sector Classification of Projects According to their Expenditure

(Per cent)

Sectors	Above 0 to 1 crore		Above 1 crore to 10 crore		Above 10 crore to 25 crore		Above 25 crores		Grand Total*	
	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.
Crop development	18.2	0.3	45.5	13.4	9.1	8.8	27.3	77.5	11(100)	147.9(100)
Micro/minor irrigation	0.0	0.0	42.9	7.9	14.3	14.0	42.9	78.1	7(100)	127.2(100)
Extension	37.5	3.3	50.0	35.4	6.3	15.0	6.3	46.3	16(100)	79(100)
Dairy development	15.4	2.0	61.5	36.9	23.1	61.1	0.0	0.0	13(100)	78.9(100)
Seed	20.0	0.5	60.0	45.2	20.0	54.3	0.0	0.0	5(100)	28.9(100)
Fisheries	62.5	12.0	31.3	40.6	6.3	47.5	0.0	0.0	16(100)	26(100)
Animal husbandry	20.0	5.0	80.0	95.1	0.0	0.0	0.0	0.0	15(100)	25(100)
Horticulture	60.0	15.1	40.0	85.0	0.0	0.0	0.0	0.0	10(100)	17.2(100)
Agriculture mechanisation	50.0	15.1	50.0	84.9	0.0	0.0	0.0	0.0	8(100)	13.7(100)
Natural resource management	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	9.7(100)
Cooperatives and cooperation	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	6.5(100)
Marketing and PHM	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	5.5(100)
Fertilisers and INM	66.7	37.1	33.3	62.9	0.0	0.0	0.0	0.0	3(100)	3.6(100)
Organic farming / bio fertiliser	50.0	9.5	50.0	90.6	0.0	0.0	0.0	0.0	2(100)	3.3(100)
Research (agri/horti/animal husbandry etc.)	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1(100)	0.9(100)
Grand Total	**34.6**	**2.9**	**51.8**	**32.7**	**7.3**	**20.7**	**6.4**	**43.7**	**110(100)**	**573.4(100)**

Source: Same as table 1;

Note: Exp: Expenditure; *indicates the number in absolute figures

Table 7.4.3: Sector-Wise Classification of Projects by their Status under RKVY during 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/ Substantially completed		Abandoned/ not yet implemented	
	Number	Expenditure	Number	Expenditure	Number	Expenditure
Crop Development	5	0.0	11	147.9	7	0.0
Micro/Minor Irrigation	4	42.3	3	84.9	1	0.0
Extension	8	28.2	5	49.6	3	1.3
Dairy Development	6	25.7	10	53.2	0	0.0
Seed	6	23.9	3	5.0	5	0.0
Fisheries	8	12.4	14	13.7	3	0.0
Animal Husbandry	8	0.0	15	25.0	2	0.0
Horticulture	14	2.3	8	14.9	11	0.0
Agriculture Mechanization	8	7.2	5	6.5	2	0.0
NRM	2	0.0	1	9.7	1	0.0
Cooperatives And Cooperation	0	0.0	1	6.5	0	0.0
Marketing & PHM	0	0.0	1	5.5	6	0.0
Fertilizers & INM	2	0.0	3	3.6	3	0.0
Organic Farming / Bio Fertilizer	4	3.0	1	0.3	2	0.0
Research	1	0.0	1	0.9	2	0.0
Innovative Programmes	6	0.0	0	0.0	6	0.0
Integrated Pest Management	2	0.0	0	0.0	2	0.0
Non Farm Activities	0	0.0	0	0.0	1	0.0
Sericulture	0	0.0	0	0.0	2	0.0
Grand Total	**84**	**145.0**	**82**	**427.1**	**59**	**1.3**

Source: Same as Table 1;

Table 7.4.4: Sector and Sub Sector wise Classification by Nature of Project under RKVY during 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project	State Flagship project	Grand Total
Crop development	**100.0**	**0.0**	**100(147.9)**
Coarse cereals	100.0	0.0	100(1.5)
Oilseeds and pulses	100.0	0.0	100(8.1)
Others (crop development)	100.0	0.0	100(34.6)
Paddy	100.0	0.0	100(103.7)
Wheat	100.0	0.0	100(0.3)
Micro/minor irrigation	**100.0**	**0.0**	**100(127.3)**
Check dams/ water courses bunds	100.0	0.0	100(10.1)
Percolation tanks/ minor irrigation tanks	100.0	0.0	100(117.2)
Extension	**100.0**	**0.0**	**100(79.1)**
Infrastructure	100.0	0.0	100(42.5)
Kvks / knowledge centers / dissemination	100.0	0.0	100(14.4)
New approaches to extension	100.0	0.0	100(0.5)
Training/ study tour	100.0	0.0	100(21.8)
Dairy development	**100.0**	**0.0**	**100(78.9)**
Assistance to dairy unions/ farmers (inc training)	100.0	0.0	100(5.1)
Dairy units to farmers	100.0	0.0	100(13.7)
Milk processing	100.0	0.0	100(8.8)
Others (dairy development)	100.0	0.0	100(51.6)
Seed	**45.7**	**54.3**	**100(29)**
Seed distribution	100.0	0.0	100(13.1)
Seed farm	0.0	0.0	0(0.0)
Seed production	0.0	100.0	100(15.8)
Seed testing lab	0.0	0.0	0(0.0)
Tissue culture	100.0	0.0	100(0.2)
Fisheries	**52.5**	**47.5**	**100(26.1)**
Farmers fish ponds/ assistance including training	100.0	0.0	100(1.6)
Fish marketing	0.0	0.0	0(0.0)
Infrastructure/ ponds of fisheries/ dept/ agency	100.0	0.0	100(12.2)
Others (fisheries)	0.0	100.0	100(12.4)
Animal husbandry	**81.6**	**18.4**	**100(25.1)**
Animal health	100.0	0.0	100(1.1)
Breed improvement	100.0	0.0	100(3.7)
Extension and training	0.0	0.0	0(0.0)
Feed and fodder	0.0	100.0	100(2.3)
Infrastructure	93.8	6.2	100(3.9)
Others (animal husbandry)	68.9	31.1	100(6.9)
Poultry	100.0	0.0	100(7.5)
Horticulture	**100.0**	**0.0**	**100(17.3)**
Area expansion	100.0	0.0	100(2.9)
Development of horticulture farms/ facilities	100.0	0.0	100(0.4)
Floriculture	0.0	0.0	0(0.0)

Fruits	0.0	0.0	0(0.0)
Nurseries and green houses	100.0	0.0	100(0.9)
Others (horticulture)	100.0	0.0	100(0.7)
Vegetable	100.0	0.0	100(12.7)
Agriculture mechanization	**100.0**	**0.0**	**100(13.7)**
Custom hiring centers	100.0	0.0	100(0.3)
Machines and equipment assistance	100.0	0.0	100(4.4)
Others (agri. Mechanization)	100.0	0.0	100(9.1)
Natural resource management	**100.0**	**0.0**	**100(9.7)**
Soil treatment (acidic alkali, water logged)	0.0	0.0	#DIV/0!
Water conservation structures and watershed dev	100.0	0.0	100(9.7)
Cooperatives and cooperation	**100.0**	**0.0**	**100(6.5)**
Construction of godowns	100.0	0.0	100(6.5)
Marketing and post harvest management	**100.0**	**0.0**	**100(5.5)**
Godowns and warehouses	100.0	0.0	100(5.5)
Others (marketing & PHM)	0.0	0.0	0(0.0)
Setting up/ strengthening of market infrastructure	0.0	0.0	0(0.0)
Fertilizers and INM	**100.0**	**0.0**	**100(3.6)**
Soil health cards and soil testing	100.0	0.0	100(0.8)
Soil testing lab	100.0	0.0	100(2.8)
Organic farming / bio fertilizer	**100.0**	**0.0**	**100(3.4)**
Promotion of bio fertilizer	100.0	0.0	100(0.4)
Promotion of organic farming	0.0	0.0	0(0.0)
Vermi composting	100.0	0.0	100(3.1)
Research	**100.0**	**0.0**	**100(1)**
Agri research project	0.0	0.0	0(0.0)
Agri research/ teaching facility (infrastructure)	100.0	0.0	100(1)
Innovative programmes	**0.0**	**0.0**	**0(0.0)**
Innovative programmes	0.0	0.0	0(0.0)
Others (innovative programmes, training & others)	0.0	0.0	0(0.0)
Integrated pest management	**0.0**	**0.0**	**0(0.0)**
IPM labs	0.0	0.0	0(0.0)
Pest surveillance	0.0	0.0	0(0.0)
Promotion of IPM	0.0	0.0	0(0.0)
Non farm activities	**0.0**	**0.0**	**0(0.0)**
Others (NFA)	0.0	0.0	0(0.0)
Sericulture	**0.0**	**0.0**	**0(0.0)**
Cocoon production	0.0	0.0	0(0.0)
Others (sericulture)	0.0	0.0	0(0.0)
Grand total	**94.3**	**5.7**	**100(573.4)**

Source: Same as Table 1;
Note: NFA: Non farm activities; Figures in the parentheses are the respective absolute values;

Table 7.4.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. Crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	%of RKVY expenditure to agri. expenditure
2002-03	649	379	1028	6973	14.7	13.3	
2003-04*	546	340	886	6102	14.5	11.1	
2004-05	579	438	1017	7429	13.7	11.4	
2005-06	617	436	1053	8223	12.8	11.4	
2006-07	760	449	1209	10802	11.2	11.6	
10th Plan	**3150**	**2042**	**5192**	**39530**	**13.4**	**11.8**	
2007-08	867	427	1294	10057	12.9	11.8	
2008-09	1121	472	1593	10835	14.7	12.4	
2009-10	843	318	1161	10993	10.6	9.7	**5.6**
2010-11	840	357	1197	12628	9.5	9.5	
2011-12*	1153	574	1727	14697	11.7	13.3	
11th Plan	**4824**	**2148**	**6973**	**59210**	**11.9**	**11.3**	
% change over 10th plan	**53.1**	**5.2**	**34.3**	**49.8**			

Source: State Finances, RBI

Note: * indicates Revised estimates, rest all accounts; Agriculture and allied activities includes Irrigation and flood control; 10th and 11th plan average value indicates sum of the five years;

Budgetary expenditure is accounts only developmental expenditure; Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100;

Table 7.4.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	504.7 (9.6)	4316.7 (19)	755.3
2	Soil and Water Conservation	101.3 (2)	348.3 (1.6)	244.0
3	Animal Husbandry	244.7 (4.7)	1381.4 (6.1)	464.6
4	Dairy Development	103.4 (2)	785.1 (3.5)	659.2
5	Fisheries	69.5 (1.4)	430.9 (1.9)	520.2
6	Forestry and Wild Life	1124.5 (21.3)	3306.8 (14.6)	194.1
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	0 (0)	0 (0)	0.0
9	Agricultural Research and Education	158.9 (3.1)	721.2 (3.2)	353.9
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	430.6 (8.2)	1551.9 (6.9)	260.4
12	Other Agricultural Programmes	4.4 (0.1)	49.2 (0.3)	1020.7
13	Major and Medium Irrigation	343.7 (6.6)	2649.1 (11.7)	670.7
14	Minor Irrigation	151.2 (2.9)	778.1 (3.5)	414.7
15	Flood Control and Drainage	0 (0)	56 (0.3)	0.0
16	Others	2045.7 (38.8)	6382.8 (28.1)	212.0
Total		**5282.2 (100)**	**22757 (100)**	**5770.0**

Source: State Finances, RBI;

***Note:** The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others;

Figures in the parenthesis are percentage to the respective total;

Table 7.4.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	15.4	56.7	29.3
2000-01	16.0	48.3	34.7
2001-02	20.1	43.7	34.1
2002-03	16.1	51.4	32.3
2003-04	15.4	52.2	32.4
2004-05	14.9	52.1	32.9
2005-06	16.0	47.2	36.8
2006-07	17.6	43.3	39.1
2007-08	15.4	48.2	36.4
2008-09	18.3	41.4	40.3
2009-10	15.6	40.1	44.3
2010-11	14.0	42.0	44.0
2011-12	13.6	42.9	43.5
2012-13	13.3	41.7	45.0

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.4.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-17.6	2.5	16	20	121.7	47128
2003-04	3.2	8.0	16	18	111.8	51072
2004-05	11.6	15.2	15	16	110.9	60411
2005-06	3.6	-3.2	14	15	110.1	65732
2006-07	12.6	2.4	15	16	109.6	69182
10th Plan Average	**2.7**	**5.0**	**15**	**17**	**112.8**	**58705**
2007-08	5.6	20.5	15	17	109.0	71539
2008-09	16.6	-1.7	15	17	112.3	85168
2009-10	-6.2	10.1	13	14	111.9	96106
2010-11	4.5	15.9	11	12	115.1	115665
2011-12	3.8	7.2	11	12	115.1	120112
11th Plan Average	**4.9**	**10.4**	**13**	**15**	**112.7**	**97718**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05); land productivity = agricultural GSDP/ha of NSA;
10th and 11th plan average value indicates average of the five years;

Table 7.4.9: Trend in Inputs Use in Jharkhand

Year	Net irrigated area (lakh ha)	Gross irrigated area (lakh ha)	% net irrigated to net sown area*	Irrigation intensity (%)	% gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	1.5	1.8	9.2	119.1	9.1	-
2003-04	1.5	1.8	9.5	120.8	10.3	54.5
2004-05	1.1	1.6	7.4	149.5	10.0	62.1
2005-06	1.1	1.5	7.5	136.8	9.4	67.6
2006-07	1.0	1.4	6.8	141.2	8.7	52.5
10th Plan Average	**1.2**	**1.6**	**8.1**	**133.5**	**9.5**	**59.2**
2007-08	1.2	1.6	7.6	134.2	9.4	60.6
2008-09	1.1	1.6	7.3	149.1	9.7	61.6
2009-10	1.0	1.6	8.2	152.0	11.1	70.0
2010-11	1.3	1.5	11.5	120.0	12.0	90.2
2011-12	1.3	1.5	11.5	120.0	12.0	122.5
11th Plan Average	**1.2**	**1.6**	**9.2**	**135.0**	**10.8**	**81.0**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note:* indicates the Net irrigated area /Net sown area*100; ^ indicates Gross irrigated area /Gross sown area*100; 10th and 11th plan average value indicates average of the five years;

Table 7.4.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	1.8	19.8	15.4	7.8	22.8	5.0
Wheat	7.3	9.7	2.1	15.8	22.7	4.9
Maize	13.1	8.5	-3.2	-0.6	5.7	5.1
Ragi	-6.9	-4.0	5.0	-3.2	3.0	3.6
Coarse Cereals	7.7	6.4	0.2	-4.0	2.9	6.5
Total Cereals	2.6	16.8	11.4	4.4	17.3	5.4
Arhar/Tur	53.3	70.8	2.9	10.4	17.1	10.6
Other Pulses	50.0	42.3	1.2	2.8	9.5	4.9
Total Pulses	55.9	57.1	1.1	5.8	12.4	5.4
Total Food grains	5.4	17.0	8.7	3.3	14.9	5.2
Sesamum	-2.9	-9.1	-6.1	-4.1	0.5	8.0
Linseed	46.2	35.4	-2.9	-1.1	5.5	6.9
Niger seed	-9.6	-24.5	-14.6	73.4	78.8	26.6
Sunflower	18.0	20.3	2.0	-19.0	-16.1	8.9
Total Oilseeds	64.5	85.0	-2.0	14.5	26.5	10.5
Sugarcane	1.1	-0.4	-1.3	12.1	33.7	25.6

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.4.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.3	NA	7.6	-55.1
2003-04	0.2	0.0	-2.6	66.1
2004-05	39.4	4.9	8.3	-70.8
2005-06	0.4	0.0	-0.1	55.8
2006-07	4.9	2.3	2.0	0.0
10th plan average	**9.2**	**1.8**	**3.0**	**-0.8**
2007-08	2.9	6.8	0.3	98.1
2008-09	1.7	0.0	-44.0	11.7
2009-10	-0.2	0.0	-1.8	-7.0
2010-11	6.3	-6.4	5.8	2.0
2011-12	NA	NA	NA	27.5
11th plan average	**2.7**	**0.1**	**-9.9**	**26.5**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years; NA: data not available;

7.5 MANIPUR

7.5.1. Background Information

Manipur is one of the North Eastern-most States of India, sandwiched between Myanmar (Burma) on the east and three Indian States Nagaland in the north, Assam in the west and Mizoram on the south. The State consists of 9 districts, covers an area of 22, 327 sq. km. (reduced from 30, 027 sq. km.) with population of 27, 21,756, and it can be divided into two regions– valley (4 districts) and hill (5 districts). The former occupies one-tenth (1/10th) of the State's geographical area and is inhabited by Meitei community which consists of around 65 per cent of State's population. Conversely, the latter region covers nine-tenth (9/10th) of the total area and inhabited by different tribes, estimated around 35 per cent of the State's population. The small valley area (1/10th of the total area) is ringed by the hill districts (9/10th of the State's area)[13].

Agriculture is the backbone of the State's economy. At present, around 76 per cent of the State's population engaged directly or indirectly in agriculture. The total area available for cultivation is hardly 9.41Per cent of the State's total geographical area, accounted for 3,35,220 ha of Gross Cropped Area (GCA). This area, available for cultivation is concentrated mainly in the small portion of the valley region (1/10th of the State's geographical area). The Net Sown Area (NSA) is around 2, 34,000 ha and the cropping intensity is 143.26 Per cent in 2011-12. Paddy is the main crop in this State and other crops like, pulses, wheat, turmeric, oil seeds, fruits like papaya, orange, banana and vegetables like the tomato, pumpkin, cauliflower, peas, cabbage, etc. are commonly grown in the State.

As of the strength of primary sector, the State has large share of hilly areas and produces variety of fruits and horticultural crops. The State also has rich potential for minor forest products. Also, the State is known for the Loktak, the largest freshwater lake in northeast India. It is also called the only floating lake in the world due to its floating phumdis (heterogeneous mass of vegetation, soil, and organic matters at various stages of decomposition) on it. It has direct catchment area of 980 sq. km. and indirect catchment of 7157 sq. km. Out of the direct catchment area of 980 sq. km of the Loktak Lake, 430 sq. km. is under paddy cultivation. Integrated paddy-fish farming system can be found in this area. Altogether, the State has the potential of producing 56,500 ton of fish per annum, covering an area of 1 lakh hectare.

[13]This section is excerpted from Singha, Komol (2013). Conflict and Education in Manipur: A Comparative Analysis. Working Paper No. 305, Bangalore: Institute for Social and Economic Change.

On the dark sides of the agriculture and its allied sector, Manipur has small area around 9.4Per cent of the total geographical area is available for agriculture purposes. Hardly 21 to 22 per cent of the NSA was found to have irrigated in the last two decades. Due to poor road connectivity between the State and rest of the country during the rainy season, farmers often faced shortage of fertilizer during the agricultural season. Despite the State receives good agro-climatic condition, soil quality and produces sizeable quantity of paddy; wheat; maize; pulses; oilseeds (like mustard, groundnut, soyabeans, sunflower, etc.); fruits and vegetables (like, cauliflower, cabbage, tomato, pea, etc.), marketing infrastructure is very poor. Proper cold storage is lacking and post-harvest management mechanism is very poor in the State, and this discourages farmers and cultivators in the State.

Table 8 depicts agriculture sector in the recent past. The growth of agriculture Gross State Domestic Product (GSDP) was 4.2Per cent in 10th Five Year Plan (FYP) and rose to 8.5Per cent during 11th FYP in Manipur. Also, the contribution of agriculture to GSDP was 22.8 Per cent in 1999-00 and rose to 26 Per cent in 2012-13 (Table 7.5.7). This implies that the role of agriculture in the State economy is still significant, and overall GSDP has increased from 5.7 Per cent in 10th FYP to 6.2 Per cent in 11th FYP. Similarly, land productivity was found to have increased marginally from 53 thousand in 10th plan to 60 thousand in 11th plan. The Net Sown Area (NSA) and Grossed Cropped Area (GCA) have also increased during the 11th FYP compared to 10th FYP (Table 7.5.8).

In the national level, the agriculture sector faced a very fluctuating trend starting from 8th Five Year Plan to 10th Five Year Plan. Growth of the sector declined significantly during these periods. With the apprehension of further slowing down of growth of agriculture and its allied sector, the Rashtriya Krishi Vikas Yojana (RKVY) was implemented in the country (all the States and union territories) by the government of India on 29th May 2007, with an objective of achieving 4 per cent annual growth in the agriculture sector during 11th plan (2007-12). The situation was more or less same in Manipur as well. Though the growth of agriculture sector was above the national level, it has been very fluctuating trend throughout the period in the State.

Based on the information available on the official website of RKVY and Directorate of Economics and Statistics, government of Manipur and India, an effort has been made to evaluate the outcome and output of RKVY scheme in Manipur during 11th FYP. Also, a comparison was made between 10th FYP and 11th FYP, in terms of output and outcome of agriculture sector in the State. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be made for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance of the State will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08. It includes State budgetary change in agriculture after RKVY.
3. Impact assessment has been made through the growth of area, production and productivity of crops as well as the physical changes made in agriculture related infrastructure sectors during the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as a main parameter of performance evaluation of the scheme.

7.5.2. Distribution of Allocation and Expenditure across Sectors:

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors in the State. Table 7.5.1 and Figure 7.5 present the expenditure across the sectors. In 11th FYP, altogether Rs 96.6 crores have been allocated for 12 sectors that consist of 82 projects (sub-sectors) in Manipur under RKVY scheme. Of the 12 sectors, 10 sectors have been initiated during the plan. Further, out of the 82 projects (sub-schemes) allocated under the scheme, only 45 projects have been initiated during the plan period.

Of the sectors initiated by the State under RKVY, 5 major sectors have been identified and almost 87 per cent of the allocated fund has been spent on these 5 sectors, viz. extension, horticulture, crop development, fisheries and animal husbandry. And the remaining 13 per cent of the fund has been spent on the 5 minor sectors in the State. Further, expenditure per project was attracted most by crop development sector with Rs 3.2 crores, followed by fisheries with 2.2 crores. The lowest expenditure per project was incurred by in the organic farming/bio-fertilizer sector with Rs 0.2 crores.

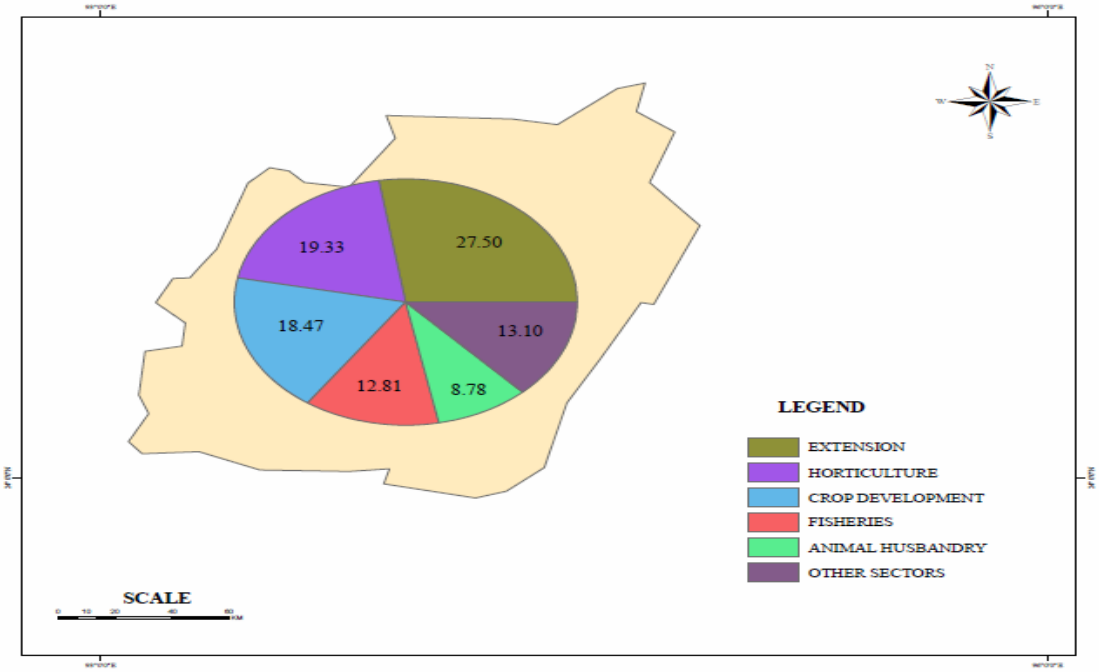

Figure 7.5: Share of Expenditure across Sectors

As the RKVY scheme envisaged for the development of agriculture sector in the country and achieving 4 per cent annual growth of the sector during 11th Five Year Plan (11th FYP), the present study is the modest attempt to evaluate the impact of RKVY scheme in Manipur during 11th FYP. The entire projects of RKVY scheme in Manipur was carried out under two sets of programme normal and State flagship projects. Altogether 93 Per cent of the fund was spent though normal project category, estimated at Rs. 48.6 crore and remaining 7 Per cent was spent under the State flagship projects, estimated at Rs. 3.7 crore.

Fishery sector was covered by State flagship category and 55 Per cent of this sector's expenditure (fishery) was spent under the State flagship project and the remaining 45 Per cent of the expenditure made under fisher sector was spent under the normal project category. Unfortunately, no infrastructure project was found under RKVY scheme in Manipur, albeit the State is known for poor physical infrastructure (Table 7.5.4).

To understand the magnitude of the projects, the whole projects and expenditure made under RKVY scheme has been classified into two broad expenditure slabs– up to 1 crore and above 1 crore or 1-10 crore. Most of the projects were found to be small and fall under the expenditure slab of "up to 1 crore", estimated at 57.8 Per cent of the project. But, hardly 16.2 Per cent of the expenditure was spent in these projects. On the other hand, altogether 83.9 Per cent of the total expenditure was made for 30.2 per cent of the projects that come under the slab of "above 1 crore" (Table 7.5.2).

7.5.3. Impact and Status of the Projects

In term of status, most of the projects under the RKVY scheme in Manipur were not found to have completed or substantially completed during 11th FYP, accounted for 44 numbers and spent Rs. 9 crore. On the other hand, 38 projects were found to have completed or substantially completed during the 11th FYP and spent Rs 43,3 crore. In percentage term, hardly 17.2 per cent of the fund was spent for the 44 numbers of on-going projects and 82.8 per cent of the fund was spent 38 numbers of completed/substantially completed projects. Most of the completed projects were from the extension sector, accounted for 12 numbers. It was followed by animal husbandry and horticulture with 6 numbers and 5 numbers respectively. The same order followed by the ongoing project category as well (Table 7.5.3).

In Table 7.5.5 we can see that the contribution of RKVY share to total state expenditure was 1.6 per cent during the 11th FYP. Change over the State budgetary expenditure on agriculture and its allied activities was almost 100 per cent during the 11th FYP compared to 10th FYP. Also, overall State budget has increased by almost 75 per cent in 11th FYP. Both the share of expenditure to State budget and share of expenditure to agriculture GSDP have also increased significantly. In term of sector-wise change in the State budgetary composition (Table 7.5.6), almost 145 per cent of the State budgetary expenditure has increased for agriculture in Manipur under RKVY scheme during 11th FYP. Of the major sectors, crop husbandry, soil and water conservation and animal husbandry have registered a significant change over the plan.

When we look at the area, production and yield, barring maize and oilseed, major crops have registered high growth rate during the 11th FYP compared to 10th FYP. Of the crops, the yield level of total pulses and sugarcane has increased at the highest. More importantly, the staple food of the State rice was found to have significant growth in area, production and yield (Table 7.5.10). In the case of input used trend, unfortunately, input usage level in the State was found to have declined (Table 7.5.9). For instances, fertilizer consumption level has declined from 95 kg/ha in 10th FYP to 50 kg/ha in 11th FYP, share of Net Irrigated Area to NSA has declined from 22 per cent in 10th FYP to 21 per cent in 11th FYP. Coming to the livestock and fishery production, egg and fish production were found to have increased from 3.2 per cent and 2.5 per cent respectively in 10th FYP to 8.7 per cent and 3.7 per cent respectively in 11th FYP. However, other produces, like milk and meat have declined during the period (Table 7.5.11).

7.5.4. Concluding Remarks

Though the RKVY official website lacks appropriate information of performance indicators of agriculture in Manipur, Reserve Bank of India, Planning Commission and Directorate of Economics and Statistics, Govt. of India/Manipur supplemented rough indicators of agriculture development. The State has achieved more than 8 per cent agriculture growth rate during the 11th FYP. It was the double of 10th FYP. Annual average growth rate of area, production and yield of major agricultural crops in Manipur, mainly cereal, pulses and food-grain have increased significantly in the 11th FYP.

In Manipur, RKVY project comprises of 12 sectors which include 30 sub-sectors (projects). Out of the 12 sectors, 5 sectors absorbed 86.90 per cent of the expenditure. Among the major sectors, extension services spent major share of the RKVY fund. It was followed by horticulture, fisheries, animal husbandry and crop development. Hardly 7 per cent of the scheme's allocated fund for the State was spent on the State flagship projects, i.e. fisheries. Unfortunately, the growth of this sector was falling down during the 11th FYP. Similarly, though the important sectors like, horticulture, crop development and extension services have better improvement in area, production and productivity, more than 50 per cent of the allocated fund for the same could not be utilized during the evaluation period.

In totality, the funds of RKVY meant for the development of agriculture and its allied activities could not be utilised fully during the 11th FYP. Number of divergent outcomes has been found under the scheme and proper information was not made available of the scheme (Appendix Table 7.5). In order to validate the results arrived in this study from the available secondary data of RKVY projects, a rigorous primary survey of the RKVY beneficiaries is very necessary and it will make a clear picture of the performance of the scheme.

TABLES

Table 7.5.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th FYP

(Rs. Crore)

Sectors	No. of project*	Allocation^	Expenditure^	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
Extension	14 (24)	16.5 17.1)	14.4 (27.6)	0.9	1.0
Horticulture	8 (12)	23.8 (24.7)	10.1 (19.4)	0.4	1.3
Crop Development	3 (3)	10.3 (10.7)	9.7 (18.5)	0.9	3.2
Fisheries	3 (5)	16.5 (17.2)	6.7 (12.9)	0.4	2.2
Animal Husbandry	6 (14)	11.9 (12.5)	4.6 (8.8)	0.4	0.8
Agriculture Mechanization	4 (8)	4.6 (4.8)	3.1 (6)	0.7	0.8
Marketing and PHM	3 (4)	4.9 (5.1)	2.5 (4.8)	0.5	0.8
Organic Farming / Bio Fertilizer	2 (4)	3.9 (4.1)	0.5 (1)	0.1	0.2
NRM	1 (3)	1.8 (1.9)	0.5 (1)	0.3	0.5
Non Farm Activities	1 (2)	0.6 (0.7)	0.3 (0.6)	0.5	0.3
Seed	0 (1)	0.6 (0.7)	0 (0)	0.0	0.0
Sericulture	0 (2)	1.2 (1.2)	0 (0)	0.0	0.0
Grand Total	**45 (82)**	**96.6 (100)**	**52.3 (100)**	**0.5**	**1.2**

Source: www.rkvy.nic.in, April (2013);
Note:* Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY;
^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total;
** The ratio <1 indicates the allocation is not fully utilised, the ratio=1 indicates the allocation is exactly equal to the expenditure and the ratio =0 indicates the allocation has not spent yet;
PHM: Post Harvest Management; NRM: Natural Resource Management;

Table 7.5.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	Above 0 to 1 crore		Above 0 to 1 crore		Grand Total*	
	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.
Extension	71.4	22.1	20.0	77.9	14(100)	14.4(100)
Horticulture	37.5	7.3	71.4	92.7	8(100)	10.2(100)
Crop development	0.0	0.0	0.0	100.0	3(100)	9.7(100)
Fisheries	0.0	0.0	150.0	100.0	3(100)	6.7(100)
Animal husbandry	66.7	34.7	16.7	65.4	6(100)	4.6(100)
Agriculture mechanization	75.0	29.0	14.3	71.0	4(100)	3.1(100)
Marketing and PHM	66.7	31.1	33.3	69.0	3(100)	2.5(100)
Organic farming / bio fertilizer	100.0	100.0	0.0	0.0	2(100)	0.5(100)
NRM	100.0	100.0	0.0	0.0	1(100)	0.5(100)
Non farm activities	100.0	100.0	0.0	0.0	1(100)	0.3(100)
Grand Total	**57.8**	**16.2**	**30.2**	**83.9**	**45(100)**	**52.3(100)**

Source: Same as Table 1

Note: *Number in absolute figures; Figures in the parenthesis are percentage of accompanying absolute values;

Table 7.5.3: Status-Wise Classification of Projects by their Status under RKVY during 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed	
	Number	Expenditure	Number	Expenditure
Extension	12	3	12	11.4
Horticulture	7	2.0	5	8.1
Crop Development	0	0	3	9.7
Fisheries	3	3.7	2	3.0
Animal Husbandry	8	0	6	4.6
Agriculture Mechanization	4	0	4	3.1
Marketing & PHM	2	0.3	2	2.2
Organic Farming / Bio Fertilizer	2	0	2	0.5
NRM	2	0	1	0.5
Non Farm Activities	1	0	1	0.3
Seed	1	0	0	0.0
Sericulture	2	0	0	0.0
Grand Total	**44**	**9**	**38**	**43.3**

Source: Same as Table 1

Table 7.5.4: Sector and Sub Sector wise Classification by Nature of Project under RKVy during the 11th Five Year Plan (Non-Infrastructure)

(Per cent)

Sectors and Sub-sectors	Normal project	State Flagship project	Grand Total
Extension	**100.0**	**0.0**	**100(14.4)**
New approaches to extension	100.0	0.0	100(11.7)
Others (extension)	100.0	0.0	100(2.3)
Training/ study tour	100.0	0.0	100(0.5)
Horticulture	**100.0**	**0.0**	**100(10.2)**
Area expansion	100.0	0.0	100(2)
Development of horticulture farms/ facilities	0.0	0.0	0(0.0)
Fruits	100.0	0.0	100(0.5)
Others (horticulture)	100.0	0.0	100(1.3)
Vegetable	100.0	0.0	100(6.5)
Crop development	**100.0**	**0.0**	**100(9.7)**
Oilseeds and pulses	100.0	0.0	100(5)
Others (crop development)	100.0	0.0	100(2)
Paddy	100.0	0.0	100(2.7)
Fisheries	**44.8**	**55.2**	**100(6.7)**
Farmers fish ponds/ assistance including training	100.0	0.0	100(3)
Others (fisheries)	0.0	100.0	100(3.7)
Animal husbandry	**100.0**	**0.0**	**100(4.6)**
Extension and training	100.0	0.0	100(0.6)
Feed and fodder	100.0	0.0	100(1)
Infrastructure	0.0	0.0	0(0.0)
Others (animal husbandry)	100.0	0.0	100(1.1)
Poultry	100.0	0.0	100(2)
Agriculture mechanizations	**100.0**	**0.0**	**100(3.1)**
Machines and equipment assistance	100.0	0.0	100(3.1)
Others (agri. Mechanizations)	0.0	0.0	0(0.0)
Marketing and PHM	**100.0**	**0.0**	**100(2.5)**
Godowns and ware houses	100.0	0.0	100(2.3)
Others (marketing & PHM)	100.0	0.0	100(0.3)
Organic farming / bio fertilizer	**100.0**	**0.0**	**100(0.5)**
Promotion of organic farming	100.0	0.0	100(0.2)
Vermi composting	100.0	0.0	100(0.4)
NRM	**100.0**	**0.0**	**100(0.5)**
Soil treatment (acidic alkali, water logged)	100.0	0.0	100(0.5)
Water conservation structures and watershed dev	0.0	0.0	0(0.0)
Non farm activities	**100.0**	**0.0**	**100(0.3)**
Post harvest processing facilities	100.0	0.0	100(0.3)
Seed	**0.0**	**0.0**	**0(0.0)**
Others (seed)	0.0	0.0	0(0.0)
Sericulture	**0.0**	**0.0**	**0(0.0)**
Cocoon production	0.0	0.0	0(0.0)
Others (sericulture)	0.0	0.0	0(0.0)
Grand total	**92.9**	**7.1**	**100(52.3)**

Source: Same as Table 1

Note: Figures in the parentheses are the respective absolute expenditure values in crore;

Table 7.5.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

(Rs. crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	120	25	145	986	14.7	14.3	
2003-04*	168	67	234	1733	13.5	20.2	
2004-05	141	51	193	1457	13.2	15.2	
2005-06	180	144	323	1636	19.8	25.5	
2006-07	179	238	416	2066	20.2	32.8	
10th Plan average	**787**	**524**	**1312**	**7877**	**16.3**	**21.6**	
2007-08	219	146	364	2057	17.7	26.1	
2008-09	192	288	480	2498	19.2	31.5	
2009-10	265	177	442	2591	17.0	25.5	
2010-11	349	319	668	3082	21.7	38.0	**1.6**
2011-12*	351	311	661	3518	18.8	34.7	
11th Plan average	**1375**	**1241**	**2615**	**13746**	**18.9**	**31.1**	
% change over 10th plan	**74.6**	**136.7**	**99.4**	**74.5**			

Source: State Finances, RBI;

Note:* indicates Revised estimates and Agriculture and allied activities includes Irrigation and flood control; Budgetary expenditure accounts only developmental expenditure;

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100; 10th and 11th plan value indicates average of the five years;

Table 7.5.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. in crore)

Particulars	10th Plan	11th Plan	% change over TFYP
Crop Husbandry	174.6 (13)	431.7 (13.1)	147.3
Soil and Water Conservation	70.5 (5.3)	406.2 (12.3)	476.5
Animal Husbandry	123.7 (9.2)	237.5 (7.2)	92.1
Dairy Development	4.5 (0.4)	7.4 (0.3)	64.7
Fisheries	51.1 (3.8)	96.6 (3)	89.2
Forestry and Wild Life	108.2 (8.1)	226.4 (6.9)	109.4
Plantations	0.2 (0.1)	0.3 (0.1)	145.5
Food Storage and Warehousing	26.4 (2)	57.6 (1.8)	118.4
Agricultural Research and Education	5.9 (0.5)	9.9 (0.3)	67.1
Agricultural Finance Institutions	0 (0)	0 (0)	0.0
Co-operation	63 (4.7)	64.5 (2)	2.5
Other Agricultural Programmes	0.2 (0.1)	2.2 (0.1)	1666.7
Major and Medium Irrigation	99.4 (7.4)	138.4 (4.2)	39.3
Minor Irrigation	43.1 (3.2)	35.4 (1.1)	-17.8
Flood Control and Drainage	36.8 (2.8)	54.6 (1.7)	48.3
Others*	542.6 (40.3)	1533.9 (46.5)	182.7
Total	**1349.4** **(100)**	**3301.9** **(100)**	**144.7**

Source: State Finances, RBI;

Note: *The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total;

Table 7.5.7: Percentage share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	22.8	29.4	45.6
2000-01	25.4	28.0	43.8
2001-02	24.6	28.6	44.2
2002-03	23.9	31.4	43.1
2003-04	24.8	35.0	39.7
2004-05	24.7	36.7	38.6
2005-06	23.2	37.0	39.8
2006-07	22.8	37.1	40.1
2007-08	23.6	36.1	40.3
2008-09	24.3	34.7	41.0
2009-10	25.8	34.7	39.6
2010-11	24.9	34.5	40.5
2011-12	25.3	33.7	40.9
2012-13	26.0	33.0	41.0

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.5.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-3.4	-0.5	2	2	100.0	47614
2003-04	15.0	10.9	2	2	100.0	53476
2004-05	9.5	9.7	2	2	100.0	53371
2005-06	-0.3	6.3	2	2	100.0	56286
2006-07	0.1	2.0	2	2	100.0	56331
10th Plan Average	**4.2**	**5.7**	**2**	**2**	**100.0**	**53416**
2007-08	10.0	6.0	2	2	100.0	59334
2008-09	9.4	6.6	2	2	100.0	64635
2009-10	13.6	6.9	2	2	99.6	74046
2010-11	1.6	5.1	3	3	100.0	50593
2011-12	8.3	6.7	3	3	100.0	54814
11th Plan Average	**8.6**	**6.2**	**3**	**3**	**99.9**	**60684**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05);
10th and 11th plan value indicates average of the five years;
* Land productivity = agricultural GSDP/ha of NSA;

Table 7.5.9: Trend in Inputs Use in Manipur

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area*	Irrigation intensity (%)	% gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	0.5	0.5	25.5	100.0	25.5	135.7
2003-04	0.4	0.4	18.4	100.0	18.4	126.3
2004-05	0.5	0.5	22.7	100.0	22.7	86.0
2005-06	0.5	0.5	22.7	100.0	22.7	59.8
2006-07	0.5	0.5	22.7	100.0	22.7	67.9
10th Plan Average	**0.5**	**0.5**	**22.4**	**100.0**	**22.4**	**95.1**
2007-08	0.5	0.5	21.7	100.0	21.7	80.9
2008-09	0.5	0.5	22.0	100.0	22.0	54.8
2009-10	0.5	0.5	22.2	100.0	22.3	51.2
2010-11	0.7	0.7	21.0	100.0	21.0	27.9
2011-12	0.7	0.7	21.0	100.0	21.0	34.3
11th Plan Average	**0.6**	**0.6**	**21.6**	**100.0**	**21.6**	**49.8**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of the five years;
***** indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 7.5.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	0.8	0.7	-0.4	6.5	12.0	3.9
Maize	-5.0	-4.0	12.6	87.0	62.0	-26.9
Coarse Cereals	-5.0	-4.0	12.6	87.0	62.0	-7.0
Total Cereals	0.5	0.6	-0.3	9.0	13.9	3.0
Total Pulses	9.4	10.1	0.3	32.3	61.6	16.1
Total Food grains	0.8	0.6	-0.5	10.3	14.7	2.4
Total Oilseeds	2.1	17.5	297.8	1100.4	745.0	-2.2
Sugarcane	111.9	1.7	108.6	153.7	265.0	14.2

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.5.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.5	2.3	2.6	0.9
2003-04	2.9	0.0	7.9	6.0
2004-05	5.6	4.5	3.5	1.1
2005-06	2.7	0.0	1.6	2.4
2006-07	0.0	0.0	0.1	2.1
10th plan average	**2.5**	**1.4**	**3.2**	**2.5**
2007-08	1.3	2.6	1.1	-0.1
2008-09	1.3	-2.1	30.8	1.1
2009-10	-1.3	3.9	1.3	2.1
2010-11	0.0	0.0	1.6	5.2
2011-12	NA	NA	NA	10.0
11th plan average	**0.3**	**1.1**	**8.7**	**3.7**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years;
NA: data not available;

7.6 MEGHALAYA

7.6.1. Background Information

Meghalaya is one of the sister States of North-Eastern Region (NER) of India[14], bordering one Indian State– Assam to the north and east, one international boarder– Bangladesh to the south. The State is the 22nd largest State in the country, covers a geographical area of 22,429 sq. km, which accounts for 0.71 per cent of the country's total geographical area. As per 2011 population census, the total population of the State was 2,964,007, ranks at the 23rd position in term of population in India. The density of population was about 130 per sq. km.

Meghalaya is predominantly an agrarian economy. Agriculture and its allied activities engage nearly two-thirds of the total work force in Meghalaya. About 12.66 per cent of the State's total geographical area is identified as Net Sown Area (NSA) and 15.07 per cent as Gross Cropped Area (GCA) in 2010-11. The cropping intensity of the State is estimated at around 119 per cent. The average annual growth rate of agriculture stood at 4.56 per cent during the 10th Five Year Plan (FYP) and declined to 2.94 per cent in 11th FYP. Further, Table 7.6.7 and 7.6.8 depict the stock agriculture in Meghalaya during the 10th and 11th FYP. It is also clear that the GSDP growth, GCA, NSA, land productivity and cropping intensity have increased during the 11th FYP. Though the growth in overall GSDP was 3.8 per cent in 2002-03 and increased to 6.3 per cent in 2011-12.

When we estimate quantitatively, the growth of agriculture GSDP has declined from 4.2 per cent in 10th FYP to 1.7 per cenr in 11th FYP. Also, the contribution of agriculture and its allied sectors to GSDP has declined from 24.7 per cent in 1999-00 to 14.9 per cent in 2012-13, albeit, it is the general phenomenon in the national level. Land productivity and cropping intensity have declined in 11th FYP compared to previous plan. However, the qualitative and foundational development of agricultural sector is enormous in the State. It can be discussed in the following sections.

The hilly terrain and land conditions of the State do not offer much scope in bringing additional area under wet cultivation, but the State has a vast potential for developing horticulture, forest based crops and livestock sector. The agro-climatic variation within the State offers much scope for cultivation of temperature as well as tropical fruits and vegetables. Besides the major food crops of rice and maize, the State is also known for its

[14] India's North Eastern Region consists of 8 States– Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya, Nagaland, Sikkim and Tripura.

horticulture crops like orange, lemon, pineapple, guava, litchi, banana, jack fruits and temperate fruits such as plum, pear, peach etc. potato, ginger, turmeric, black pepper, areca nut, tez-pata, betel vine, short-staple cotton, jute, mesta, mustard and rapeseed, etc. Recent introduction of improved and modern methods of agriculture by the farmers, using of chemical fertilizers, plant protection measures and introduction of High Yielding Variety (HYV) seeds of paddy, wheat, maize, etc. has increased production of food grains in the State. Mechanization of agriculture has also gone up to some extent in the State.

But, the State falls short of food grains by 1.22 lakh tonnes annually to feed a population of 2.3 million. This is due to a lot of constraints, such as the undulating topography, transport and communication problem, population dispersal pattern, inadequate credit support, poor marketing system, etc. To overcome these hurdles, future programmes are proposed, like increase in agricultural/horticultural production and productivity, research system on the development of economically viable and local specific technologies in rain-fed and increasing the utilization of irrigation potential, etc.

After critical analysis of the sectoral growth of the State's economy, it has been observed that the growth of the agriculture and its allied sector was encouraged during the last three consecutive Five-Year Plan (8th to 10th Five-Year Plan) periods. With an apprehension of slow growth of agriculture and its allied sector in the country, the Rashtriya Krishi Vikas Yojana **(**RKVY) was implemented by the government of India on May 29, 2007, including Meghalaya. The scheme aims at achieving 4 per cent annual growth in agriculture and its allied sector during 11th Five Year plan (2007-12). For further development of agriculture sector, the government of India has spent huge fund under the RKVY scheme.

7.6.2. Rationale of the Scheme's Evaluation

Having understood the initiatives made by the government, it is imperative to analyse the impact of the scheme (RKVY) on the growth and development of agriculture sector in the State in the 11th FYP (post-RKVY period). As of the parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY scheme covers not only field crops of agriculture sector but also many other public goods and services like, infrastructure, irrigation, marketing, extension services, trainings, etc., mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agriculture sector which RKVY sponsors involves multi-faceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult; some approximations have to be made while evaluating the performance of

RKVY scheme. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be made for the period of 11th Five Year Plan.
2. A comparison of the scheme's performance will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment will be made through increase in area, production and productivity of crops as well as changes made in physical infrastructures of the agriculture sector in the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as one of the major parameters of performance evaluation of the scheme.

7.6.3. Distribution of Allocation and Expensditure across Sector

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors. There are 16 broader sectors of agriculture cover under RKVY scheme in Meghalaya. Based on the expenditure across the 16 sectors, 4 major sectors have been taken up for detail evaluation. These 4 major sectors utilized 81.53 per cent of the total expenditure under RKVY scheme and remaining 18.47 per cent of the total expenditure was spent by the 12 minor sectors. Accordingly, the sectors have been arranged in descending order in Table 7.6.1. Within the selected sectors, expenditure per project incurred by the fisheries sector was at the highest with Rs. 3 crore. It was followed by horticulture with Rs. 2.9 crore and lowest expenditure per project was incurred by the integrated pest management sector with Rs.0.33 crores in the State. Figure 7.6 depicts detail expenditure share of the major sectors under RKVY in Meghalaya during 11th FYP.

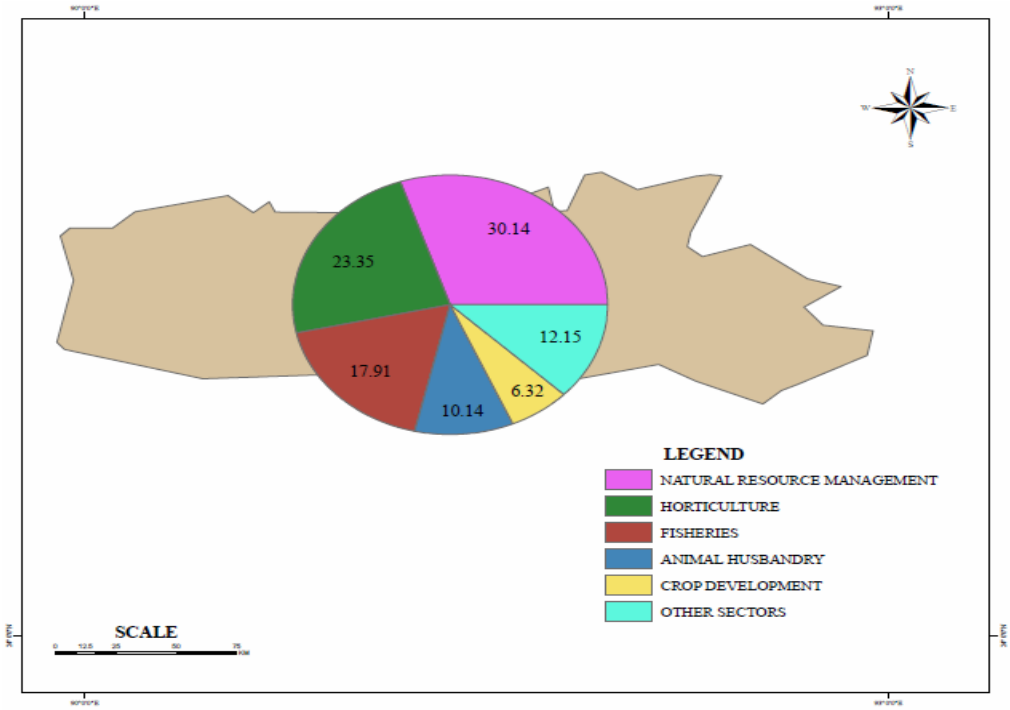

Figure 7.6: Share of Expenditure across Sectors

From the Table 7.6.1 we can clearly see that altogether Rs. 334.5 crores have been sanctioned for 93 projects under RKVY scheme in Meghalaya during 11th FYP. Of the total sanctioned fund, harpy Rs. 99.5 crores have been spent in during the period, estimated at 29.7 per cent of the total fund. Also, out of the 93 projects, during the period under RKVY scheme, only 53 have been initiated, and the average expenditure incurred per project was Rs. 1.9 crore. Out of the total expenditure under the scheme, natural resource management absorbed largest share, estimated at Rs. 30 crores, which is 30.2 per cent of the total expenditure in the State. It was followed by horticulture and fisheries sector with Rs. 23.2 crore, 23.4 per cent of the total expenditure and Rs. 17.8 crore, 18 per cent of the total, respectively.

In term of project status– ongoing, completed/substantially completed projects and abundant/not yet initiated projects, altogether 43 projects have been identified as completed/substantially completed during the 11th FYP. Of the total, natural resource management sector has registered the highest number of completed and substantially completed projects with an expenditure of Rs.2.7.3 crore. It was followed by the horticulture, fisheries and animal husbandry sector with expenditure of Rs. 20.05 crore, Rs. 10.5 crore and Rs. 8.34 crores respectively. Integrated pest management sector registered the least number of completed and substantially completed projects with an expenditure of Rs. 0.33 crores. It was followed (in ascending order) by organic farming/ bio fertiliser and non-farm activities with expenditure of Rs. 0.5 and Rs. 0.7 crores

respectively. Sectors like fertilizer and INM, sericulture, / training/ capacity building/ others did not have any completed and substantially completed projects during the period under RKVY scheme in Meghalaya. The projects commissioned in the sectors like, dairy development, fertilizer andinnovative programmes, have been abundant during the period. Also, of the sectors, fisheries found to have the largest abundant project and it was followed by horticulture and animal husbandry sector. In the category of "on-going projects", micro/minor irrigation sector was found to have the largest on-going/in progress projects during the 11th FYP, and followed by NRM (Table 7.6.3).

7.6.4. Nature-Wise Status of Expenditure for Sector, Sub-Sector of the Projects

In Meghalaya, no infrastructure project was initiated under RKVY during the 11th FYP. The projects initiated under the RKVY were classified into three namely, normal, State flagship and National flagship projects. Altogether 58 per cent of the projects came under normal, 33 per cent under national flagship and hardly 10 per cent was under the State flagship projects.

The State flagship projects were the special kind of projects where the autonomy and flexibility was given to the State government. Meghalaya covered two State flagship projects– fisheries and crop development. With regard to the national flagship projects, Meghalaya has got 12 projects under this category. Natural resource management, horticulture, and fisheries sectors have got the projects under this category. In term of normal projects, most of the sectors were solely taken up by this category (Table 7.6.4).

To understand the magnitude and importance of the projects taken up under the RKVY scheme, based on the expenditure, the 13 sectors/projects of the present study have been classified into two categories/slabs a) up to 1 crore b) Above 1 crore to 10 crore. From the Table 7.6.2 we can see that 35.9 per cent of the projects came under the first slab (up to 1 crore) and 8.2 per cent of the total expenditure was made on this category of projects. And, 64.2 per cent of the projects came under the category/slab of upper slab (above 1 crore), spent 91.8 per cent of the total expenditure on this category. The entire projects of the 5 sectors, viz. fisheries, crop development, agriculture mechanisation, co-operatives and sericulture have come under the upper expenditure slab (above 1 crore). Similarly, entire projects under the sectors of marketing, non-farm activities, organic farming and IPM have come under the lower slab (up to 1 crore).

7.6.5. Changes in Agricultural Sector in 11th FYP

When we see the impact of RKVY, the present section compares the changes that have made in 11th FYP compared to the previous plan. From the Table 7.6.5 we can see that

the share of RKVY to State agriculture expenditure was found to be 3.9 per cent in 11th FYP. The agriculture expenditure from the State budget has increased from 16.1 per cent in 10th FYP to 17 per cent in 11th FYP. Also, the share of agriculture expenditure from agriculture GSDP has also increased significantly from 13.2 per cent in 10th FYP to 21.5 per cent in 11th FYP.

In term of State budgetary expenditure, the overall change of budgetary expenditure on agriculture in 11th FYP over the 10th FYP was 206 per cent. Of the sectors, soil and water conservation registered the highest change over the 10th Plan, estimated at 294.3 per cent. It was followed by fisheries with 281 per cent and 219 per cent by minor irrigation (Table 7.6.6). However, the trend of input used in agriculture was found to be declining or stagnant, during 11th Plan compared to 10th FYP (Table 7.6.9). For instances, cropping intensity, fertiliser consumption and share of net irrigated area have decreased during 11th plan, compared to the previous plan in Meghalaya. Similarly, the growth of major crops in the State was found to be stagnant or declining during 11th plan (Table 7.6.10). For instances, the yield rate of almost all the major crops of the State, barring pulses and oilseed, have declined significantly. Though there was some increase in area of the major crops and stable food, rice crop, the area of oilseed and fibre crops have declined. The same holds true for the production of livestock and fish products. The annual growth rate has gone down during the 11th FYP compared to 10th plan (Table 7.6.11).

7.6.6. Concluding Remarks

In Meghalaya, RKVY project comprises of 16 sectors, which includes 32 sub-sectors. Out of the 16 sectors, 5 major sectors absorbed 81.53 per cent of the expenditure during 11th FYP. Among the major sectors, natural resource management utilized the major funds. It was followed by horticulture, fisheries, animal husbandry and crop development. The major focus of the scheme's evaluation was given to the magnitude of expenditure of the sectors, as impact can be depicted directly or indirectly on which expenditures have been made. In the State, no infrastructure project was found under RKVY. Of the total, 9.84 per cent of the expenditure was spent on the State flagship projects, especially fisheries and crop development sector. National flagship projects attracted 32.55 per cent of expenditure, especially the natural resource management sector. As per the RKVY mandate, the funds were being utilized and spent for development of agriculture and its allied activities in an integrated manner.

For better understanding of the RKVY in the State on the above stated major sectors, we verified the performance of those sectors before and after implementation of RKVY. To verify the performance, first we took basic indicators and then cross checked in two time periods (pre and post RKVY), i.e., 2006-07 and 2010-11. As indicated in Appendix Table

7.6, the horticulture sector and vegetable production have increased by 2.41 percent over a period of five years. In the natural resource management sector, the production of total food grains increased by 3 percent.

In totality, the Meghalaya State did not achieve the targeted growth rate of 4 per cent in agriculture as planned in 11th FYP, which is clearly reflected in the Tables 8. Nevertheless, this slow growth in agriculture and its allied activities might not be solely due to RKVY intervention in the State, because there are some significant initiatives like, Tribal Sub-plan, Land Reclamation, NAEP-III, etc. have taken up by the State in the recent past. But no one can deny the contribution of the RKVY in the process of agricultural development in Meghalaya. In order to validate the results given by this secondary data of RKVY, a primary field survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits of the farmers can be explicitly known.

TABLES

Table 7.6.1: Sector-Wise Allocation and Expenditure under RKVY during 11th FYP

(Rs. Crore)

Sectors	No. of project*	Allocation^	Expenditure^	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
NRM	13 (19)	60.7 (18.2)	30.0 (30.2)	0.5	2.3
Horticulture	8 (16)	144.3 (43.2)	23.2 (23.4)	0.2	2.9
Fisheries	6 (15)	73.4 (22)	17.8 (18)	0.2	3.0
Animal Husbandry	7 (14)	16.7 (5)	10.1 (10.2)	0.6	1.4
Crop Development	3 (3)	12.5 (3.8)	6.3 (6.4)	0.5	2.1
Micro/Minor Irrigation	8 (13)	17 (5.1)	5.1 (5.2)	0.3	0.6
Agriculture Mechanization	1 (2)	2.9 (0.9)	2.6 (2.7)	0.9	2.6
Cooperatives and Cooperation	1 (1)	1 (0.3)	1 (1.1)	0.4	1.0
Sericulture	1 (1)	2.4 (0.8)	1 (1.1)	1.0	1.0
Marketing & PHM	2 (2)	0.8 (0.3)	0.8 (0.9)	1.0	0.4
Non Farm Activities	1 (1)	0.7 (0.3)	0.7 (0.8)	1.0	0.7
Organic Farming / Bio Fertilizer	1 (1)	0.5 (0.2)	0.5 (0.6)	1.1	0.5
Integrated Pest Management	1 (1)	0.3 (0.1)	0.3 (0.4)	1.0	0.3
Dairy Development	0 (1)	1.2 (0.4)	0 (0)	0.0	0.0
Fertilizers & INM	0 (1)	0.1 (0.1)	0 (0)	0.0	0.0
Innovative Programmes	0 (2)	0.1 (0.1)	0 (0)	0.0	0.0
Grand Total	**53 (93)**	**334.5 (100)**	**99.5 (100)**	**0.3**	**1.9**

Source: www.rkvy.nic.in, April, (2013)

Note:* Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY; ^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total; NRM: Natural Resource Management; PHM: Post Harvest Management; INM: Integrated Nutrient Management; ** the ratio <1 indicates the allocation is not fully utilised and the ratio=1 indicates the allocation is exactly equal to the expenditure;

Table 7.6.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	Above 0 to 1 crore		Above 0 to 1 crore		Grand Total*	
	No.	Exp.	No.	Exp.	No.	Exp.
NRM	23.1	4.1	76.9	95.9	13(100)	30(100)
Horticulture	37.5	7.6	62.5	92.4	8(100)	23.3(100)
Fisheries	0.0	0.0	100.0	100.0	6(100)	17.9(100)
Animal husbandry	28.6	2.5	71.4	97.5	7(100)	10.1(100)
Crop development	0.0	0.0	100.0	100.0	3(100)	6.3(100)
Micro/minor irrigation	75.0	49.9	25.0	50.1	8(100)	5.1(100)
Agriculture mechanization	0.0	0.0	100.0	100.0	1(100)	2.7(100)
Cooperatives and cooperation	0.0	0.0	100.0	100.0	1(100)	1(100)
Sericulture	0.0	0.0	100.0	100.0	1(100)	1(100)
Marketing and PHM	100.0	100.0	0.0	0.0	2(100)	0.9(100)
Non farm activities	100.0	100.0	0.0	0.0	1(100)	0.7(100)
Organic farming / bio fertilizer	100.0	100.0	0.0	0.0	1(100)	0.5(100)
Integrated pest management	100.0	100.0	0.0	0.0	1(100)	0.4(100)
Grand Total	**35.9**	**8.2**	**64.2**	**91.8**	**53(100)**	**99.6(100)**

Source: Same as table 1
Note: Exp: Expenditure; *indicates the number in absolute figures**;**

Table 7.6.3: Status-wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
NRM	4	2.7	11	27.3	4	0.0
Horticulture	1	3.2	7	20.0	8	0.0
Fisheries	1	7.3	5	10.5	9	0.0
Animal Husbandry	1	1.8	6	8.3	7	0.0
Crop Development	1	1.5	2	4.8	0	0.0
Micro/Minor Irrigation	8	0.7	5	4.4	0	0.0
Agriculture Mechanization	0	0.0	1	2.6	1	0.0
Cooperatives and Cooperation	0	0.0	1	1.0	0	0.0
Sericulture	1	1.0	0	0.0	0	0.0
Marketing & PHM	0	0.0	2	0.8	0	0.0
Non Farm Activities	0	0.0	1	0.7	0	0.0
Organic Farming / Bio Fertilizer	0	0.0	1	0.5	0	0.0
Integrated Pest Management	0	0.0	1	0.3	0	0.0
Dairy Development	0	0.0	0	0.0	1	0.0
Fertilizers & INM	0	0.0	0	0.0	1	0.0
Innovative Programmes	0	0.0	0	0.0	2	0.0
Grand Total	**17**	**18.1**	**43**	**81.5**	**33**	**0.0**

Source: Same as table 1

Table 7.6.4: Sector and Sub-Sector wise Classification by Nature of Project under RKVY during 11th Five Year Plan (Non-infrastructure)

(Per cent)

Sectors and Sub-sectors	Normal project	State Flagship project	National flagship project	Grand Total
NRM	**43.5**	**0.0**	**56.5**	**100(30)**
Land reclamation	100.0	0.0	0.0	100(1.6)
Water conservation structures and watershed dev	40.4	0.0	59.6	100(28.5)
Horticulture	**57.2**	**0.0**	**42.8**	**100(23.3)**
Development of horticulture farms/ facilities	20.1	0.0	79.9	100(12.5)
Fruits	0.0	0.0	0.0	0(0.0)
Nurseries and green houses	100.0	0.0	0.0	100(4.8)
Others (horticulture)	100.0	0.0	0.0	100(6.1)
Vegetable	0.0	0.0	0.0	0(0.0)
Fisheries	**41.1**	**28.0**	**30.8**	**100(17.9)**
Farmers fish ponds/ assistance including training	0.0	0.0	100.0	100(2)
Infrastructure/ ponds of fisheries/ dept/ agency	49.4	33.7	16.9	100(14.9)
Others (fisheries)	0.0	0.0	100.0	100(1)
Animal husbandry	**100.0**	**0.0**	**0.0**	**100(10.1)**
Animal health	100.0	0.0	0.0	100(0.1)
Breed improvement	0.0	0.0	0.0	0(0.0)
Infrastructure	100.0	0.0	0.0	100(1.9)
Others (animal husbandry)	100.0	0.0	0.0	100(5.6)
Poultry	100.0	0.0	0.0	100(2.6)
Crop development	**23.9**	**76.1**	**0.0**	**100(6.3)**
Others (crop development)	23.9	76.1	0.0	100(6.3)
Micro/minor irrigation	**100.0**	**0.0**	**0.0**	**100(5.1)**
Check dams/ water courses bunds	0.0	0.0	0.0	0(0.0)
Percolation tanks/ minor irrigation tanks	100.0	0.0	0.0	100(0.8)
Pump sets (diesel/electric)	0.0	0.0	0.0	0(0.0)
Shallow wells/ dug well	100.0	0.0	0.0	100(1.5)
Tube wells	100.0	0.0	0.0	100(2.9)
Agriculture mechanization	**100.0**	**0.0**	**0.0**	**100(2.7)**
Machines and equipment assistance	100.0	0.0	0.0	100(2.7)
Others (agri. Mechanization)	0.0	0.0	0.0	0(0.0)
Cooperatives and cooperation	**100.0**	**0.0**	**0.0**	**100(1)**
Other facilities	100.0	0.0	0.0	100(1)
Sericulture	**100.0**	**0.0**	**0.0**	**100(1)**
Seed farm	100.0	0.0	0.0	100(1)
Marketing and PHM	**100.0**	**0.0**	**0.0**	**100(0.9)**
Others (marketing & PHM)	100.0	0.0	0.0	100(0.9)

Non farm activities	**100.0**	**0.0**	**0.0**	**100(0.7)**
Post harvest processing facilities	100.0	0.0	0.0	100(0.7)
Organic farming / bio fertilizer	**100.0**	**0.0**	**0.0**	**100(0.5)**
Promotion of organic farming	100.0	0.0	0.0	100(0.5)
Integrated pest management	**100.0**	**0.0**	**0.0**	**100(0.4)**
Farmers field schools	100.0	0.0	0.0	100(0.4)
Dairy development	**0.0**	**0.0**	**0.0**	**0(0.0)**
Others (dairy development)	0.0	0.0	0.0	0(0.0)
Fertilizers and INM	**0.0**	**0.0**	**0.0**	**0(0.0)**
Soil testing lab	0.0	0.0	0.0	0(0.0)
Innovative programmes	**0.0**	**0.0**	**0.0**	**0(0.0)**
Others (innovative programmes, training & others)	0.0	0.0	0.0	0(0.0)
Grand total	**57.6**	**9.8**	**32.5**	**100(99.6)**

Source: Same as table 1
Note: Figures in the parentheses are the respective absolute expenditure (Rs in crore);

Table 7.6.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	134	12	147	959	15.3	10.4	
2003-04*	162	162	323	1338	24.1	22.6	
2004-05	150	15	166	1247	13.3	10.9	
2005-06	171	12	183	1264	14.5	11.4	
2006-07	168	9	177	1334	13.3	10.9	
10th Plan average	**785**	**210**	**996**	**6141**	**16.1**	**13.2**	
2007-08	193	16	209	1506	13.9	13.0	
2008-09	213	37	250	1764	14.2	14.9	
2009-10	295	41	337	1897	17.7	19.7	**3.9**
2010-11	422	74	496	2321	21.4	28.6	
2011-12*	477	76	552	3074	18.0	31.3	
11th Plan average	**1601**	**243**	**1844**	**10562**	**17.0**	**21.5**	
% change over 10th plan	**103.8**	**15.8**	**85.2**	**72.0**			

Source: State Finances, RBI
Note: * indicates Revised estimates, rest all accounts; Agriculture and allied activities includes Irrigation and flood control; 10th and 11th plan average value indicates average of the five years;
Budgetary expenditure is accounts only developmental expenditure; Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100;

Table 7.6.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. in crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	213.1 (24.6)	736 (27.8)	245.4
2	Soil and Water Conservation	129 (14.9)	508.7 (19.2)	294.3
3	Animal Husbandry	117.5 (13.6)	253.6 (9.6)	115.8
4	Dairy Development	26.5 (3.1)	43.9 (1.7)	65.9
5	Fisheries	27.3 (3.2)	104 (4)	280.7
6	Forestry and Wild Life	175.7 (20.3)	417.8 (15.8)	137.9
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	0 (0)	1.8 (0.1)	0.0
9	Agricultural Research and Education	20.2 (2.4)	39.7 (1.5)	96.5
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	58.5 (6.8)	101.8 (3.9)	74.0
12	Other Agricultural Programmes	10.9 (1.3)	27.5 (1.1)	152.2
13	Major and Medium Irrigation	0.5 (0.1)	0.6 (0.1)	39.0
14	Minor Irrigation	53.9 (6.3)	171.8 (6.5)	218.8
15	Flood Control and Drainage	2.7 (0.4)	4.5 (0.2)	67.0
16	Others	33.4 (3.9)	242.8 (9.2)	626.7
Total		**868.8 (100)**	**2653.8 (100)**	**205.5**

Source: State Finances, RBI

***Note:** The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Controlare categorized under others; Figures in the parenthesis are percentage to the respective total;

Table 7.6.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	24.7	23.5	51.8
2000-01	24.8	24.2	51.1
2001-02	23.9	25.3	50.8
2002-03	24.5	24.4	51.1
2003-04	23.4	25.9	50.7
2004-05	23.3	26.1	50.6
2005-06	22.6	26.4	51.0
2006-07	21.3	27.6	51.1
2007-08	20.2	28.9	51.0
2008-09	18.6	30.1	51.3
2009-10	17.8	30.0	52.2
2010-11	16.7	29.4	53.9
2011-12	15.9	30.3	53.8
2012-13	14.9	31.4	53.7

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.6.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross Cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	6.4	3.8	2	3	123.9	61161
2003-04	1.8	6.8	2	3	119.8	63094
2004-05	6.5	7.1	2	3	121.0	69638
2005-06	4.9	7.9	2	3	121.7	75459
2006-07	1.3	7.7	2	2	115.5	76102
10th Plan Average	**4.2**	**6.7**	**2**	**3**	**120.4**	**69091**
2007-08	-0.9	4.5	2	3	120.4	68346
2008-09	4.1	12.9	3	3	118.7	58899
2009-10	2.3	6.6	3	3	118.7	60442
2010-11	1.5	8.7	3	3	119.0	61155
2011-12	1.5	6.3	3	3	119.0	62055
11th Plan Average	**1.7**	**7.8**	**3**	**3**	**119.2**	**62179**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);
* Land productivity = agricultural GSDP/ha of NSA;
10th and 11th plan average value indicates average of the five years;

Table 7.6.9: Trend in Inputs Use in Meghalaya

Year	Net irrigated area (lakh ha)	Gross irrigated area (lakh ha)	% net irrigated to net sown area*	Irrigation intensity (%)	% gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	0.6	0.8	25.7	128.8	26.7	16.7
2003-04	0.6	0.8	26.4	136.7	30.1	19.5
2004-05	0.6	0.7	26.5	127.6	27.9	18.1
2005-06	0.6	0.6	25.9	116.4	24.8	18.0
2006-07	0.7	0.7	31.5	107.5	29.3	19.0
10th Plan Average	**0.6**	**0.7**	**27.2**	**123.4**	**27.8**	**18.2**
2007-08	0.6	0.7	24.7	125.9	25.8	14.4
2008-09	0.6	0.7	21.8	117.7	21.7	13.0
2009-10	0.6	0.7	21.9	119.4	22.0	13.0
2010-11	0.6	0.7	22.2	117.5	21.9	15.0
2011-12	0.6	0.7	22.2	117.5	21.9	14.2
11th Plan Average	**0.6**	**0.7**	**22.6**	**119.6**	**22.7**	**13.9**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note:* indicates the Net irrigated area /Net sown area*100; ^ indicates Gross irrigated area /Gross sown area*100; 10th and 11th plan average value indicates average of the five years;

Table 7.6.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	-0.5	2.6	2.6	0.8	1.6	0.8
Wheat	-21.3	-17.7	3.4	-7.2	-11.5	-4.6
Small Millets	-0.7	0.1	0.8	-3.0	-4.6	-1.7
Total Cereals	-0.8	1.7	2.2	0.7	1.4	0.8
Total Pulses	-3.3	-3.2	0.0	1.6	5.6	3.9
Total Food grains	-0.9	1.6	2.2	0.7	1.5	0.8
Sesamum	4.6	3.8	-1.1	-0.3	1.7	-17.2
Total Oilseeds	0.6	0.6	0.0	0.2	2.9	2.7
Total Fibres	-0.5	3.8	4.1	-30.1	-23.4	-7.0

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.6.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	3.0	15.8	4.5	8.0
2003-04	1.5	1.0	-0.7	-4.1
2004-05	2.9	0.0	1.1	9.5
2005-06	2.8	2.8	2.9	-27.0
2006-07	2.7	-2.7	0.5	33.3
10th plan average	**2.6**	**3.4**	**1.6**	**4.0**
2007-08	2.7	2.8	1.2	-27.1
2008-09	1.3	0.0	0.5	-1.0
2009-10	0.0	0.0	0.4	9.3
2010-11	1.3	2.7	1.2	5.3
2011-12	NA	NA	NA	4.6
11th plan average	**1.3**	**1.4**	**0.8**	**-1.8**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years; NA: data not available;

7.7 MIZORAM

7.7.1. Background Information

Mizoram is one of the seven sister States of North Eastern Region of India, sharing borders with three Indian States– Tripura, Assam and Manipur and two international boundaries– Bangladesh and Myanmar (Burma). The region, including Mizoram is influenced by monsoons, receives heavy rainfall from May to September, and little rain in the dry (cold) season. The average annual State rainfall is 254 mm. The State covers a geographical area of 21,081 sq. km, which accounts for 0.64 per cent of the country's total geographical area and stands at 24th rank in term of geographical area. About 6.17 per cent of the State's total geographical area is identified as Net Sown Area (NSA) and 6.31 per cent as Gross Cropped Area (TCA) in 2010-11. The cropping intensity of the State is estimated at around 102.31 per cent.

According to 2011 census document, the total population of the State is 10.9 lakhpersons, and holds 27th rank of the country, in term of population.The State covers around 32 per cent of the cultivated area was under jhum cultivation and only 20 per cent of the total demand for rice could be met within the State, while a total of 14, 28,600 tonnes of rice was lifted by the State government from outside in 2011. More than 70 per cent of the total population is engaged in one form of agriculture or the other. The age-old practice of jhum cultivation is being discouraged by the State government with the schemes like the New Land Use Policy, a policy to help farmers move away from the traditional slash-and-burn method of cultivation (jhum) to settled/permanent cultivation. Due to these factors, the status and development of agriculture sector was found to be very slow till the end of 10th FYP.

With an apprehension of further slowing down of agriculture and its allied sector, the RKVY scheme was implemented by the government of India in 29th May 2007, with an objective of achieving 4 per cent annual growth in agriculture and its allied sector during 11th plan (2007-12). Table 7.7.8 reveals annual growth of agricultural Gross State Domestic Product (GSDP) and share of agriculture to the GSDP. Over the years, the growth rate of annual agriculture GSDP and the contribution of agriculture and its allied sector to the GSDP has increased significantly. For instance, agricultural GSDP growth rate in the State was 5.9 per cent in 10th Five Year Plan (FYP) and further increased to 10.8 per cent in 11th FYP. So does the contribution of agriculture to GSDP. It was 1.8 per cent in 10th FYP, and increased to 8.8 per cent in 11th FYP.

7.7.2. Rationale of the Scheme's Evaluation in Mizoram

Having understood the initiatives made by the government, it is imperative to analyse the impact of the scheme (RKVY) in the State in the 11th FYP (post-RKVY period). As of the parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY scheme covers not only field crops but also many other agriculture and its related sectors like, infrastructure, irrigation, marketing, extension services, trainings, etc., mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agriculture sector involves multi-faceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult; some approximations have to be made while evaluating the performance of RKVY scheme. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be made for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance of the State will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment needs to be made through increase in area, production and productivity of crops as well as change in physical infrastructures of the sector in the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as the main parameter of performance evaluation of the scheme.

7.7.3. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across the sectors. Altogether 13 sectors have been brought under RKVY scheme in the State. In fact, these are the projects which have contributed significantly for achieving targeted agricultural growth rate in the State. Of the sectors, 5 major sectors were identified, which utilized almost 80 per cent of the total allocated fund. They are– natural resource management, horticulture, animal husbandry, innovative programmes and fisheries. The remaining 8 minor sectors utilized only 20 per cent of the total expenditure in the State under the scheme. Further, expenditure per project was incurred highest by the Innovative Programmes sector with Rs. 14.8 crores and lowest was registered by the Integrated Pest Management sector with Rs. 0.1 crores. Similarly, the expenditure-allocation ratio does follow the almost same trend with respect to the major sectors. Interestingly, cost per project of a minor sector (dairy development) was found to be higher when compared with a few major sectors (horticulture and fisheries). The above

results are clearly seen in the Table 7.7.2, which represent distribution of allocation, expenditure and expenditure per project across sectors.

The sector-wise allocation and expenditure, expenditure-allocation ratio and status-wise expenditure are also presented in the Table 7.7.1. We can see that, natural resource management sector was allocated the largest share of fund *i.e.*, Rs. 58.7 crores of the total allocation. It was followed by horticulture (Rs.20.3 crores), animal husbandry (Rs. 15.5 crores) and so on. The sectors which got less share to the allocation were the integrated pest management, marketing & post harvest management and dairy development with Rs.0.30 crore, Rs.1.00 crore and Rs.1.30 crores respectively.

Again, crop development sector spent the lion's share of fund (Rs.56.3 crore) and it was followed by horticulture (Rs.17 crore), animal husbandry (Rs. 15.5 crore) and so on. The least spending sectors were the integrated pest management, marketing & post harvest management and dairy development with Rs0.03 crore, Rs0.8 crore and Rs1.3 crores respectively.

With respect to expenditure allocation ratio, almost six sectors (animal husbandry, innovative programmes, sericulture, agriculture mechanization, dairy development and integrated management) spent the entire allocated fund, where the expenditure allocation ratio was 1:1 for those sectors. Other sectors[15] were not able to spend the entire allocation during the 11th FYP (Figure 7.7).

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Other sectors includeCrop Development, Sericulture, Agriculture Mechanization, Extension, Micro/Minor Irrigation, Dairy Development, Marketing &Post Harvest Management (PHM), Integrated Pest Management (IPM)

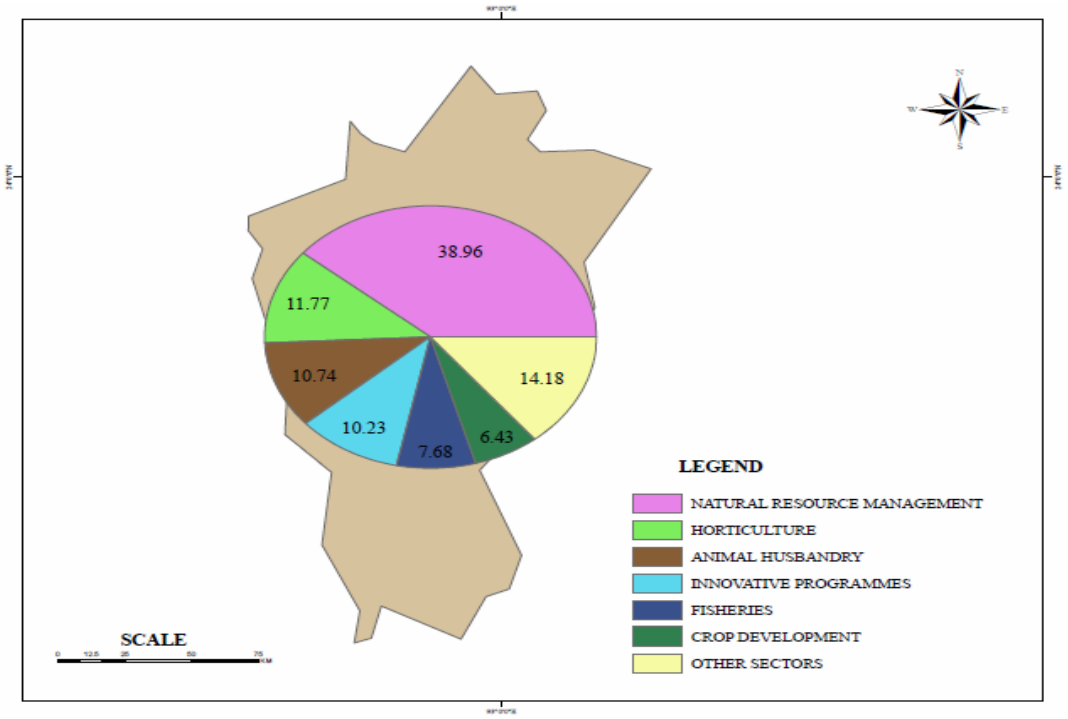

Figure 7.7: Share of Total Expenditure across Sectors

7.7.4. Sector-Wise Size of the Projects based on the Expenditure

The numbers and magnitude of projects undertaken and expenditure incurred under the RKVY schme during the 11th FYP is presented in Table 7.7.2. The total amount spent under RKVY was classified in to four categories/slabs- a) up to 1 crore, b) Above 1 crore to 10 crores and c) Above 10 crores to 25 crores. Out of total expenditure under RKVY in Mizoram, 0.7 per cent of the projects falls in the spending slab between Rs. 10 to Rs. 25 crores incurred 10.2 per cent of the expenditure. Only projects under Innovative programmes were found under this category. On the other hand, majority of the project (76.4 per cent) falls under the category/ slab of "up to 1 crore" and it spent 31.2 per cent of the total expenditure. They are– Natural resource management, horticulture, animal husbandry, fisheries, crop development, sericulture, agriculture mechanization, extension. About 23 per cent of the projects have come under the 2nd category (1 to 10 crore) which absorbed the maximum fund, estimated at 58.5 per cent of the total expenditure. They are– natural resource management, horticulture, animal husbandry, fisheries, crop development, extension, micro/ minor irrigation and dairy development.

7.7.5. Sector-Wise Expenditure according to Status

The sector-wise, status-wise expenditure are presented in Table 7.7.3. Out of the total expenditure incurred under the scheme, about 96.8 per cent (Rs 139.7 crores) was spent

on projects of completed and substantially completed projects, estimated for 136 number of projects and remaining 4.2 per cent of expenditure was made on the projects of ongoing and abandoned/not yet implemented projects, accounted for 14 number of projects. Of the sectors, natural resource management has the got the highest number of completed and substantially completed projects with an expenditure of 54.1 crores. It was followed by the animal husbandry, horticulture, innovative programmes with an expenditure of Rs 15.5 crores, Rs 15.1 crores and Rs 14.8 crores respectively. Integrated pest management, dairy development and marketing & PHM have got the least number of completed and substantially completed projects with an expenditure of Rs 1.3 crores, Rs 0.3 crores and Rs 0.8 crores respectively.

Sectors like animal husbandry, innovative programmes, fisheries, crop development, sericulture, agriculture mechanization, extension, Micro/minor irrigation, dairy development, marketing & PHM and integrated pest management did not make any expenditure on the projects which are approved, ongoing and projects in progress. However, the natural resource management and horticulture sectors have spent entire allocated fund of the on-going/in progress category. Altogether 5 projects have been abundant during the 11th FYP, but they made an expenditure of Rs 1.4 crore.

7.7.6. Sector and Sub Sector Wise distribution of Projects by Nature

Table 7.7.4 presents sector and sub-sector wise expenditure on infrastructure and non-infrastructure projects. Unfortunately, no State or central flagship projects were found under the RKVY scheme in Mizoram during the 11th FYP. Out of the total expenditure of Rs 144.7 crores under RKVY scheme in Mizoram, about 7.2 per cent (Rs. 10.3 crores) spent on infrastructure projects in agriculture and its allied activities. Larger share (92.9 per cent) of the scheme's fund was spent on the non-infrastructure projects, estimated at Rs 134.4 crores during the 11th FYP in the State. The natural resource management sector spent the highest expenditure, accounted for Rs. 56.4 crores. It composed of 14 per cent in infrastructure and 86 per cent of non-infrastructure projects. The horticulture sector spent Rs. 17.1 crores, animal husbandry with Rs. 15.6 crores, innovative programmes with Rs. 14.8 crores and fisheries with Rs. 11.2 crores.

7.7.7. Major Sector-Wise Stated and Actual Goals

An effort was made with this study to capture the impact of RKVY projects in terms of output and outcome. Appendix Table 7.7 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Mizoram.

Table 7.7.5 shows growth of both revenue and capital expenditure in the 11th FYP compared to 10th FYP. The State budget outlay for agriculture has increased by 54.5 per cent in the 11th FYP over 10th FYP. Also, the percentage of agricultural share in the State budget increased from 14.6 per cent to 20.3 per cent in the 11th plan. Out of total expenditure in agriculture in the State, RKVY shared was about 6 per cent of the total expenditure. Although agriculture share in the State budget declined in the 11th plan, agriculture expenditure as a share of State Gross State Domestic Product (GSDP) has increased from 14.6 per cent in 10th plan to 20.3 per cent in the 11th plan. This also suggests that the GSDP from other sectors have increased faster than that of agriculture in the State during the same period. If we look into the State budgetary composition of agriculture and its allied sectors in Mizoram, the overall change in 11th FYP over the 10th FYP was almost 179 per cent. Of the sectors within the agriculture, the highest per cent change over the previous plan happened in agriculture research and education with 2776.9 per cent. It was followed by food storage and ware housing with 406.7 per cent, Fisheries with 258.8 per cent, soil and water conservation with 197.2 per cent and animal husbandry with 148.2 per cent (Table 7.7.6).

The GSDP at factor cost (2004-05) by industry origin shows that the relative share of agriculture and its allied activities to the total GSDP has declined from 31.2 per cent in 1999-00 to 19.4 per cent in 2012-13. However, the share of industry has increased from 15.7 per cent in 1999-00 to 20.1 per cent in 2012-13; it was followed by services sector share of 55.7 per cent to 60.4 per cent during the same period. The growth in overall GSDP has increased from 5.9 per cent in 10th FYP to 10.8 per cent 11th FYP. But the agriculture GSDP growth has increased from 1.8 per cent in 10th plan to 8.8 per cent in the 11th plan. There was no change in Net Sown Area and gross cropped area and so as the cropping intensity. However, there is marginal decline in the irrigation intensity in the State during 11th plan compared to 10th plan (Table 7.7.8 &7.7.9). The land productivity was found to be increasing during the 11th FYP, and it might be due to inflation factor (Table 7.7.8). The average fertilizer consumption has increased from 23.4 kg/ha of GCA in the 10th plan to 39.6 kg/ha of GCA in the 11th FYP (Table 7.7.9). In case of growth rate in area, yield and production of major crops in the State, it shows a mixed bundle where there is a considerable increase in the production and productivity of crops especially in the case of rice, maize, total cereals, total food grains and total oil seeds, etc. and at the same time, reduction of growth in area, production and productivity was found in the case of total pulses (Table 7.7.10). The average annual growth in production and productivity of livestock products and fisheries in Mizoram shows that there was a drastic decrease in production of milk, meat, egg and fish during 11th plan compared to 10th plan (Table 7.7.11).

7.7.8. Concluding Remarks

The State has achieved 8.8 per cent of GSDP which is much higher than the targeted growth rate of 4 per cent in agriculture during the 11th FYP under RKVY. In Mizoram, RKVY project comprises of 13 sectors which includes 35 sub-sectors. Out of the 13 sectors, 5 sectors absorbed almost 80 per cent of the total expenditure. Among the major sectors, horticulture utilized the major funds, was followed by animal husbandry, innovative programmes and fisheries. In the State, to develop the infrastructure and assets in the agriculture and its allied sectors, RKVY allocated small share of funds, estimated at 7.1 per cent of the total expenditure allocated for the scheme. Despite this meager share of expenditure, these sectors might have played a crucial role for development of agriculture and its allied activities in the State. Besides, the State has not implemented any special kind of State and national flagship projects.

As of the evaluation of the scheme, major focus was given to the expenditure component, because impact of the scheme can be depicted clearly through expenditures. The State managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds were being utilized and spent for development of agriculture and its allied activities in an integrated manner. Though there were few cases of divergence, most of the stated goals have been met. In order to validate the results drawn from the available secondary data of RKVY websites, primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be known explicitly.

TABLES

Table 7.7.1: Sector -Wise Allocation and Expenditure under RKVY during 11th FYP

(Rs. Crore)

Sectors	No. of project*	Allocation^	Expenditure^	Expenditure allocation ratio**	Expenditure/ Project
1	**2**	**3**	**4**	**5=3/2**	**6=4/2**
NRM	42(42)	58.7 (38.7)	56.3 (39)	1.0	1.3
Horticulture	15(15)	20.3 (13.4)	17 (11.8)	0.8	1.1
Animal Husbandry	18(18)	15.5 (10.3)	15.5 (10.8)	1.0	0.9
Innovative Programmes	1(1)	14.8 (9.8)	14.8 (10.3)	1.0	14.8
Fisheries	12(12)	11.3 (7.5)	11.1 (7.7)	1.0	0.9
Crop Development	11(13)	10.5 (6.9)	9.3 (6.5)	0.9	0.8
Sericulture	17(17)	6.9 (4.6)	6.9 (4.9)	1.0	0.4
Agriculture Mechanization	9(9)	4.1 (2.7)	4.1 (2.9)	1.0	0.5
Extension	10(10)	3.9 (2.7)	3.9 (2.7)	1.0	0.4
Micro/Minor Irrigation	6(6)	3.4 (2.3)	3.3 (2.3)	1.0	0.5
Dairy Development	1(1)	1.3 (0.9)	1.3 (0.9)	1.0	1.3
Marketing & PHM	3(3)	1 (0.7)	0.8 (0.6)	0.8	0.3
Integrated Pest Management	3(3)	0.3 (0.2)	0.3 (0.3)	1.0	0.1
Grand Total	**148(150)**	**152.2 (100)**	**144.6 (100)**	**1.0**	**1.0**

Source: www.rkvy.nic.in, April (2013)

Note: * Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY;
^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total;
** The ratio <1 indicates the allocation is not fully utilised, the ratio=1 indicates the allocation is exactly equal to the expenditure and the ratio =0 indicates the allocation has not spent yet;
NRM: Natural Resource Management; PHM: Post Harvest Management;

Table 7.7.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	up to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Grand Total*	
	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.
NRM	66.7	24.1	33.3	75.9	0.0	0.0	42(100)	56.4(100)
Horticulture	60.0	18.8	40.0	81.2	0.0	0.0	15(100)	17.1(100)
Animal husbandry	77.8	41.1	22.2	58.9	0.0	0.0	18(100)	15.6(100)
Innovative programmes	0.0	0.0	0.0	0.0	100.0	100.0	1(100)	14.8(100)
Fisheries	75.0	42.1	25.0	58.0	0.0	0.0	12(100)	11.2(100)
Crop development	72.7	29.0	27.3	71.0	0.0	0.0	11(100)	9.3(100)
Sericulture	94.1	82.3	5.9	17.7	0.0	0.0	17(100)	7(100)
Agriculture mechanization	100.0	100.0	0.0	0.0	0.0	0.0	9(100)	4.1(100)
Extension	90.0	44.3	10.0	55.7	0.0	0.0	10(100)	3.9(100)
Micro/minor irrigation	83.3	63.3	16.7	36.8	0.0	0.0	6(100)	3.3(100)
Dairy development	0.0	0.0	100.0	100.0	0.0	0.0	1(100)	1.3(100)
Marketing and PHM	100.0	100.0	0.0	0.0	0.0	0.0	3(100)	0.8(100)
Integrated pest management	100.0	100.0	0.0	0.0	0.0	0.0	3(100)	0.4(100)
Grand Total	**76.4**	**31.2**	**23.0**	**58.5**	**0.7**	**10.2**	**148(100)**	**144.7(100)**

Source: Same as table 1

Note: Exp: Expenditure; *indicates the number in absolute figures**;**

Table 7.7.3: Sector-Wise Classifiaction of Projects by their Status under RKVY during the 11th FYP

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not yet implemented	
	Number	Expenditure	Number	Expenditure	Number	Expenditure
NRM	8	2.3	34	54.1	0	0.0
Horticulture	1	1.3	12	15.1	2	0.6
Animal Husbandry	0	0.0	18	15.5	0	0.0
Innovative Programmes	0	0.0	1	14.8	0	0.0
Fisheries	0	0.0	12	11.1	0	0.0
Crop Development	0	0.0	11	9.3	2	0.0
Sericulture	0	0.0	17	6.9	0	0.0
Agriculture Mechanization	0	0.0	9	4.1	0	0.0
Extension	0	0.0	10	3.9	0	0.0
Micro/Minor Irrigation	0	0.0	5	2.5	1	0.8
Dairy Development	0	0.0	1	1.3	0	0.0
Marketing & PHM	0	0.0	3	0.8	0	0.0
Integrated Pest Management	0	0.0	3	0.3	0	0.0
Grand Total	**9**	**3.6**	**136**	**139.7**	**5**	**1.4**

Source: Same as table 1;

Table 7.7.4: Sector and Sub Sector wise Classification by Nature of Projects under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	
NRM	**14.2**	**85.8**	**14.2(8)**	**85.9(48.4)**	**100(56.4)**
Land reclamation	0.0	100.0	0(0)	100(22.7)	100(22.7)
Others (NRM)	40.5	59.5	40.6(8)	59.5(11.8)	100(19.8)
Water conservation structures and watershed dev	0.0	100.0	0(0)	100(14)	100(14)
Horticulture	**6.8**	**93.2**	**6.9(1.2)**	**93.2(15.9)**	**100(17.1)**
Development of horticulture farms/ facilities	0.0	100.0	0(0)	100(1.4)	100(1.4)
Fruits	0.0	100.0	0(0)	100(0.4)	100(0.4)
Nurseries and green houses	5.8	94.2	5.8(0.3)	94.3(4.1)	100(4.4)
Others (horticulture)	12.5	87.5	12.6(1)	87.5(6.4)	100(7.3)
Spices	0.0	100.0	0(0)	100(2)	100(2)
Vegetable	0.0	100.0	0(0)	100(1.8)	100(1.8)
Animal husbandry	**0.0**	**100.0**	**0(0)**	**100(15.6)**	**100(15.6)**
Animal health	0.0	100.0	0(0)	100(0.1)	100(0.1)
Breed improvement	0.0	100.0	0(0)	100(4.7)	100(4.7)
Extension and training	0.0	100.0	0(0)	100(0.9)	100(0.9)
Feed and fodder	0.0	100.0	0(0)	100(1.2)	100(1.2)
Infrastructure	0.0	100.0	0(0)	100(0.5)	100(0.5)
Others (animal husbandry)	0.0	100.0	0(0)	100(8.4)	100(8.4)
Innovative programmes	**0.0**	**100.0**	**0(0)**	**100(14.8)**	**100(14.8)**
Innovative programmes	0.0	100.0	0(0)	100(14.8)	100(14.8)
Fisheries	**0.0**	**100.0**	**0(0)**	**100(11.2)**	**100(11.2)**
Farmers fish ponds/ assistance including training	0.0	100.0	0(0)	100(2.9)	100(2.9)
Infrastructure/ ponds of fisheries/ dept/ agency	0.0	100.0	0(0)	100(0.6)	100(0.6)
Others (fisheries)	0.0	100.0	0(0)	100(7.7)	100(7.7)
Crop development	**0.0**	**100.0**	**0(0)**	**100(9.3)**	**100(9.3)**
Others (crop development)	0.0	100.0	0(0)	100(2)	100(2)
Paddy	0.0	100.0	0(0)	100(7.4)	100(7.4)
Sericulture	**0.0**	**100.0**	**0(0)**	**100(7)**	**100(7)**
Cocoon production	0.0	100.0	0(0)	100(1.4)	100(1.4)
Others (sericulture)	0.0	100.0	0(0)	100(5.7)	100(5.7)
Agriculture mechanization	**16.9**	**83.1**	**17(0.7)**	**83.1(3.4)**	**100(4.1)**
Machines and equipment assistance	21.1	78.9	21.1(0.7)	79(2.6)	100(3.3)
Others (agri. Mechanization)	0.0	100.0	0(0)	100(0.8)	100(0.8)
Extension	**0.0**	**100.0**	**0(0)**	**100(3.9)**	**100(3.9)**
Infrastructure	0.0	100.0	0(0)	100(0.8)	100(0.8)
Others (extension)	0.0	100.0	0(0)	100(0.2)	100(0.2)
Training/ study tour	0.0	100.0	0(0)	100(3.1)	100(3.1)
Micro/minor irrigation	**7.4**	**92.6**	**7.4(0.3)**	**92.7(3.1)**	**100(3.3)**
Farm ponds	7.6	92.4	7.7(0.3)	92.4(3)	100(3.2)
Sprinkler and drip irrigation	0.0	100.0	0(0)	100(0.2)	100(0.2)
Dairy development	**0.0**	**100.0**	**0(0)**	**100(1.3)**	**100(1.3)**

Others (dairy development)	0.0	100.0	0(0)	100(1.3)	100(1.3)
Marketing and PHM	**26.7**	**73.3**	**26.7(0.2)**	**73.4(0.6)**	**100(0.8)**
Godowns and wear houses	100.0	0.0	100(0.2)	0(0)	100(0.2)
Setting up/ strengthening of market infrastructure	0.0	100.0	0(0)	100(0.6)	100(0.6)
Integrated pest management	**0.0**	**100.0**	**0(0)**	**100(0.4)**	**100(0.4)**
Farmers field schools	0.0	100.0	0(0)	100(0.4)	100(0.4)
Grand total	**7.1**	**92.9**	**7.2(10.3)**	**92.9(134.4)**	**100(144.7)**

Source: Same as Table 1;
Note: Figures in the parentheses are the respective absolute expenditure values in crore;

Table 7.7.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

(Rs. crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	122	19	140	954	14.7	22.9	
2003-04*	141	23	163	1172	13.9	27.0	
2004-05	153	29	182	1198	15.2	28.9	
2005-06	178	19	197	1433	13.8	30.8	
2006-07	162	52	214	1409	15.2	33.3	
10th Plan	**756**	**141**	**897**	**6167**	**14.6**	**28.6**	
2007-08	186	89	274	1568	17.5	37.5	
2008-09	189	134	323	1596	20.2	39.3	
2009-10	202	128	330	1859	17.8	36.8	**5.8**
2010-11	383	137	520	2134	24.4	56.6	
2011-12*	401	107	508	2371	21.4	52.2	
11th Plan	**1361**	**595**	**1956**	**9528**	**20.3**	**44.5**	
% change over 10th plan	**80.1**	**321.9**	**118.1**	**54.5**			

Source: State Finances, RBI;
Note: * indicates Revised estimates, rest all accounts; Agriculture and allied activities includes Irrigation and flood control; 10th and 11th plan average value indicates average of the five years;
Budgetary expenditure is accounts only developmental expenditure; Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100;

Table 7.7.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. in crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	318.8 (34.9)	753.3 (30)	136.3
2	Soil and Water Conservation	42.6 (4.7)	126.4 (5.1)	197.2
3	Animal Husbandry	104.6 (11.5)	259.6 (10.4)	148.2
4	Dairy Development	6.9 (0.8)	7 (0.3)	0.0
5	Fisheries	20.4 (2.3)	73.2 (3)	258.8
6	Forestry and Wild Life	158.4 (17.4)	303.4 (12.1)	91.6
7	Plantations	0 (0)	0 (0)	0.0
8	Food Storage and Warehousing	115.4 (12.7)	584.7 (23.3)	406.7
9	Agricultural Research and Education	0.6 (0.1)	15 (0.6)	2776.9
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	33 (3.7)	54.3 (2.2)	64.5
12	Other Agricultural Programmes	19.7 (2.2)	21.9 (0.9)	0.0
13	Major and Medium Irrigation	0.1 (0.1)	0.1 (0.1)	0.0
14	Minor Irrigation	20.1 (2.2)	32.6 (1.3)	6.5
15	Flood Control and Drainage	0 (0)	0 (0)	0.0
16	Others	74.6 (8.2)	282.5 (11.3)	56.5
	Total	**914.7 (100)**	**2513.4 (100)**	**174.8**

Source: State Finances, RBI;

Note: *The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others

Figures in the parenthesis are percentage to the respective total;

Table 7.7.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	31.2	15.7	55.7
2000-01	27.5	16.1	57.8
2001-02	26.0	16.8	58.0
2002-03	24.5	17.5	58.4
2003-04	23.5	17.9	58.7
2004-05	23.5	16.6	59.9
2005-06	22.3	19.9	57.7
2006-07	21.4	19.2	59.4
2007-08	22.0	19.6	58.5
2008-09	21.7	20.2	58.1
2009-10	21.1	18.5	60.3
2010-11	20.2	20.1	59.7
2011-12	19.4	20.1	60.4

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.7.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	4.0	10.3	1	1	100.0	66536
2003-04	-1.3	3.2	1	1	100.0	61628
2004-05	4.4	4.2	1	1	100.0	64974
2005-06	1.6	7.0	1	1	100.0	65360
2006-07	0.3	4.8	1	1	100.0	70579
10th Plan Average	**1.8**	**5.9**	**1**	**1**	**100.0**	**65816**
2007-08	14.1	11.0	1	1	100.0	76310
2008-09	12.2	13.3	1	1	100.0	86524
2009-10	9.2	12.4	1	1	100.0	72957
2010-11	2.4	7.2	1	1	102.3	70666
2011-12	6.0	10.1	1	1	102.3	74905
11th Plan Average	**8.8**	**10.8**	**1**	**1**	**100.9**	**76273**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05);
10th and 11th plan value indicates average of the five years;
* Land productivity = agricultural GSDP/ha of NSA;

Table 7.7.9: Trend in Inputs Use in Mizoram

Year	Net irrigated area (lakh ha)	Gross irrigated area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	% gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	0.2	0.2	17.4	106.3	18.5	20.5
2003-04	0.2	0.2	16.3	112.5	18.4	16.9
2004-05	0.2	0.2	16.5	118.8	19.6	15.9
2005-06	0.2	0.2	16.3	118.8	19.4	25.5
2006-07	0.1	0.1	12.1	100.0	12.1	38.1
10th Plan Average	**0.2**	**0.2**	**15.7**	**111.3**	**17.6**	**23.4**
2007-08	0.1	0.1	9.4	111.1	10.4	40.3
2008-09	0.1	0.1	11.6	100.0	11.6	45.3
2009-10	0.1	0.1	8.1	100.0	8.1	57.0
2010-11	0.1	0.1	9.2	100.0	9.0	45.5
2011-12	0.1	0.1	9.2	100.0	9.0	9.7
11th Plan Average	**0.1**	**0.1**	**9.5**	**102.2**	**9.6**	**39.6**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of the five years;
***** indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 7.7.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	-1.0	-15.2	-14.9	-6.0	32.8	42.1
Maize	12.0	8.0	-2.5	-6.0	227.1	172.1
Coarse Cereals	12.0	8.0	-2.5	-6.0	227.1	172.1
Total Cereals	0.4	-11.6	-12.6	-6.4	36.5	43.8
Total Pulses	21.4	12.6	-1.2	-4.8	8.3	16.7
Total Food grains	1.2	-10.6	-12.3	-6.3	31.4	39.3
Sesamum	-14.2	-1.2	18.3	-6.8	27.9	15.3
Rapeseed & Mustard	-22.8	-25.6	-5.7	58.0	29.3	-9.7
Soyabean	13.0	6.8	5.3	-7.5	33.1	64.4
Total Oilseeds	-10.9	-5.5	6.2	-8.9	28.5	39.4
Sugarcane	204.8	-6.7	88.4	3.4	295.7	190.8

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.7.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	7.1	12.7	5.2	3.2
2003-04	0.0	3.6	1.0	4.0
2004-05	6.7	0.0	3.3	8.9
2005-06	-6.3	0.0	2.8	1.9
2006-07	6.7	11.1	6.7	0.3
10th plan	**2.8**	**5.5**	**3.8**	**3.6**
2007-08	6.3	10.0	15.8	0.0
2008-09	0.0	18.2	2.0	-23.1
2009-10	-35.3	-23.1	-9.7	12.5
2010-11	0.0	0.0	4.3	-10.8
2011-12	NA	NA	NA	1.0
11th plan*	**-7.3**	**1.3**	**3.1**	**-4.1**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years;
NA: data not available;

7.8 NAGALAND

7.8.1. Background Information

Nagaland is a State of North-Eastern Region (NER) of India, bordering 3 Indian States– Arunachal Pradesh in the north, Assam in the west and Manipur in the south, and one international boundary– Myanmar in the east. The State of Nagaland is the 25th largest State in the country, with a total geographical area of 16, 579 sq. km. (106,195 sq km), accounts for 0.50 per cent of the country's total geographical area. According to 2011 population census of India, the total population of the State is 0.20 crore. The economy of Nagaland is basically an agriculture base. About 21.83 per cent of the State's total geographical area is identified as Net Sown Area (NSA) and 27.26 per cent as Gross Cropped Area (GCA) in 2010-11. The cropping intensity of the State is estimated at around 125 per cent. Despite the State has got rich potentials for development of the sectors like, horticulture, animal husbandry and natural resources which includes forest products, these sectors have not been fully exploited basically due to weak physical infrastructure, poor marketing facilities and other weak institutional issues including land regulation/institution.

Nevertheless, agriculture sector continues to support more than 70 per cent population of the State directly or indirectly, providing employment of more than 11.76 per cent of the total workforce of the State, as per 2011 population census. Over the years, growth trend of GSDP and contribution of agriculture to GSDP and other agriculture indicators were found to be increasing very negligibly or nearly stagnant in the State. For instance, the contribution of agriculture and its allied activities in the State economy was 28.4 per cent in 1999-00 and declined negligibly to 27.5 per cent in 2012-13 (refer Table 7.8.7). Similarly, the GSDP growth was found to be fluctuating during the 10th FYP, and the cropping intensity was also almost stagnant. The situation was more or less same in the all India level during these periods and even worse in the 8th and 9th plan. With an apprehension of further slowing the growth of agriculture and its allied sector, the RKVY scheme was implemented in 2005-06 in the entire country by the Government of India. The scheme (RKVY) aimed at achieving 4 per cent annual growth in the agriculture sector during 11th plan (2007-12). Understandably, the same holds true in the State of Nagaland as well.

As the RKVY scheme envisaged for the development of agriculture sector in the country and achieving 4 per cent annual growth of the sector during 11th Five Year Plan (11th FYP), the present study is the modest attempt to evaluate the impact of RKVY scheme in Nagaland during 11th FYP. However, the greater issue remains in this context is that the agriculture and its allied sector are directly or indirectly supported by multiple agencies and schemes. In other words, the development of agriculture has been a synergistic and cumulative effect of various

ongoing schemes and the effort put forth by many other stakeholders. This made a challenging task while evaluating impact of RKVY scheme in the State, and also, evaluation of the scheme in isolation is not an easy task.

Based on the information available on the official website of RKVY and Directorate of Economics and Statistics, government of India, an effort has been made to evaluate the outcome and output of RKVY scheme in Nagaland during the 11th FYP. Also, a comparative analysis was made between 10th FYP and 11th FYP, in terms of output and outcome of agriculture in the State. In nutshell, in this study, impact evaluation of RKVY will be carried out as per the following broad parameters given below:

1. The impact evaluation of RKVY scheme would be made for the period since its inception, covering the entire 11th Five Year Plan (EFYP).
2. A comparison of the scheme's performance would be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08. It includes State budgetary components on agriculture after RKVY.
3. Impact assessment would be made through the increase in area, production and productivity of major crops as well as change made in the physical infrastructures of the sector during the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund under the scheme in the State would be taken as one of the main parameters of evaluation.

7.8.2. Distribution of Allocation and Expenditure across the Sectors

This section focuses on distribution of allocated fund and expenditure of RKVY projects across the sectors. In Nagaland, altogether 18 sectors were sanctioned under RKVY scheme during 11th FYP and out of these, only 7 sectors have been analyzed thoroughly under this study. It is because of the fact that these 7 sectors incurred lion's share of the total allocated fund during the period in the State and detail analysis was made for these selected sectors. The 7 sectors are animal husbandry, crop development, horticulture, natural resource management, marketing and post harvest management, fisheries and agricultural mechanization. These sectors (7 sectors) incurred 83.74 per cent of the total fund sanctioned under the scheme during 11th FYP and remaining 11 minor sectors utilized only 16.26 per cent of the total fund (Table 7.8.1). Further, in the State, of the sectors, crop development sector registered the highest expenditure per project, accounted for Rs 2.4 crores and lowest was registered by the research (Agri. /Horti. /Animal husbandry/ etc.) sector with Rs 0.12crores, which is clearly represented in Figure 7.8.

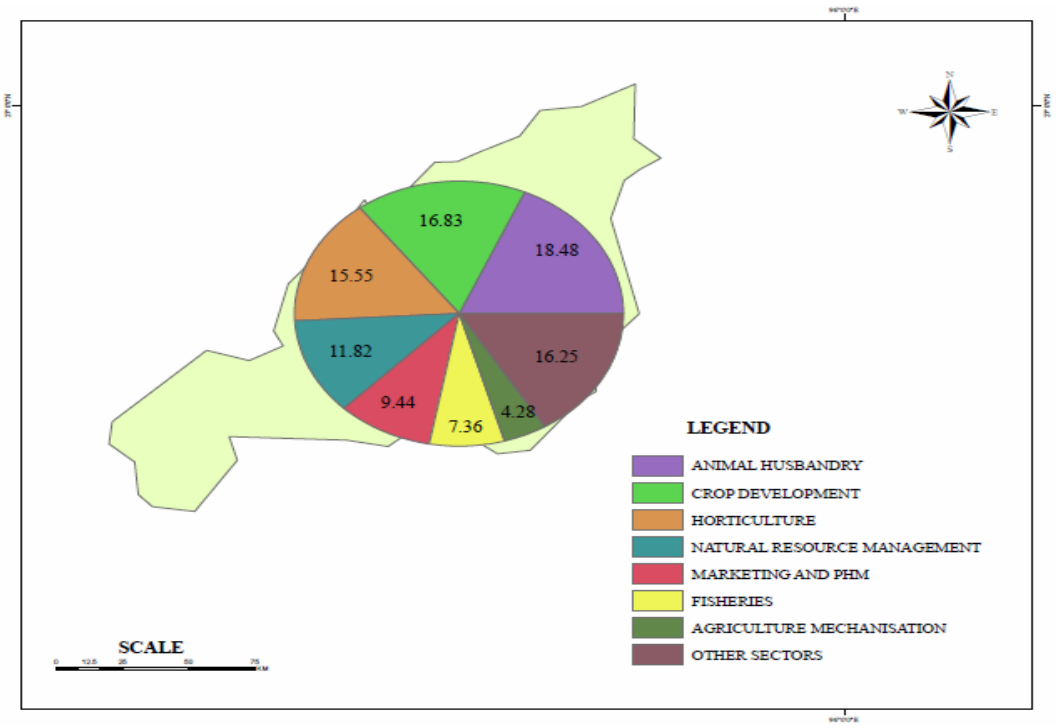

Figure 7.8: Share of Expenditure across Sectors

Under RKVY scheme, during 11th FYP, 122 projects have been sanctioned in the State. But, only 82 projects could be initiated during the period. Fisher sector could initiate the largest number of project, estimated at 11 numbers out of the 82. It was followed by horticulture and NRM with 10 numbers and 9 numbers respectively during the period. In term of expenditure, altogether Rs 99.4 crore has been spent out of the total 165.9 crore allocation made under RKVY scheme in 11th FYP in Nagaland. It means, about 60 per cent of the sanctioned fund has been utilised during the period. Of the sectors, animal husbandry sector attracted the largest share of the expenditure and spent Rs 18.4 crore by this sector. It was followed by crop development with Rs 16.7 crore, horticulture with 15.4 crore and natural resources with 11.7 crore and so on. The least funded sectors were the research (agri/horti/animal husbandry etc.) with Rs 0.12, seed with Rs 0.60 and integrated pest management with Rs 0.71 crores. Though the cooperatives and cooperation sector was allocated with Rs 1.50 crore under the scheme, it could not be initiated and no expenditure was made under this sector during the 11th FYP in Nagaland (Table 7.8.1).

7.8.3. Sector-Wise Size of the Projects based on the Expenditure

To understand the magnitude of the projects, base on the expenditure, the entire projects taken up under the RKVY have been classified into four slabs in the State. They are: 1) up to 1 crore; 2) 1-10 crore; 3) 10-25 crore and 4) above 25 crore. Largest share of the projects come

under the lowest slab (up to 1 crore), estimated 47 per cent of the total number of projects. However, the hardly 5.5 per cent of the total expenditure was made for this category. But only 3.2 per cent of the total projects came under the largest slab (above 25 crore) and spent the largest expenditure share, estimated at 38.8 per cent of the total (Table 7.8.2).

7.8.4. Sector wise Expenditure according to Status

In term of status of the projects (Table 7.8.3), altogether 48.4 per cent of the total projects (59 numbers of projects) has been completed or substantially completed during the 11th FYP, and spent 55.5 per cent of the total expenditure was spent for these projects (Rs 55.2 crores). On the other side, 63 numbers of projects (51.6 per cent of the total projects) were found to be continuing or ongoing and spent Rs 44.1 crore (44.5 per cent of the total fund) was spent on these projects during the 11th FYP. Most of the completed projects were covered under the fishery and animal husbandry sectors. And, most of the on-going projects have been fallen under the NRM, horticulture and marketing sectors.

7.8.5. Sector and Sub Sector Wise distribution of Projects by Nature

Under the RKVY, entire projects were also classified into two natures- infrastructure and non-infrastructure projects. Unlike other States, all the projects of RKVY scheme in Nagaland have been carried out under the umbrella of normal project. Also, around 93 per cent of the expenditure was spent on the non-infrastructure sectors, albeit it is identified as one of the weakest States in term of physical infrastructure. Most of the non-infrastructure projects have come under the sectors of animal husbandry, crop development, horticulture and NRM (Table 7.8.4).

7.8.6. Impact of the RKVY Projects on Agriculture

Even if we do not estimate exactly, a rough impact of RKVY scheme during the 11th FYP has been given in Nagaland in this section. During the 11th FYP, the share of RKVY to State agriculture expenditure has been 4.7 per cent in Nagaland. Fortunately, the growth of total agriculture expenditure to State budget has increased from 12 per cent in 10th FYP to 15.1 per cent in 11th FYP. Similarly, the share of agriculture expenditure to agriculture GSDP has also increased from 9.3 per cent in 10th FYP to 14.4 per cent in 11th FYP (Table 7.8.5). In term of sector-wise budgetary increment, the overall change in the State budgetary expenditure on agriculture and its allied sectors was about 129 per cent in 11th FYP compared to 10th FYP. Of the major sectors, larger change was found in fishery and crop development sectors. When we club the entire projects together, the largest budgetary change was found under minor irrigation sector and it was followed by agriculture research sector (Table 7.8.6).

When it comes to the status of agriculture sector, the growth in agriculture GSDP has gone down in 11th FYP. Similarly, growth in GSDP and NSA has also gone down during the 11th FYP. However, there is slight improvement in terms of cropping intensity and land productivity during the 11th FYP in Nagaland (Table 7.8.8). In the case of input used in agriculture, fertiliser consumption rate has increased slightly. Also, net irrigated area has increased from 0.7 lakh hectare in 10th FYP to 0.8 lakh hectare in 11th FYP. Similarly, share of net irrigated to NSA has also slightly increased from 21.1 per cent in 10th plan to 22.9 per cent in 11th FYP. However, the cropping intensity has gone down slightly during the 11th FYP (Table 7.8.9).

In terms of annual average growth rate of area, production and yield of the major crops in 11th FYP, Table 7.8.10 shows the growth trend of major and important crops of Nagaland. Rice being the staple food of the State, improvement of this crop has been very significant and has increased from 1.2 per cent in 10th FYP to 8.6 per cent in 11th FYP. The trend has been found for the total food grains and total cereals as well. Milk and fish production level has also increased significantly during the period. However, the egg and meat production were found to be declining slightly (Table 7.8.11).

From the Appendix Table 7.8 we see the expected output and outcome of the major sectors of RKVY scheme in Nagaland. One should remember that complete information of RKVY scheme has not been made available in the public domain. Therefore, some approximation was bound to be made and cross-check of the output and outcome of the scheme was done through Directorate of Economic and Statistics data and other government information. The output and outcome of the animal husbandry, NRM and crop development has been positive. Albeit, there has been limited information, the expected outcome of the almost all the sectors was found to be increasing during the 11th FYP.

7.8.7. Concluding Remarks

In the Nagaland State, annual average growth of agriculture has slightly moved down from 6 per cent to 4 per cent in 11th FYP over the 10th FYP. Though it is very difficult to single out the impact of RKVY scheme, one thing was sure that the agriculture growth is still above the national level and has not moved below the RKVY target growth rate of 4 per cent. It is also clear that the input sector has also not increased much in 11th FYP compared to 10th FYP. Though it is not given immediate result of RKVY, a foundation work has been done by RKVY scheme in agriculture sector in the State.

In Nagaland, the RKVY project that comprises of 18 sectors and 24 sub-sectors was initiated along with the nation. Out of the 18 sectors, 7 sectors absorbed 83.74 per cent of the total expenditure. Among the major sectors, the animal husbandry utilized the major funds. It was

followed by the crop development, horticulture, natural resource management, marketing and post harvest management, fisheries and agricultural mechanization. In the State, to develop the infrastructure assets in the agriculture and its allied sectors, RKVY has allocated a share of 7.24 per cent of the total RKVY fund during the 11th FYP. These sectors might have played a crucial role for infrastructure development of agriculture and its allied activities in the State. As it is identified as one of the weakest States in term of physical infrastructure and marketing sectors, more shares of RKVY fund should have been allocated under these sectors. Also, as per the guidelines of the scheme, the State was given autonomy and flexibility for interchanging the account heads as per requirement and priority. But, this was not happened for the important sectors of the State like, natural resource, horticulture, animal husbandry, micro/minor irrigation sectors.

TABLES

Table 7.8.1: Sector-Wise Allocation and Expenditure under RKVY during 11th FYP

(Rs. Crore)

Sectors	No. of project*	Allocation^	Expenditure^	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
Animal Husbandry	11 (16)	26.6 (16.1)	18.4 (18.5)	0.7	1.7
Crop Development	7 (8)	17.7 (10.7)	16.7 (16.9)	0.9	2.4
Horticulture	10 (16)	23.8 (14.4)	15.4 (15.6)	0.7	1.5
NRM	9 (14)	24.2 (14.7)	11.7 (11.9)	0.5	1.3
Marketing & PHM	6 (8)	10.5 (6.4)	9.4 (9.5)	0.9	1.6
Fisheries	11 (18)	19.7 (12)	7.3 (7.4)	0.4	0.7
Agriculture Mechanization	4 (5)	6.5 (4)	4.3 (4.3)	0.7	1.1
Non Farm Activities	5 (7)	7.5 (4.6)	4.2 (4.2)	0.6	0.8
Organic Farming / Bio Fertilizer	4 (5)	4 (2.5)	4 (4.1)	1.0	1.0
Innovative Programmes	2 (3)	4.9 (3)	1.9 (1.9)	0.4	0.9
Extension	3 (4)	3.1 (1.9)	1.6 (1.6)	0.5	0.5
Fertilizers & INM	3 (4)	3.2 (2)	1.2 (1.3)	0.4	0.4
Sericulture	1 (4)	3.1 (1.9)	1.1 (1.2)	0.4	1.1
Micro/Minor Irrigation	1 (3)	7.2 (4.4)	0.8 (0.9)	0.1	0.8
Integrated Pest Management	3 (4)	1.7 (1.1)	0.7 (0.8)	0.4	0.2
Seed	1 (1)	0.6 (0.4)	0.6 (0.7)	1.0	0.6
Research	1 (1)	0.1 (0.1)	0.1 (0.2)	1.0	0.1
Cooperatives and Cooperation	0 (1)	1.5 (1)	0 (0)	0.0	0.0
Grand Total	**82 (122)**	**165.9 (100)**	**99.4 (100)**	**0.6**	**1.2**

Source: www.rkvy.nic.in, April (2013)

Note: * Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY;

^Figures in the parenthesis in column 3 and 4 indicate the per centage to the respective total;

** The ratio <1 indicates the allocation is not fully utilised, the ratio=1 indicates the allocation is exactly equal to the expenditure and the ratio =0 indicates the allocation has not spent yet;

PHM: Post Harvest Management; INM: Integrated Nutrient Management; NRM: Natural Resource Management;

Table 7.8.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	Up to 1 crore		Above 1 crore to 10 crore		Above 10 crore to 25 crore		Above 25 crores		Grand Total*	
	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.
Crop development	21.1	0.9	57.9	23.1	15.8	24.0	5.3	52.0	38(100)	329.6(100)
Agriculture mechanisation	7.7	0.1	30.8	11.5	30.8	24.5	30.8	64.0	13(100)	245.7(100)
Animal husbandry	46.7	6.5	40.0	42.5	13.3	51.0	0.0	0.0	15(100)	59.8(100)
Marketing and PHM	72.7	21.8	22.7	15.1	0.0	0.0	4.6	63.2	22(100)	49.1(100)
NRM	10.0	1.0	80.0	69.5	10.0	29.5	0.0	0.0	10(100)	43.2(100)
Extension	53.0	9.1	41.2	31.2	0.0	0.0	5.9	59.8	17(100)	41.9(100)
Seed	28.6	7.5	71.4	92.6	0.0	0.0	0.0	0.0	21(100)	35.8(100)
Research	75.0	18.6	25.0	81.4	0.0	0.0	0.0	0.0	24(100)	29(100)
Horticulture	64.3	22.9	35.7	77.1	0.0	0.0	0.0	0.0	28(100)	28.6(100)
Dairy development	20.0	5.6	80.0	94.4	0.0	0.0	0.0	0.0	10(100)	27.4(100)
Cooperatives and cooperation	33.3	1.0	33.3	22.3	33.3	76.7	0.0	0.0	3(100)	25.4(100)
Micro/minor irrigation	62.5	15.0	25.0	38.3	12.5	46.7	0.0	0.0	8(100)	22.6(100)
Organic farming / bio fertiliser	61.5	22.4	38.5	77.7	0.0	0.0	0.0	0.0	13(100)	18.4(100)
Fisheries	66.7	26.1	33.3	73.9	0.0	0.0	0.0	0.0	12(100)	16.7(100)
Fertilisers and INM	33.3	7.9	66.7	92.1	0.0	0.0	0.0	0.0	6(100)	10.5(100)
Integrated pest management	66.7	36.0	33.3	64.0	0.0	0.0	0.0	0.0	6(100)	6.1(100)
Non farm activities	50.0	12.5	50.0	87.6	0.0	0.0	0.0	0.0	2(100)	2.1(100)
Innovative programmes/ training/ capacity building/ others	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	3(100)	0.9(100)
Grand Total	**47.0**	**5.5**	**43.8**	**34.4**	**6.0**	**21.4**	**3.2**	**38.8**	**251(100)**	**991.9(100)**

Source: Same as table 1;

Note: *Number in absolute figures; Figures in the parenthesis are per centage of accompanying absolute values;

Table 7.8.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed	
	Number	Expenditure	Number	Expenditure
Animal Husbandry	4	0	12	18.4
Crop Development	0	0	8	16.7
Horticulture	8	9.6	8	5.8
NRM	14	11.7	0	0.0
Marketing & PHM	8	9.4	0	0.0
Fisheries	1	0.0	17	7.3
Agriculture Mechanization	0	0.0	5	4.3
Non Farm Activities	7	4.2	0	0.0
Organic Farming / Bio Fertilizer	5	4.0	0	0.0
Innovative Programmes	3	1.9	0	0.0
Extension	0	0.0	4	1.6
Fertilizers & INM	0	0.0	4	1.2
Sericulture	4	1.1	0	0
Micro/Minor Irrigation	3	0.8	0	0
Integrated Pest Management	4	0.7	0	0
Seed	1	0.6	0	0
Research	1	0.1	0	0
Cooperatives and Cooperation			1	0.0
Grand Total	**63**	**44.1**	**59**	**55.2**

Source: Same as Table 1

Table 7.8.4: Sector and Sub Sector wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		Total		Grand Total
	Infra structure	Non infrastructure	Infra structure	Non infrastructure	
Animal husbandry	**0.0**	**100.0**	**0(0)**	**100(18.4)**	**100(18.4)**
Animal health	0.0	100.0	0(0)	100(5.5)	100(5.5)
Breed improvement	0.0	100.0	0(0)	100(0.9)	100(0.9)
Feed and fodder	0.0	100.0	0(0)	100(1.3)	100(1.3)
Others (animal husbandry)	0.0	100.0	0(0)	100(9.9)	100(9.9)
Poultry	0.0	100.0	0(0)	100(1)	100(1)
Crop development	**0.0**	**100.0**	**0(0)**	**100(16.8)**	**100(16.8)**
Coarse cereals	0.0	100.0	0(0)	100(10.1)	100(10.1)
Oilseeds and pulses	0.0	100.0	0(0)	100(3.6)	100(3.6)
Others (crop development)	0.0	100.0	0(0)	100(3.1)	100(3.1)
Horticulture	**0.0**	**100.0**	**0(0)**	**100(15.5)**	**100(15.5)**
Development of horticulture farms/ facilities	0.0	100.0	0(0)	100(5.7)	100(5.7)
Fruits	0.0	100.0	0(0)	100(3.3)	100(3.3)
Mushroom	0.0	100.0	0(0)	100(0.2)	100(0.2)
Nurseries and green houses	0.0	100.0	0(0)	100(1.1)	100(1.1)
Vegetable	0.0	100.0	0(0)	100(5.3)	100(5.3)
NRM	**0.0**	**100.0**	**0(0)**	**100(11.8)**	**100(11.8)**
Water conservation structures and watershed dev	0.0	100.0	0(0)	100(11.8)	100(11.8)
Marketing and PHM	**44.0**	**56.0**	**44(4.2)**	**56.1(5.3)**	**100(9.4)**
Setting up/ strengthening of market infrastructure	44.0	56.0	44(4.2)	56.1(5.3)	100(9.4)
Fisheries	**0.0**	**100.0**	**0(0)**	**100(7.4)**	**100(7.4)**
Farmers fish ponds/ assistance including training	0.0	100.0	0(0)	100(4.6)	100(4.6)
Others (fisheries)	0.0	100.0	0(0)	100(2.8)	100(2.8)
Agriculture mechanization	**72.0**	**28.0**	**72(3.1)**	**28(1.2)**	**100(4.3)**
Machines and equipment assistance	72.0	28.0	72(3.1)	28(1.2)	100(4.3)
Non farm activities	**0.0**	**100.0**	**0(0)**	**100(4.2)**	**100(4.2)**
Others (NFA)	0.0	100.0	0(0)	100(4.2)	100(4.2)
Organic farming / bio fertilizer	**0.0**	**100.0**	**0(0)**	**100(4.1)**	**100(4.1)**
Promotion of bio fertilizer	0.0	100.0	0(0)	100(1.7)	100(1.7)
Promotion of organic farming	0.0	100.0	0(0)	100(2.4)	100(2.4)
Innovative programmes	**0.0**	**100.0**	**0(0)**	**100(1.9)**	**100(1.9)**
Others (innovative programmes)	0.0	100.0	0(0)	100(1.9)	100(1.9)
Extension	**0.0**	**100.0**	**0(0)**	**100(1.6)**	**100(1.6)**
New approaches to extension	0.0	100.0	0(0)	100(1.6)	100(1.6)
Fertilizers and INM	**0.0**	**100.0**	**0(0)**	**100(1.3)**	**100(1.3)**
Fertilizer labs	0.0	100.0	0(0)	100(0.7)	100(0.7)
Other labs	0.0	100.0	0(0)	100(0.6)	100(0.6)
Sericulture	**0.0**	**100.0**	**0(0)**	**100(1.1)**	**100(1.1)**
Others (sericulture)	0.0	100.0	0(0)	100(1.1)	100(1.1)

Micro/minor irrigation	**0.0**	**100.0**	**0(0)**	**100(0.8)**	**100(0.8)**
Farm ponds	0.0	100.0	0(0)	100(0.8)	100(0.8)
Integrated pest management	**0.0**	**100.0**	**0(0)**	**100(0.8)**	**100(0.8)**
IPM labs	0.0	100.0	0(0)	100(0.2)	100(0.2)
Promotion of IPM	0.0	100.0	0(0)	100(0.6)	100(0.6)
Seed	**0.0**	**100.0**	**0(0)**	**100(0.6)**	**100(0.6)**
Seed farm	0.0	100.0	0(0)	100(0.6)	100(0.6)
Research	**0.0**	**100.0**	**0(0)**	**100(0.2)**	**100(0.2)**
Agri research project	0.0	100.0	0(0)	100(0.2)	100(0.2)
Grand total	**7.2**	**92.8**	**7.3(7.2)**	**92.8(92.2)**	**100(99.4)**

Source: Same as Table 1;
Note: Figures in the parentheses are the respective absolute expenditure values in crore;
IPM: Integrated Pest Management; NFA: Non Farm Activities; Figures in the parentheses are the respective absolute values;

Table 7.8.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. Expenditure to State budget	% agri. Expenditure to agri. GSDP	%of RKVY expenditure to agri. expenditure
2002-03	121	19	140	1072	13.1	7.9	
2003-04*	134	21	155	1306	11.9	8.3	
2004-05	137	17	154	2323	6.6	7.6	
2005-06	184	41	225	1540	14.6	10.8	
2006-07	206	39	245	1764	13.9	11.7	
10th Plan average	**782**	**137**	**919**	**8006**	**12.0**	**9.3**	
2007-08	247	38	286	1902	15.0	13.5	
2008-09	231	44	275	1883	14.6	12.1	
2009-10	270	25	295	1981	14.9	12.6	
2010-11	346	38	384	2564	15.0	15.6	**4.7**
2011-12*	407	69	476	3020	15.8	18.4	
11th Plan average	**1503**	**214**	**1717**	**11350**	**15.1**	**14.4**	
% change over 10th plan	**92.1**	**57.0**	**86.9**	**41.8**			

Source: State Finances, RBI;
Note: * indicates Revised estimates and Agriculture and allied activities includes Irrigation and flood control; Budgetary expenditure accounts only developmental expenditure;
Per centage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100; 10th and 11th plan value indicates average of the five years;

Table 7.8.6: Composition of State Budgetary Expenditure on Agriculture and its Allied Sector

(Rs. crore)

Particulars	10th Plan	11th Plan	% change over TFYP
Crop Husbandry	217.5 (23.5)	557.2 (26.4)	156.2
Soil and Water Conservation	105.6 (11.4)	187.6 (8.9)	77.7
Animal Husbandry	141.4 (15.3)	260.1 (12.3)	84.0
Dairy Development	6.5 (0.8)	10.2 (0.5)	0.0
Fisheries	40.5 (4.4)	86.8 (4.2)	114.7
Forestry and Wild Life	149.1 (16.2)	292.9 (13.9)	96.4
Plantations	0 (0)	0 (0)	0.0
Food Storage and Warehousing	53.5 (5.8)	72.6 (3.5)	35.8
Agricultural Research and Education	21.9 (2.4)	62.5 (3)	186.3
Agricultural Finance Institutions	0 (0)	0 (0)	0.0
Co-operation	65.5 (7.1)	85.7 (4.1)	30.8
Other Agricultural Programmes	0 (0)	0 (0)	0.0
Major and Medium Irrigation	0 (0)	0 (0)	0.0
Minor Irrigation	115.7 (12.5)	480.8 (22.8)	315.6
Flood Control and Drainage	0 (0)	0 (0)	0.0
Others	9.1 (1)	19.7 (1)	116.2
Total	**925.9** **(100)**	**2115.8** **(100)**	**128.5**

Source: State Finances, RBI;

Note: *The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control is categorized under others; Figures in the parenthesis are per centage to the respective total;

Table 7.8.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	28.4	12.1	59.7
2000-01	31.8	11.9	56.4
2001-02	32.2	12.5	55.4
2002-03	33.2	13.3	53.5
2003-04	33.3	13.3	53.3
2004-05	34.8	12.9	52.4
2005-06	32.3	13.7	54.0
2006-07	30.3	14.6	55.1
2007-08	28.4	14.9	56.7
2008-09	28.7	16.2	55.1
2009-10	27.6	16.3	56.0
2010-11	27.7	16.2	56.1
2011-12	27.6	16.7	55.7
2012-13	27.5	17.1	55.4

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.8.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	12.7	9.5	3	4	114.2	54439
2003-04	5.5	5.0	3	4	121.3	61017
2004-05	9.0	4.6	3	4	123.0	65667
2005-06	2.6	10.2	3	4	125.2	67344
2006-07	1.0	7.8	3	4	126.1	65252
10th Plan Average	**6.1**	**7.4**	**3**	**4**	**122.0**	**62744**
2007-08	0.6	7.3	3	4	126.6	66900
2008-09	7.5	6.3	3	4	127.2	71935
2009-10	2.9	6.9	4	5	134.6	64786
2010-11	5.6	5.5	4	5	124.9	68250
2011-12	4.7	5.1	4	5	124.9	71453
11th Plan Average	**4.3**	**6.2**	**3**	**4**	**127.6**	**68665**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05);
10th and 11th plan value indicates average of the five years;
* Land productivity = agricultural GSDP/ha of NSA;

Table 7.8.9: Trend in Inputs Use in Nagaland

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	0.7	0.8	20.1	124.6	21.9	1.8
2003-04	0.7	1.0	22.0	155.2	28.1	1.8
2004-05	0.7	1.0	21.4	157.6	27.4	1.5
2005-06	0.7	1.1	21.7	158.2	27.4	1.5
2006-07	0.7	1.1	20.2	163.1	26.1	0.0
10th Plan Average	**0.7**	**1.0**	**21.1**	**151.7**	**26.2**	**1.3**
2007-08	0.8	1.2	24.1	152.6	29.0	2.1
2008-09	0.8	0.8	24.4	106.5	20.4	2.3
2009-10	0.7	0.9	20.2	116.4	17.5	2.4
2010-11	0.8	0.9	22.9	110.8	20.4	2.9
2011-12	0.8	0.9	22.9	110.8	20.4	3.0
11th Plan Average	**0.8**	**0.9**	**22.9**	**119.5**	**21.5**	**2.5**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of the five years;
***** indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 7.8.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	1.1	2.2	1.2	2.0	11.5	8.6
Wheat	-4.0	-24.2	-17.4	18.6	38.4	17.3
Maize	10.4	15.5	5.7	1.2	10.8	-10.1
Small Millets	26.9	42.8	23.2	-16.6	10.9	27.4
Coarse Cereals	10.2	14.4	4.8	-2.5	10.2	12.9
Total Cereals	3.3	4.0	0.9	0.6	10.9	9.7
Gram	-8.7	3.0	6.7	19.8	17.3	-5.5
Arhar/Tur	5.5	17.8	12.4	-16.1	-19.0	-5.2
Other Pulses	3.8	13.5	11.9	-21.4	-21.7	-20.6
Total Pulses	3.4	13.2	10.2	-3.8	-4.6	-1.2
Total Food grains	3.0	4.3	1.6	0.0	9.4	8.9
Groundnut	82.8	79.9	-2.5	-4.6	-2.4	-18.6
Sesamum	181.3	217.7	-1.1	-4.9	-4.8	-20.8
Rapeseed & Mustard	13.8	8.6	-4.9	12.7	12.4	-12.7
Linseed	2.5	10.4	7.1	8.4	7.6	-15.0
Sunflower	20.1	38.1	-0.4	108.4	153.1	-21.2
Soyabean	8.9	7.7	-1.9	-0.5	2.0	3.3
Total Oilseeds	7.6	5.7	-2.8	3.4	2.2	5.0
Sugarcane	41.2	38.2	0.1	-1.4	-3.0	0.6

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.8.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.8	34.4	26.1	5.8
2003-04	8.6	-0.7	0.1	1.1
2004-05	9.5	134.6	10.7	-11.9
2005-06	7.2	3.3	15.0	12.2
2006-07	-9.5	0.0	0.0	5.5
10th plan average	**3.5**	**34.3**	**10.4**	**2.5**
2007-08	-32.8	-65.1	-7.6	0.0
2008-09	17.8	186.4	3.7	6.6
2009-10	47.2	4.8	0.2	2.9
2010-11	-2.6	-1.5	-3.8	3.6
2011-12	NA	NA	NA	3.8
11th plan average	**7.4**	**31.1**	**-1.9**	**3.4**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years;
NA: data not available;

7.9 ODISHA

7.9.1. Background Information

Odisha is one of the culturally rich States on the Eastern[16] part of India. It is bounded by four Indian States, viz. West Bengal on the north-east, Jharkhand on the north, Madhya Pradesh on the west, Andhra Pradesh on the south, and the Bay of Bengal on the east. The State has an area of 155,820 km^2 and over 76 per cent of the State's people are dependent on agriculture and hence Odisha's economy is called an agrarian economy. About 30.05 per cent of the State's Total Geographical Area (TGA) is identified as Net Sown Area (NSA) and 2.87 per cent as Gross Cropped Area (GCA) in 2010-11. The cropping intensity of the State is estimated at around 116 per cent, meaning that farmers have grown less than 2 crops in a year (DES, 2011-12).

According to population census 2011, the total population of Odisha is 41,974,218 persons, became the 9th highest populated States in the country. Of which, male and female are 21,212,136 and 20,762,082 persons respectively. Out of the total population, around 83.31 per cent lives in the rural areas, accounted for a total of 34,970,562 persons. Like many other agrarian States in the country, Odisha was also facing down fall of agriculture in the 9th and 10th Five Year Plan (TFYP). Therefore, RKVY scheme had come in their rescue, aiming at achieving 4 per cent annual growth in the agriculture sector during 11th Plan.

Agriculture in Odisha is characterized by low productivity on account of various factors include problematic soil (acidic, saline & waterlogged), lack of assured irrigation, low seed replacement rate, low level of fertilizer consumption, low level of mechanization etc. Huge gaps in yield potential and the technology transfer provides an excellent opportunity to the State to increase production and productivity substantially. Horticulture is becoming popular in the hilly districts of the state has immense potential in horticulture, particularly in vegetable cultivation and micro irrigation. Commercial floriculture is also recently starts getting importance followed by dairy farming. Orissa has huge platform of fish production, fresh and salt water fisheries, especially prawn cultivation, which plays a vital role in the economy. Odisha's agriculture exports mainly derive from prawn farming.

Odisha's agriculture productivity norms are comparatively low, due to a dearth of irrigation and inputs, insufficient investments by the farmers, outdated agronomic

[16] Eastern Region of India consist 4 states-Bihar, Jharkhand, Orissa & West Bengal

practices and want of marketing facilities. It will be the endeavor of the State Agriculture Policy to create an enabling environment in all these spheres[17].

According to the sectoral growth of the state economy, it is observed that the growth rate of agriculture and allied sector was not encouraging during the last three consecutive Five Year Plan (8th to 10th Five-Year Plan) periods. With an apprehension of slow growth of agriculture and allied sector in the country, the Rashtriya Krishi Vikas Yojana **(**RKVY) was implemented by the government of India on May 29, 2007, including Jharkhand. The scheme aims at achieving 4 per cent annual growth in agriculture and allied sector during 11th Five Year plan (2007-12). For further development of agriculture sector, the government of India has spent huge fund under the RKVY scheme.

7.9.2. Rationale of the Scheme's Evaluation

Having understood the initiatives made by the government, it is imperative to analyse the impact of the scheme (RKVY) in the State during the 11th FYP (post-RKVY period). As of the parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY scheme covers not only field crops of agriculture sector but also many other public goods and services like, infrastructure, irrigation, marketing, extension services, trainings, etc., mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agriculture sector involves multi-faceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult. Some approximations have to be made while evaluating the performance of RKVY scheme. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be made for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance of entire State will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment will be made through the change in physical area, production and productivity of crops as well as the change in physical infrastructures of the sector in the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as one of the major parameters of performance evaluation of the scheme.
5. Output and outcome of the scheme were also evaluated by cross-checking with the State statistics.

[17] State agriculture policy (2013), Department of Agriculture, Odisha

7.9.3. Distribution of Allocation and Expenditure across Sectors

The sector-wise allocation and expenditures, expenditure-allocation ratio and expenditure per project are presented in the Table 7.9.1. This section focuses on distribution of allocated fund and expenditure of RKVY projects across 18 sectors. In fact, these are the projects which have contributed significantly for achieving targeted agricultural growth rate in the State. Table 7.9.1 represents the allocation and expenditure distribution across the sectors during 11th FYP under RKVY. The expenditure incurred under different sectors indicates priority given by the State to these sectors for achieving the expected agriculture growth in the state. The sectors in the table arranged in descending order based on expenditure to know the order of priority. The state has given higher preferences in terms of expenditure to seven major sectors[18] which incurred 81.6 per cent of the total fund utilized under the scheme. Other 11 minor sectors incurred only 18.4 per cent of the total expenditure in the State during the 11 FYP (Figure 7.9).

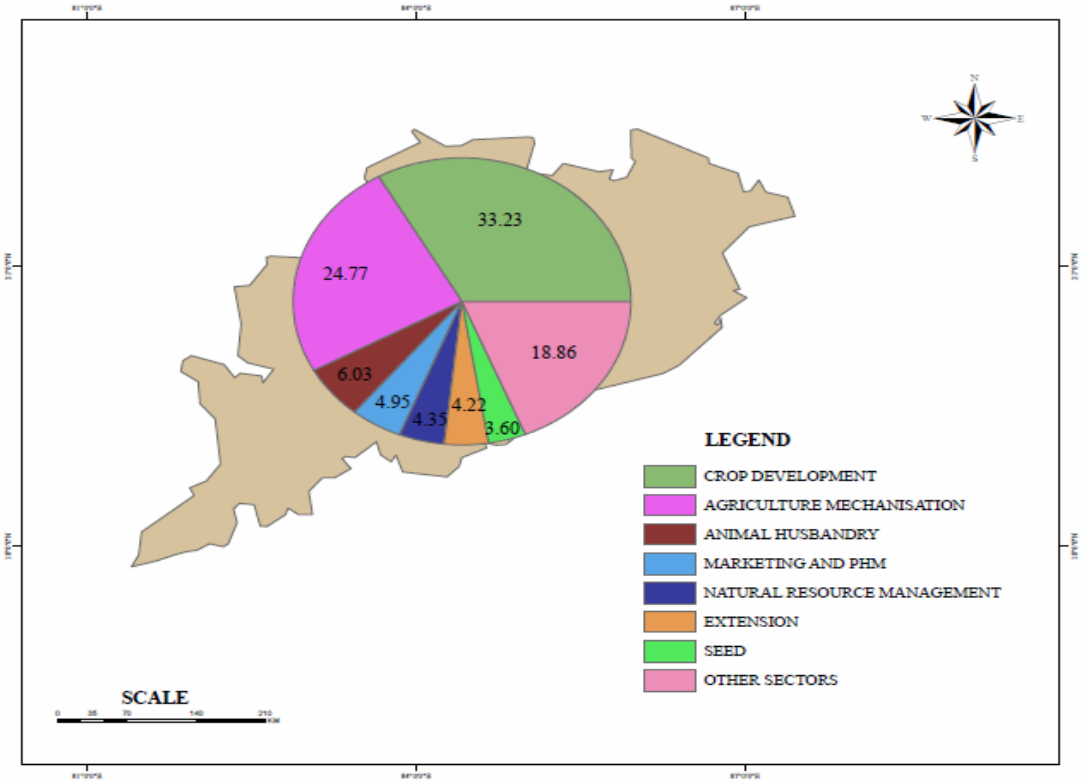

Figure 7.9: Share of Expenditure across Sectors

[18] The 7 Sectors Crop Development, Agriculture mechanization, Animal husbandry, Marketing and PHM, Natural resource management, Extension and Seed

Under the RKVY in EFYP in Odisha, altogether, Rs. 1778.15 crore has been sanctioned and out of this, 991.9 crores (55.8 per cent) was spent and Rs. 786.3 crore (44.2 per cent) left unspent during the period. Of the total allocated funds, the highest share was allotted to crop development sector with Rs. 487.2 crores which accounted for 27.4 per cent of the RKVY fund during the EFYP followed by agriculture mechanization and animal husbandry with Rs. 275.4 crores and Rs. 191.1 crores respectively. The least allocation was made to innovative programmes with Rs. 0.8 crore accounted for 0.1 per cent of the total fund.

In the case of expenditure, crop development sector attracted the lion's share (Rs. 329.6) crores which accounted for 33.3 per cent of the total expenditure made by the scheme during the period. It was followed by agriculture mechanization with Rs. 245.6 crore, accounted for 24.8 per cent of the total expenditure and animal husbandry comes in the third position from the top with Rs 59.8 crore (6.1 per cent of the total expenditure). The sectors which have made very less spending were the innovative programmes, non-farm activities and integrated pest management with Rs. 0.8 crore, Rs. 2 crore and Rs. 6 crore respectively.

Further, the expenditure-allocation ratio (E-A ratio) indicates the divergence of the state priorities in terms of expenditure incurred compared to the allocation made. Higher the ratio indicates closeness of expenditure and allocation signifies correct allocation of funds to expenditure. It is evident from the Table 7.9.1 that only few sectors; organic farming/bio-fertilizer, non-farm activities and innovative programmes have made the expenditure equals to the allocation (with a ratio 1). Similarly, the sectors like agriculture mechanisation and marketing & Post Harvest Management (PHM) had the ratio of 0.9, indicating that there is not much deviation in terms of allocation made and expenditure incurred. But there was much divergence observed in case of sectors like animal husbandry, NRM, extension, horticulture, dairy development, micro/ minor irrigation and fisheries, where the ratio is less than 0.5 suggesting that perhaps the allocation made for these sectors are not benefited. However, crop development, seed, research, fertiliser & Integrated Nutrient management (INM) and Integrated Pest Management (IPM) balanced in terms of expenditure incurred and allocation made where the ratio lies between 0.6 and 0.7.

Also, two sectors which were allocated least fund under the scheme non-farm activities and innovative program/training/capacity building/others were found to have 1:1 expenditure-allocation ratio during the period. Some of the priority sectors that made poor expenditure-allocation ratio are animal husbandry, natural resource management, extension services, horticulture, fisheries, etc.

The expenditure allocation ratio pointed out whether there was any divergence in the priorities set by RKVY initially to achieve the goal. It is observed from the table that the overall expenditure allocation ratio was 0.6 in Odisha which indicates that out of the total allocated fund by RKVY to the state almost 60 per cent of the fund was spent. Here we can say that, the State tried to balance in terms of expenditure allocation ratio. However, the ratio seems to be very less compared to all other North-Eastern States in the country.

Further, expenditure per project was incurred highest by the agriculture mechanization sector with Rs 18.9 crores and the lowest was incurred by the innovative programmes sector with Rs 0.3 crores. With regard to number of project allocation at the time of scheme was sanctioned, 42 projects were sanctioned for crop development sector and initiated 38 projects at the end of EFYP. It was followed by horticulture with 38 projects and initiated 28 projects at the end of EFYP. The sector having less number of projects per sector was non-farm activities with only two projects sanctioned and executed.

7.9.4. Sector-Wise Size of the Projects based on the Expenditure

The numbers, magnitude and expenditure of projects undertaken by RKVY during 11th FYP is presented in Table 7.9.2. Based on the expenditure incurred, projects in the state were classified into four categories; Rs. 0 to Crore, Rs. above 1 crores to 10 crores, above rs. 10 crores to 25 crores and Above Rs. 25 crores.From the Table we can see that the largest share of projects fall under 0 to Rs. 1 crore category/slab in Odisha and the least share goes to the category of above Rs. 25 crores. However, the largest expenditure was made by the last category (above Rs. 25 crores) with an estimated expenditure share of 38.8 per cent of the total expenditure under the scheme. Of the crop development sector which got largest number of projects (42 projects), largest numbers of projects have gone to the category from Rs. 1 to 10 crores, but the largest expenditure was made by the category of above Rs. 25 crores.

7.9.5. Sector –Wise Expenditure according to Status

In case of project status during the 11th FYP, out of 295 allocated projects, 169 projects were completed or substantially completed, 122 projects found to be continued (in progress) and four projects abandoned or not yet initiated during the Plan (Table 7.9.3). Large number of projects (29 projects) under the crop development sector were found completed or in the verge of completion followed by marketing & PHM (21 projects), seed and horticulture (15 projects each), and so on. In case of ‘project in progress’, highest (19) number of projects found under horticulture sector followed by research (18 projects), dairy development (14 projects), crop development (13 projects) and so on. In

terms of abandoned/ not yet initiated projects, two projects found under animal husbandry and one project each under marketing & PHM and horticulture.

7.9.6. Sector and Sub-Sector Wise Distribution of Projects by Nature

As stated earlier, agriculture sector in Odisha is characterized by low productivity on account of various factors, these factor includes problematic soil (acidic, saline & waterlogged), lack of assured irrigation, low seed replacement rate, low level of fertilizer consumption, low level of mechanization etc. Therefore, the State has given more emphasis on these issues and taken up various projects under the RKVY scheme under three broad categories normal, State flagship projects and National flagship projects. Again the projects covered under these three categories were classified into infrastructure and non-infrastructure projects. Altogether 19.9 per cent of the total expenditure was made on infrastructure and 80.2 per cent spent on non-infrastructure projects under RKVY in the State during the 11th FYP.

Further, of the total projects, 67.6 per cent fall under normal projects, 30.9 per cent were under State flagship projects and remaining 1.6 per cent were under National flagship projects (Table 7.9.4). Altogether, infrastructure projects contributed 12.7 per cent, and non-infrastructure projects accounted 54.9 per cent under the normal project category. In case of State flagship projects, 7 per cent and 23.9 per cent were the infrastructure and non-infrastructure projects respectively during 11th FYP.

7.9.7. Major Sector-Wise Stated and Actual Goals

An effort was made with this study to capture the impact of RKVY projects in terms of output and outcome. The Appendix Table 7.9 presents the summary of expected and actual output and expected and actual outcome of the major sectors of RKVY projects in Odisha based on the information available in the website. Due to the non-availablity of the data, it was very difficult to analyze the results with the given information and hence the impact in terms of different impact indcators were considered from the secondary sources and discussed in the concluding remarks.

7.9.8. An Assessment of RKVY Performance in the State and Concluding Remarks

In Odisha, RKVY project comprises of 18 sectors which includes 68 sub-sectors. Out of the 18 sectors, seven sectors absorbed 81.6 per cent of the total expenditure incurred. Among the major sectors, crop development utilized the lion's share (33.3 per cent) of the RKVY fund during 11th FYP followed by agriculture mechanization, animal husbandry, marketing and PHM, NRM, extension and seed. For the development of infrastructure

assets in agriculture and its allied sectors, RKVY allocated significant share of funds (19.9 per cent of the total expenditure) in the State. These sectors might have played a crucial role for achievement of expected growth in agriculture and its allied activities in the State directly or indirectly. Besides, 30.9 per cent per cent of the total fund was spent on the State flagship projects especially in many of the minor sectors. The major focus with this study was given to the expenditure because impact can be depicted clearly on which expenditures were made. The State managed to utilize the funds effectively and efficiently under the RKVY compared to other programms and schemes, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds were being utilized and spent for the development of agriculture and allied activities in an integrated manner. Though, there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects, primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

An attempt was made to analyze the performance of agriculture growth in the state before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme although it is difficult to partial out or deduce good or bad performance of RKVYfactor alone as the agricultural sector involves multifaceted interventions, related with many other non-RKVY schemes directly or indirectly.

Table 7.9.5 shows that the state has increased both revenue and capital expenditure in the 11th FYP compared to 10th FYP and State outlay budget also increased by 95.2 per cent in the 11th FYP over 10th Plan. Even the percentage of agriculture to the State budget increased from 19 per cent in the 10th Plan to 22.3 per cent in the 11th Plan, thereby it increased per cent share of agricultural expenditure to agricultural Gross State Domestic Product (GSDP) from 7.6 per cent in 10th Plan to 14.3 per cent in the 11th Plan. Out of the total expenditure in agriculture in the state, RKVY shared 4.4 per cent of the total expenditure. If we look into the state budgetary composition on agriculture and allied sectors in Odisha, the highest per cent change over the previous Plan happened in food storage and warehousing (1315.8 per cent) followed by flood control and drainage (229.4 per cent), crop husbandry (226.8 per cent), major and medium irrigation (200.8 per cent) and minor irrigation (179.6 per cent) (Table7.9.6). This may be due to high flood in the year. In fact, dairy development was reduced in the 11th FYP compared to 10th Plan.

The GSDP at factor cost (2004-05) by industry origin shows that the relative share of agriculture and allied activities and Services sectors to the total GSDP declined in the state from 28.1 per cent & 58.5 per cent in 1999-00 to 17.5 per cent in 2012-13, whereas industry share has increased meagrely from 31.1 per cent in 1999-00 to 32.9 per cent, and

slightly higher growth was noticed in services industry from 40.1 per cent in 1999-00 to 49.6 per cent in 2012-13 (Table 7.9.7). The average growth in overall GSDP and agricultural GSDP were decreased from 9.2 per cent to 7.1 per cent; and 2.9 per cent to 2.3 per cent in 10th Plan to 11th Plan respectively. Even, the reduction in Net Sown Area, Gross Cropped Area and cropping intensity was observed in the 11th Plan compared to 10th Plan. However, the increase in land productivity may be due to inflation factor (Table 7.9.8). Only increase in fertilizer consumption was observed in the 11th Plan compared to 10th Plan (Table 7.9.9). The growth rate in area, yield and production of major crops in the state shows a mixed bundle wherein the increase in area, production and productivity were found in maize, bajra, coarse cereals, lin seed, sunflower, cotton and jute crops but reduction of growth in area, production and productivity was seen in rice, wheat, jowar, ragi, other pulses, ground nut, castor, niger seeds crops and total fibre category (Table 7.9.10). The average annual growth in production and productivity of livestock products and fisheries in the Odisha presented in Table 7.9.11 depicts that there was a drastic increase in meat and egg production but severe reduction was found in Milk and fish production when compared to 10th Plan over 11th Plan period. In totality, the Odisha State has still not able to achieve the targeted growth rate of 4 per cent in agriculture as expected in 11th FYP may be due to the repeated floods and adverse seasonal conditions in 2008-09 and 2009-10.

TABLES

Table 7.9.1: Sector-Wise Allocation and Expenditure under RKVY during 11th Five Year Plan

(Rs. Crore)

Sectors	No. of project*	Allocation^	Expenditure^	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
Crop Development	38(42)	487.2 (27.4)	329.6 (33.3)	0.7	8.7
Agriculture Mechanization	13(18)	275.4 (15.5)	245.6 (24.8)	0.9	18.9
Animal Husbandry	15(19)	191.1 (10.8)	59.8 (6.1)	0.3	4.0
Marketing & PHM	22(23)	55.8 (3.2)	49.1 (5)	0.9	2.2
NRM	10(10)	105.2 (6)	43.2 (4.4)	0.4	4.3
Extension	17(23)	126.6 (7.2)	41.8 (4.3)	0.3	2.5
Seed	21(24)	52.8 (3)	35.7 (3.7)	0.7	1.7
Research	24(27)	42 (2.4)	28.9 (3)	0.7	1.2
Horticulture	28(35)	99.2 (5.6)	28.6 (2.9)	0.3	1.0
Dairy Development	10(16)	61.5 (3.5)	27.3 (2.8)	0.4	2.7
Cooperatives And Cooperation	3(3)	50.6 (2.9)	25.4 (2.6)	0.5	8.5
Micro/Minor Irrigation	8(9)	102.3 (5.8)	22.5 (2.3)	0.2	2.8
Organic Farming / Bio Fertilizer	13(13)	17.6 (1)	18.3 (1.9)	1.0	1.4
Fisheries	12(14)	80.8 (4.6)	16.7 (1.7)	0.2	1.4
Fertilizers & INM	6(8)	17.3 (1)	10.5 (1.1)	0.6	1.7
Integrated Pest Management	6(6)	10 (0.6)	6 (0.7)	0.6	1.0
Non Farm Activities	2(2)	2 (0.2)	2 (0.3)	1.0	1.0
Innovative programmes/ training/ capacity building/ others	3(3)	0.8 (0.1)	0.8 (0.1)	1.0	0.3
Grand Total	**251(295)**	**1778.1 (100)**	**991.9 (100)**	**0.6**	**4.0**

Source: www.rkvy.nic.in, April (2013)

Note: * Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY;
^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total;
** The ratio <1 indicates the allocation is not fully utilised, the ratio=1 indicates the allocation is exactly equal to the expenditure and the ratio =0 indicates the allocation has not spent yet;
PHM: Post Harvest Management; INM: Integrated Nutrient Management; NRM: Natural Resource Management;

Table 7.9.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	Above 0 to 1 crore		Above 1 crore to 10 crore		Above 10 crore to 25 crore		Above 25 crores		Grand Total*	
	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.
Crop development	21.1	0.9	57.9	23.1	15.8	24.0	5.3	52.0	38(100)	329.6(100)
Agriculture mechanizations	7.7	0.1	30.8	11.5	30.8	24.5	30.8	64.0	13(100)	245.7(100)
Animal husbandry	46.7	6.5	40.0	42.5	13.3	51.0	0.0	0.0	15(100)	59.8(100)
Marketing and PHM	72.7	21.8	22.7	15.1	0.0	0.0	4.6	63.2	22(100)	49.1(100)
NRM	10.0	1.0	80.0	69.5	10.0	29.5	0.0	0.0	10(100)	43.2(100)
Extension	53.0	9.1	41.2	31.2	0.0	0.0	5.9	59.8	17(100)	41.9(100)
Seed	28.6	7.5	71.4	92.6	0.0	0.0	0.0	0.0	21(100)	35.8(100)
Research	75.0	18.6	25.0	81.4	0.0	0.0	0.0	0.0	24(100)	29(100)
Horticulture	64.3	22.9	35.7	77.1	0.0	0.0	0.0	0.0	28(100)	28.6(100)
Dairy development	20.0	5.6	80.0	94.4	0.0	0.0	0.0	0.0	10(100)	27.4(100)
Cooperatives and cooperation	33.3	1.0	33.3	22.3	33.3	76.7	0.0	0.0	3(100)	25.4(100)
Micro/minor irrigation	62.5	15.0	25.0	38.3	12.5	46.7	0.0	0.0	8(100)	22.6(100)
Organic farming / bio fertilizer	61.5	22.4	38.5	77.7	0.0	0.0	0.0	0.0	13(100)	18.4(100)
Fisheries	66.7	26.1	33.3	73.9	0.0	0.0	0.0	0.0	12(100)	16.7(100)
Fertilizers and INM	33.3	7.9	66.7	92.1	0.0	0.0	0.0	0.0	6(100)	10.5(100)
Integrated pest management	66.7	36.0	33.3	64.0	0.0	0.0	0.0	0.0	6(100)	6.1(100)
Non farm activities	50.0	12.5	50.0	87.6	0.0	0.0	0.0	0.0	2(100)	2.1(100)
Innovative programmes	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	3(100)	0.9(100)
Grand Total	**47.0**	**5.5**	**43.8**	**34.4**	**6.0**	**21.4**	**3.2**	**38.8**	**251(100)**	**991.9(100)**

Source: Same as table 1;
Note: *Number in absolute figures; Figures in the parenthesis are percentage of accompanying absolute values;

Table 7.9.3: Sector-Wise Classification of Projects by their Status under RKV during 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not yet implemented	
	No.	Expenditure	No.	Expenditure	No.	Expenditure
Crop Development	13	144.0	29	185.6	0	0
Agriculture Mechanization	5	0.0	13	245.6	0	0
Animal Husbandry	8	30.5	9	29.3	2	0
Marketing & PHM	1	0.4	21	48.7	1	0
NRM	3	18.0	7	25.2	0	0
Extension	9	4.4	14	37.4	0	0
Seed	9	9.2	15	26.5	0	0
Research	18	7.0	9	21.9	0	0
Horticulture	19	11.6	15	17.0	1	0
Dairy Development	14	20.6	2	6.7	0	0
Cooperatives And Cooperation	1	0.3	2	25.1	0	0
Micro/Minor Irrigation	8	21.7	1	0.8	0	0
Organic Farming / Bio Fertilizer	0	0	13	18.3	0	0
Fisheries	9	10.2	5	6.5	0	0
Fertilizers & INM	3	0.2	5	10.3	0	0
Integrated Pest Management	2	2.1	4	3.9	0	0
Non Farm Activities	0	0.0	2	2.0	0	0
Innovative programmes	0	0.0	3	0.8	0	0
Grand Total	**122**	**280.3**	**169**	**711.6**	**4**	**0**

Source: Same as Table 1;

Table 7.9.4: Sector and Sub Sector wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		National flagship project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Crop development	**0.0**	**95.9**	**0.0**	**4.1**	**0.0**	**0.0**	**0(0)**	**100(329.6)**	**100(329.6)**
Coarse cereals	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(26)	100(26)
Cotton	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.2)	100(2.2)
Maize	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(10.4)	100(10.4)
Mustard	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.8)	100(2.8)
Oilseeds and pulses	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(42.5)	100(42.5)
Others (crop development)	0.0	55.5	0.0	44.5	0.0	0.0	0(0)	100(27.2)	100(27.2)
Paddy	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(208.2)	100(208.2)
Pigeonpea	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(3.8)	100(3.8)
Sugarcane	0.0	44.1	0.0	55.9	0.0	0.0	0(0)	100(2.3)	100(2.3)
Sunflower	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(4.6)	100(4.6)
Agriculture mechanization	**0.0**	**15.9**	**0.0**	**84.1**	**0.0**	**0.0**	**0(0)**	**100(245.7)**	**100(245.7)**
Machines and equipment assistance	0.0	15.9	0.0	84.1	0.0	0.0	0(0)	100(245.6)	100(245.6)
Others (agri. Mechanization)	0.0	0.0	0.0	100.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Animal husbandry	**21.6**	**51.1**	**27.2**	**0.0**	**0.0**	**0.0**	**48.9(29.3)**	**51.2(30.6)**	**100(59.8)**
Animal health	0.0	26.6	73.4	0.0	0.0	0.0	73.5(7.2)	26.6(2.7)	100(9.9)
Breed improvement	2.3	91.4	6.3	0.0	0.0	0.0	8.6(2)	91.5(21.1)	100(23)
Extension and training	0.0	0.0	100.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Feed and fodder	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(7)	100(7)
Infrastructure	13.4	0.0	86.6	0.0	0.0	0.0	100(1.2)	0(0)	100(1.2)
Others (animal husbandry)	0.0	0.0	100.0	0.0	0.0	0.0	100(5.9)	0(0)	100(5.9)
Poultry	100.0	0.0	0.0	0.0	0.0	0.0	100(12.3)	0(0)	100(12.3)
Marketing and PHM	**81.8**	**16.3**	**2.0**	**0.0**	**0.0**	**0.0**	**83.8(41.2)**	**16.3(8)**	**100(49.1)**
Cold storages and cold chains	52.8	47.2	0.0	0.0	0.0	0.0	52.8(1)	47.3(0.9)	100(1.9)
Godowns and wear houses	60.3	0.0	39.7	0.0	0.0	0.0	100(2.5)	0(0)	100(2.5)
Others (marketing & PHM)	100.0	0.0	0.0	0.0	0.0	0.0	100(2.4)	0(0)	100(2.4)
Setting up/ strengthening of market	83.2	16.8	0.0	0.0	0.0	0.0	83.3(35.4)	16.8(7.2)	100(42.5)

infrastructure									
NRM	**4.5**	**33.3**	**2.4**	**29.5**	**0.0**	**30.3**	**7(3)**	**93.1(40.3)**	**100(43.2)**
Others (NRM)	12.2	0.0	6.7	81.1	0.0	0.0	19(3)	81.1(12.8)	100(15.8)
Soil treatment (acidic alkali, water logged)	0.0	52.1	0.0	0.0	0.0	47.9	0(0)	100(12.5)	100(12.5)
Water conservation structures and watershed dev	0.0	52.6	0.0	0.0	0.0	47.4	0(0)	100(15.1)	100(15.1)
Extension	**16.6**	**23.6**	**59.8**	**0.0**	**0.0**	**0.0**	**76.4(32)**	**23.7(9.9)**	**100(41.9)**
Infrastructure	44.9	55.1	0.0	0.0	0.0	0.0	44.9(5.9)	55.2(7.2)	100(13)
New approaches to extension	100.0	0.0	0.0	0.0	0.0	0.0	100(1.2)	0(0)	100(1.2)
Others (extension)	0.0	0.0	100.0	0.0	0.0	0.0	100(25)	0(0)	100(25)
Training/ study tour	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.8)	100(2.8)
Seed	**53.9**	**46.1**	**0.0**	**0.0**	**0.0**	**0.0**	**53.9(19.3)**	**46.2(16.5)**	**100(35.8)**
Others (seed)	18.2	81.8	0.0	0.0	0.0	0.0	18.3(1.3)	81.8(5.6)	100(6.9)
Seed certification	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.3)	100(1.3)
Seed farm	31.2	68.8	0.0	0.0	0.0	0.0	31.2(2.6)	68.9(5.8)	100(8.3)
Seed processing centers and storage	92.1	7.9	0.0	0.0	0.0	0.0	92.1(15.5)	8(1.4)	100(16.8)
Seed testing lab	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.7)	100(2.7)
Research	**13.9**	**35.9**	**50.2**	**0.0**	**0.0**	**0.0**	**64.1(18.6)**	**36(10.4)**	**100(29)**
Agri facility	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(9.1)	100(9.1)
Agri research project	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Agri research/ teaching facility (infrastructure)	21.4	1.3	77.3	0.0	0.0	0.0	98.8(18.6)	1.3(0.3)	100(18.8)
Horticulture	**24.9**	**55.5**	**3.5**	**7.2**	**8.9**	**0.0**	**37.4(10.7)**	**62.7(18)**	**100(28.6)**
Area expansion	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.1)	100(1.1)
Development of horticulture farms/ facilities	100.0	0.0	0.0	0.0	0.0	0.0	100(2.5)	0(0)	100(2.5)
Fruits	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.6)	100(1.6)
Nurseries and green houses	46.7	6.6	13.1	0.0	33.6	0.0	93.5(7.2)	6.6(0.5)	100(7.7)
Others (horticulture)	12.7	43.2	0.0	44.2	0.0	0.0	12.7(0.6)	87.4(4.1)	100(4.7)
Post harvest management	84.4	15.6	0.0	0.0	0.0	0.0	84.4(0.6)	15.7(0.2)	100(0.7)
Tissue culture	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.3)	100(2.3)
Vegetable	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(8.4)	100(8.4)
Dairy development	**17.2**	**66.2**	**7.3**	**9.4**	**0.0**	**0.0**	**24.5(6.7)**	**75.6(20.7)**	**100(27.4)**
Assistance to dairy unions/ farmers (inc training)	64.7	0.0	0.0	35.3	0.0	0.0	64.7(4.7)	35.4(2.6)	100(7.3)
Dairy units to farmers	0.0	80.6	19.4	0.0	0.0	0.0	19.5(2)	80.6(8.3)	100(10.3)

Others (dairy development)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(2.6)	100(2.6)
Promotion of milk collection centers	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(7.4)	100(7.4)
Cooperatives and cooperation	**22.3**	**77.7**	**0.0**	**0.0**	**0.0**	**0.0**	**22.3(5.7)**	**77.8(19.8)**	**100(25.4)**
Construction of godowns	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(19.8)	100(19.8)
Other facilities	100.0	0.0	0.0	0.0	0.0	0.0	100(5.7)	0(0)	100(5.7)
Micro/minor irrigation	**3.7**	**96.3**	**0.0**	**0.0**	**0.0**	**0.0**	**3.7(0.9)**	**96.4(21.7)**	**100(22.6)**
Check dams/ water courses bunds	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(3.7)	100(3.7)
Others (micro & minor irrigation)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(12.3)	100(12.3)
Pump sets (diesel/electric)	12.6	87.4	0.0	0.0	0.0	0.0	12.6(0.9)	87.5(5.8)	100(6.6)
Organic farming / bio fertilizer	**57.2**	**17.3**	**25.5**	**0.0**	**0.0**	**0.0**	**82.8(15.2)**	**17.3(3.2)**	**100(18.4)**
Others (organic farming & bio-fertilizer)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Promotion of bio fertilizer	20.8	79.2	0.0	0.0	0.0	0.0	20.9(0.7)	79.2(2.7)	100(3.4)
Promotion of organic farming	100.0	0.0	0.0	0.0	0.0	0.0	100(1.1)	0(0)	100(1.1)
Vermi composting	65.1	0.0	34.9	0.0	0.0	0.0	100(13.5)	0(0)	100(13.5)
Fisheries	**27.3**	**61.0**	**11.8**	**0.0**	**0.0**	**0.0**	**39.1(6.6)**	**61(10.2)**	**100(16.7)**
Farmers fish ponds/ assistance including training	12.6	87.4	0.0	0.0	0.0	0.0	12.6(1.1)	87.5(7.7)	100(8.8)
Fish marketing	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Infrastructure/ ponds of fisheries/ dept/ agency	57.9	0.0	42.1	0.0	0.0	0.0	100(4.7)	0(0)	100(4.7)
Others (fisheries)	27.2	72.8	0.0	0.0	0.0	0.0	27.3(0.8)	72.8(2)	100(2.8)
Fertilizers and INM	**64.0**	**22.1**	**13.9**	**0.0**	**0.0**	**0.0**	**78(8.2)**	**22.1(2.4)**	**100(10.5)**
Micro nutrients labs	30.1	0.0	69.9	0.0	0.0	0.0	100(2.1)	0(0)	100(2.1)
Others (fertilizer & inm)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Soil testing lab	74.2	25.8	0.0	0.0	0.0	0.0	74.3(6.1)	25.8(2.2)	100(8.2)
Integrated pest management	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0(0)**	**100(6.1)**	**100(6.1)**
Pest surveillance	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(4.4)	100(4.4)
Promotion of IPM	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.8)	100(1.8)
Non farm activities	**0.0**	**87.5**	**12.5**	**0.0**	**0.0**	**0.0**	**12.5(0.3)**	**87.6(1.8)**	**100(2.1)**
Agri business centers	0.0	0.0	100.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Others (NFA)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(1.8)	100(1.8)
Innovative programmes	**28.0**	**72.0**	**0.0**	**0.0**	**0.0**	**0.0**	**28(0.3)**	**72.1(0.7)**	**100(0.9)**
Innovative programmes	100.0	0.0	0.0	0.0	0.0	0.0	100(0.3)	0(0)	100(0.3)
Others (innovative programmes)	0.0	100.0	0.0	0.0	0.0	0.0	0(0)	100(0.7)	100(0.7)
Grand total	**12.7**	**54.9**	**7.0**	**23.9**	**0.3**	**1.3**	**19.9(197.2)**	**80.2(794.7)**	**100(991.9)**

Source: Same as Table 1; **Note**: Figures in the parentheses are the respective absolute expenditure values in crore; IPM: Integrated Pest Management; NFA: Non Farm Activities;

Table 7.9.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	Percentage of RKVY expenditure to agri. expenditure
2002-03	734	615	1349	6564	20.5	9.4	
2003-04*	844	478	1322	6509	20.3	7.5	
2004-05	789	372	1161	6258	18.6	6.4	
2005-06	768	520	1289	7352	17.5	6.8	
2006-07	849	692	1542	8542	18.0	8.0	
10th Plan average	**3985**	**2677**	**6662**	**35225**	**19.0**	**7.6**	
2007-08	1070	1163	2233	10228	21.8	11.1	
2008-09	1789	1178	2967	13007	22.8	14.5	
2009-10	1994	1148	3142	13559	23.2	14.2	
2010-11	2269	1079	3348	14762	22.7	14.9	**4.4**
2011-12*	2466	1129	3595	17191	20.9	16.7	
11th Plan average	**9587**	**5698**	**15285**	**68747**	**22.3**	**14.3**	
% change over 10th plan	**140.6**	**112.9**	**129.4**	**95.2**			

Source: State Finances, RBI;

Note: *indicates Revised estimates and Agriculture and allied activities includes Irrigation and flood control; Budgetary expenditure accounts only developmental expenditure;

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100; 10th and 11th plan value indicates average of the five years;

Table 7.9.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Particulars	**10th Plan**	**11th Plan**	**% change over 10th plan**
Crop Husbandry	984.7 (14.7)	3218.3 (14.4)	226.8
Soil and Water Conservation	291.4 (4.4)	518 (2.4)	77.8
Animal Husbandry	421.4 (6.3)	907.2 (4.1)	115.3
Dairy Development	25.7 (0.4)	21.4 (0.1)	-16.9
Fisheries	137.1 (2.1)	275.2 (1.3)	100.8
Forestry and Wild Life	683.2 (10.2)	1741.5 (7.8)	154.9
Plantations	0 (0)	0 (0)	0.0
Food Storage and Warehousing	246.4 (3.7)	3488.2 (15.6)	1315.8
Agricultural Research and Education	116.3 (1.8)	313.2 (1.5)	169.4
Agricultural Finance Institutions	0 (0)	0 (0)	0.0
Co-operation	263.3 (4)	682.4 (3.1)	159.2
Other Agricultural Programmes	22.6 (0.4)	52 (0.3)	129.8
Major and Medium Irrigation	476.2 (7.1)	1432.3 (6.5)	200.8
Minor Irrigation	407.1 (6.1)	1138.3 (5.1)	179.6
Flood Control and Drainage	156 (2.4)	513.9 (2.3)	229.4
Others	2494 (37.1)	8068.3 (36.1)	223.5
Total	**6724.9 (100)**	**22369.6 (100)**	**232.6**

Source: State Finances, RBI;

Note: *The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total;

Table 7.9.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	28.1	31.1	40.1
2000-01	26.5	30.4	42.1
2001-02	28.9	27.5	41.9
2002-03	24.1	29.9	44.9
2003-04	25.7	30.3	43.0
2004-05	23.5	34.1	42.4
2005-06	23.0	33.1	43.9
2006-07	20.7	35.6	43.6
2007-08	19.6	37.7	42.7
2008-09	18.5	36.9	44.6
2009-10	19.1	34.3	46.6
2010-11	18.1	34.1	47.8
2011-12	16.4	34.9	48.7
2012-13	17.5	32.9	49.6

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.9.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-17.1	-0.6	57	79	138.3	25334
2003-04	22.8	15.1	58	86	149.0	30497
2004-05	3.3	13.2	57	87	151.9	31812
2005-06	3.3	5.7	57	89	156.9	33153
2006-07	1.9	12.9	57	90	158.5	34016
10th Plan Average	**2.9**	**9.2**	**57**	**86**	**150.9**	**30962**
2007-08	4.7	10.9	56	90	160.3	35791
2008-09	1.9	7.7	56	91	161.9	36589
2009-10	7.7	4.5	56	91	163.4	39634
2010-11	1.9	7.5	47	54	116.0	48088
2011-12	-4.6	4.9	47	54	116.0	45890
11th Plan Average	**2.3**	**7.1**	**52**	**76**	**143.5**	**41198**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05);
10th and 11th plan value indicates average of the five years;
* Land productivity = agricultural GSDP/ha of NSA;

Table 7.9.9: Trend in Inputs Use in Odisha

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area*	Irrigation intensity (%)	% gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	12.5	17.1	22.0	137.3	21.8	34.0
2003-04	17.4	25.2	30.0	145.0	29.2	37.1
2004-05	18.5	26.9	32.2	145.8	30.9	51.6
2005-06	20.3	30.0	35.7	147.6	33.6	57.3
2006-07	20.5	32.1	36.3	156.3	35.8	46.7
10th Plan Average	**17.8**	**26.2**	**31.2**	**146.4**	**30.2**	**45.3**
2007-08	21.6	33.1	38.4	153.3	36.7	50.1
2008-09	21.9	31.8	39.1	144.9	35.0	59.3
2009-10	21.8	16.1	39.1	74.0	17.7	57.6
2010-11	12.8	15.4	27.4	119.9	28.3	59.1
2011-12	12.8	15.4	27.4	119.9	28.3	56.5
11th Plan Average	**18.2**	**22.4**	**34.3**	**122.4**	**29.2**	**56.5**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of the five years;
***** indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 7.9.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	-0.2	10.6	9.2	-2.1	-2.8	-0.8
Wheat	-8.9	-6.1	0.6	-12.7	-11.4	2.3
Jowar	-4.9	-3.2	1.5	-1.9	-1.2	0.7
Bajra	-10.0	-9.1	1.3	5.7	7.1	1.1
Maize	4.8	21.6	14.1	12.9	21.3	5.2
Ragi	-2.7	0.3	4.2	-2.7	-4.3	-2.6
Small Millets	-13.3	-12.6	0.1	-3.0	1.0	3.4
Coarse Cereals	-2.9	8.4	11.0	4.1	13.9	7.6
Total Cereals	-0.3	10.4	9.2	-1.9	-2.3	-0.6
Gram	6.8	7.2	0.1	1.6	5.5	3.4
Arhar/Tur	1.4	6.4	4.6	1.4	1.9	0.5
Other Pulses	5.0	10.1	2.4	-17.3	-15.8	-18.3
Total Pulses	4.1	7.9	2.5	-1.1	0.1	1.3
Total Food grains	0.1	10.1	7.8	-1.8	-2.2	-0.6
Groundnut	6.4	13.5	3.8	-3.2	-1.7	1.4
Sesamum	0.8	2.7	0.9	-8.0	-7.3	-2.2
Rapeseed & Mustard	2.6	10.4	4.2	-5.3	-0.4	4.9
Linseed	3.1	7.5	3.4	0.8	3.1	2.2
Castor	3.9	5.4	10.2	-23.3	-22.9	-19.8
Safflower	-12.4	-5.4	3.2	-7.5	-7.3	0.0
Niger seed	-3.8	5.8	8.2	-5.8	-2.8	2.9
Sunflower	19.9	29.6	5.0	11.6	18.2	5.2
Total Oilseeds	0.2	9.6	7.4	-4.5	-0.8	3.8
Cotton	1.8	19.8	25.5	16.5	26.7	-6.8
Jute	19.2	22.2	12.9	2.6	0.9	-13.5
Total Fibers	-4.2	3.7	10.7	-15.6	-10.2	-15.0
Sugarcane	13.3	14.9	2.1	0.3	0.6	-0.2

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.9.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	1.3	5.3	8.6	2.0
2003-04	6.0	0.2	2.4	6.7
2004-05	28.7	13.3	30.6	2.8
2005-06	4.6	2.0	5.2	3.1
2006-07	6.6	5.8	11.4	5.1
10th plan	**9.4**	**5.3**	**11.6**	**4.0**
2007-08	13.6	100.0	8.7	2.2
2008-09	-1.7	7.3	28.8	7.3
2009-10	3.3	8.5	16.3	2.1
2010-11	1.2	7.8	1.6	1.0
2011-12	NA	NA	NA	-1.1
11th plan*	**4.1**	**30.9**	**13.9**	**2.3**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years;
NA: data not available;

7.10 SIKKIM

7.10.1. Background Information

Sikkim is one of the far flung States of India. Sikkim is the 22nd state of India came into existence with effect from 16th May, 1975. Sikkim is a very small hilly state in the Eastern Himalayas, extending approximately 115 Km. from north to south and 65 Km from east to west, surrounded by vast stretches of Tibetan Plateau in the North, Chumbi Valley of Tibet and the Kingdom of Bhutan in the east, Darjeeling district of West Bengal in the south and the Kingdom in Nepal in the west. Sikkim has a total land area of 7,096 sq. km and it is the second-smallest state after Goa in total area.

Agriculture is the major economic activity in Sikkim and is practiced on terraced field that has been laboriously created from steep hillsides. State is the largest producer of cardamom and also boasts to utilize largest area for its cultivation. Tea is exported to USSR & Germany. A coffee plantation has also been started at Majitar. Large Cardamom, ginger and turmeric are the principal crops while Mandarin orange, guava, mango, banana and so on are the principal fruits grown in the state. Among the cereals, rice, wheat, maize, finger millet and barley are the major crops, pulses include urd and pea, oil seeds like soya bean & mustard and the vegetables such as onion, broccoli, brinjal, carrot, pumpkin, radish, tomato, cabbage, and cauliflower are the major food crops grown in the state. Sikkim is also a paradise for flowers. Gladioli, anthuriums, lilliums, primulas, rhododendrons, orchids as well as many other floral species thrive here. The state is home to an amazing 450 species of exotic orchids alone. More than 64 per cent of the population of Sikkim depends on agriculture for their livelihood, directly or indirectly cultivating 1,09,963 hectares which is only 15 per cent of the total land area of Sikkim. The hill slopes have been converted into farmlands using terrace-farming techniques and is used for cultivation. Kharif is the main season for agricultural crops in the state and about 80 per cent of the crops are cultivated in this season ***(Sikkim Action Plan on Climate Change, 2011).***

As far as the constraints and challenges in agriculture in the state concerned, limited arable land, shifting cultivation, acidic soils, low productivity, capital inadequacy, lack of infrastructural support, unfavorable terrain, high cost of production, lack of efficient information system on markets, lack of proper post harvest management, poor value addition and marketing system, high post harvest losses and poor value realisation, low farm mechanisation due to hilly topography. High runoff results in low absorption of moisture by soil and loss of nutrients impacting crop productivity were the major problems for the development of agriculture. In the recent years, the state has been

addressing these issues by giving a sspecial emphasis on topography and natural barriers, ensuring better land management, introducing improved cultivation in slope land, replacement of local seeds with High Yielding Varieties (HYVs), turning horticulture into an export-oriented industry, watershed projects and encouraging other animal husbandry activities.

Sikkim is one of the Special Category States and is solely dependent on Central Assistance for Plan investment because of low resource base. The State plan investment is largely dependent on Central assistance as the scope of internal mobilization of resources is limited in the state in view of low tax base. Therefore, the prime mover of the growth of the economy has been the flow of funds from the Centre. In this context, the scheme introduced by the Government of India (GOI) in 29th May 2007, with an objective of achieving 4 per cent annual growth in the agriculture and allied sector during 11th plan (2007-12) become one of the supportive boons for the state. The government has spent huge funds under the RKVY scheme for ensuring a holistic development of agriculture and allied sectors. The fund allocation under the scheme is based on the foundation of District and State Agricultural Plans, states have high levels of flexibility including approvals at the level of the state governments. The projects under the scheme are time bounded and which encourages convergence with other programmes such as MGNREGS, SGSY, watershed mission etc. Projects are being implemented under Stream-I (Project based) and Stream-II (Strengthening of schemes with resource gaps).

For effective implementation of RKVY in the state, Sikkim has prepared State Agricultural Plan (SAP) and set the target to achieve a growth rate of 4 per cent for the agriculture sector as a whole during 11th FYP. According to the SAP, the State keeps a vision of accelerating sustainable agricultural development by way of strengthening the organic production of crops and the enterprises using system approach with market potential and increased farm incomes. The SAP states the areas of emphasis such as bridging the yield gaps by increasing efficiency of critical inputs; production of HYV seeds, enriched compost and bio fertilizer; popularizing modern cultivation techniques for fruits, vegetables and flowers; promoting value addition and organized marketing; increasing farm income through animal component by stock improvement and management practices; and promoting brand value of organically produced local products. It also mentions the priorities set for the State include, integrating Farming System Approach; establishing, managing and using components of organic farming; soil health improvement; systematic shift from and /or integration of single crop enterprises to multiple cropping, intercropping and multi-enterprises; bridging yield gaps of crops, animals and other enterprises; and paradigm shift from production oriented subsistence farming to market oriented agriculture.

As targeted, the areas focus under RKVY implementation in the state include, integrated farming system for sustainable agriculture; activities related to enhancement of soil fertility & soil health; Integrated Pest Management schemes; Support to seed production and cultivation; Encouraging non-farm activities; Activities relating to enhancement of horticultural production and popularization of watershed programs; Strengthening of Infrastructure facilities for storage, warehousing, processing, seed testing labs, Agro service centres etc.; fisheries development activities; Organic and Bio-fertilizers; floriculture & off season vegetables; Animal husbandry and dairy development programs; Nutrient supplement, Agriculture mechanization; watershed programs and land terracing etc.

7.10.2. Rationale of the Scheme's Evaluation in Sikkim

Having understood the initiatives made by the government, it is imperative to analyse the impact of the scheme (RKVY) on the growth and development of agriculture sector in the State in the 11th FYP (post-RKVY period). As of the parameters, there is no definite yardstick to measure impact of centrally sponsored schemes, especially the RKVY. As the RKVY scheme covers not only field crops of agriculture sector but also many other public goods and services like, infrastructure, irrigation, marketing, extension services, trainings, etc., mere estimation of area, production and productivity of crops might not give clear picture of the scheme's performance. Also, the agriculture sector which RKVY sponsors involves multi-faceted interventions, related with many other non-RKVY schemes directly or indirectly. Therefore, estimation of RKVY scheme in isolation is very difficult; some approximations have to be made while evaluating the performance of RKVY scheme. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance of entire State will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment needs to be made through increase in area, production and productivity of crops as well as change in physical infrastructures of the sector in the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as one of the major parameters of performance evaluation of the scheme, and output and outcome of the scheme were also evaluated.

The detailed impact evaluation of the RKVY scheme in the state is discussed in the following sections.

7.10.3. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors. In fact, these are the projects which have contributed significantly for achieving targeted agricultural growth rate in the State. Table 7.10.1 reflects the sector-wise distribution of projects, allocation and their expenditure in the state during the 11th FYP. The sectors in the tables are arranged in descending order taking into account the importance of expenditure actually incurred over allocation. Specifically, these are the projects which have contributed significantly for achieving the targeted agricultural growth rate in the state. With respect to expenditure across sectors, there are 7 major sectors such as Natural Resource Management, Horticulture, Animal Husbandry, Dairy Development, Micro/Minor Irrigation, Non Farm Activities, Innovative Programmes/ Training/ Capacity Building/ Others have utilized 80.84 per cent of the total expenditure while the rest utilized 19.16 per cent of the total expenditure in the State.

The ratio of expenditure to allocation point out whether there was any diversion taking place in the priorities set initially as well to see the absorption capacity of funds in relation to allocation. Higher the ratio indicates closeness of expenditure and allocation, and signifies correct allocation of funds to expenditure. It is evident from the table that out of the 14 sectors in which RKVY funds were distributed in the state half of the sectors (7); Natural resources management, Micro/Minor irrigation, Nonfarm activities, fertilizers & Integrated Nutrient Management (INM), Seed, and Fisheries have made the expenditure equals to the allocation (with a ratio of 1) meaning that there was correct allocation and no deviations in the set priorities of the state at least in these sectors. In addition, the other three sectors namely dairy development, extension and innovative programmes were also made the expenditure almost equal to the allocation with the ratio ranging from 0.8 to 0.9. By looking into the ratios, it is observed that the misallocation or divergence happened in the priorities set by the state in case of agricultural mechanization and crop development sectors where the ratio was ranging from 0.0 to 0.2. However, the sectors; horticulture, animal husbandry, organic farming/bio fertilizer, and co-operatives and co-operation have met 50 to 60 per cent of the allocation in terms of expenditure with the ratio ranging from 0.5 to 0.6.

In general it is possible to acknowledge that the funds provided by RKVY to the states have been broadly spent as allocated to the various State projects. In terms of the 7 major sectors, natural resources management, Micro/minor irrigation and nonfarm activities were perhaps of a higher priority and the other 4 major sectors due to those sectors having lower allocation to expenditure ratios. At the overall, expenditure-allocation ratio of 0.7 in Sikkim states that out of the allocated cost under RKVY, only 70 per cent was actually spent. However, the remaining amount to be spent on these sectors may be with

the allocated list (of projects) which is yet to be initiated and or spilled over to the 12th FYP.

Further, expenditure per project was incurred highest in Micro/Minor Irrigation sector with Rs. 4.5 crores and lowest in the Cooperatives & Cooperation sector with Rs. 0.14 crores. Likewise, expenditure and even allocation do followed almost same trend with respect to the major sectors. Interestingly, cost per project of a few minor sectors like Organic Farming / Bio Fertilizer, Fertilizers and INM, Extension, Fisheries etc., were found to be higher when compared with a few major sectors (horticulture, animal husbandry).

Figure 7.10 depicts the share of total expenditure across the sectors. As stated above, Natural Resource Management accounts 28 per cent of the expenditure followed by Horticulture (18.05 per cent), Animal husbandry (17.58 per cent), Dairy Development (11 per cent) and Innovative Programmes/ Training/ Capacity Building/ Others (10.03 per cent).

The state has utilized the RKVY funds effectively and efficiently as targeted in its State Agricultural Plan (SAP) as it is revealed from the Table 7.10.1 wherein more than half of the amount spent was utilized as allocated in most of the sectors. But the state has not tried to create infrastructure for the long run development of agriculture and allied activities as it is one of the major constraint for the development of agriculture in the state as well as primary agenda of the RKVY scheme. However, it has undertaken various projects to improve the soil condition and increase productivity; promotion of organic farming; strengthening of market infrastructures, post harvest management etc.

7.10.4. Sector-Wise Size of the Projects based on the Expenditure

An effort was also made to classify the projects based on number and magnitude of projects undertaken and expenditure incurred under RKVY during the 11th FYP is presented in Table 7.10.2. The total amount spent under each RKVY projects have been divided into 0 to 1 crores and above 1 crore to 10 crores. Out of the total expenditure, only 27.7 per cent of the projects incurred 67.56 per cent of the expenditure whereas 72.35 per cent of the projects consumed 32.45 per cent of the total expenditure. This indicates that few major projects consumed the majority share in the RKVY funding in the state. The sectors falling in the category of 1 crore to 10 crores include all major sectors; Natural resources management, horticulture, animal husbandry, dairy development, micro/minor irrigation, nonfarm activities, innovative programmes, and tow minor sectors; organic farming/ bio-fertilizer and fertilizers and INM. Al most all the sectors fall under the group 0-1 crore.

Since the state is small, the allocation and expenditure were also seems to be less, however, the amount under RKVY was spent on 47 projects across the sectors even though allocation was made for 52 projects. Ten projects were undertaken on animal husbandry alone. It is revealed from the table that expenditure was made only on 47 projects Even though amount spent was more in Natural resources sector, the number of projects were 6 only compared to animal husbandry. Most of the projects categorized under 1 to crores were longer duration compare to 0 to 1 crore.

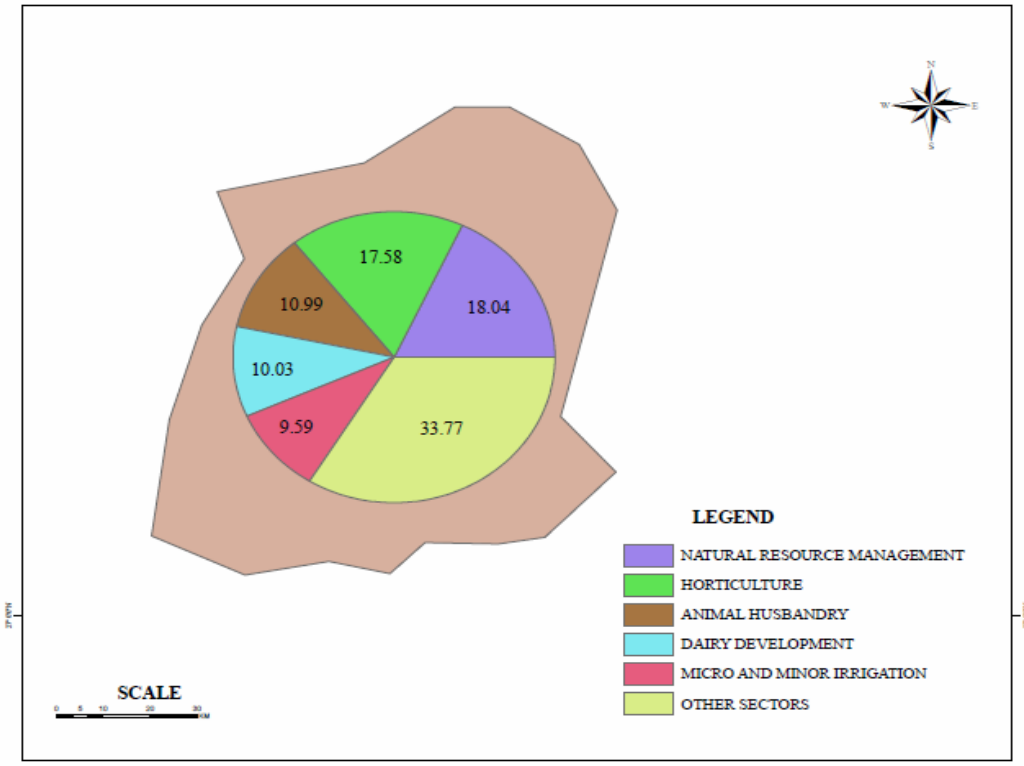

Figure 7.10: Share of Expenditure across Sectors

7.10.5. Sector-Wise Expenditure according to Status

The sector-wise and status-wise expenditure is presented in Table 7.10.3. Out of the total expenditure incurred about 68.51 per cent was spent on projects completed or substantially completed (30 no.) and about 31.48 per cent was spent on projects either approved or projects in progress and ongoing (22 no.). Out of all sectors, Micro/minor irrigation, Natural resources management, Animal husbandry, Non-farm activities, fertilizers and Integrated Nutrient Management, seed, fisheries and Marketing and Post Harvest management (PHM) spent whole amount on completed and substantially completed projects. Only Crop development sector spent least percentage of total expenditure on completed and substantially completed projects whereas agricultural

mechanization has one abandoned or not yet implemented project as per the allocations. Horticulture sector has the highest number of approved and ongoing project and projects in progress with an expenditure of Rs. 5.66 crores followed by Dairy Development and Animal Husbandry with expenditure. Even though, highest allocation was made for Horticulture and Animal husbandry sectors but are left with the highest remaining amount to be spent on ongoing projects.

7.10.6. Sector and Sub Sector Wise distribution of Projects by Nature

Sikkim, though strategically very important and one of the most backward States in the country in the traditional sense of economic parameters. The main factors responsible for agricultural backwardness in the state could be attributed to (a) physical features of the State, necessitating terrace cultivation owing to availability of limited flat land (b) less fertile soil and prevalence of age-old shifting cultivation (c) lack of inadequate infrastructural support in transportation, communication, assured irrigation facilities, technical research and marketing (d) lack of improved and locally acceptable crop varieties and economically viable cropping sequence for different agro-climatic zones, and (e) lack of suitable firm implements for mid and high hill areas etc.

Over the few decades, the state has been intensified its efforts on modernization of agriculture through intensive and mechanized in selected areas, replacing/improving the traditional jhum cultivation to the extent possible, extensive and intensive agriculture through assured irrigation facilities, infrastructural support in transport and communication, improvement of locally acceptable crop varieties conducive to varied agro-climatic zones, development of marketing network to generate income and to provide employment opportunities. The State's strategy of agricultural development is centred on making the state as an organic state in the country and improves the export performance of horticultural crops apart from generating revenue and employment opportunities.

With this background, the state has tried to utilize the RKVY funds in very effective manner by allocating to different kinds of projects in the state. The state has covered with two each National and State flagship projects under RKVY but expenditure was made only on State flagship projects during 11th plan. There were no infrastructure projects included under RKVY scheme in the Plan as listed in Table 9.10.4. Out of the total expenditure of Rs. 46.95 crores under RKVY scheme in Sikkim, about 97.61 per cent of the total amount spent on all other normal projects. These flagship projects are the special kind of projects where the autonomy and flexibility was given to the respective governments for the implementation of the projects. State flagship projects fall under horticulture sector alone with an expenditure of 2.4 crores. In addition, there are three sub

schemes initiated in the state such as the Vegetable Initiative for Urban Clusters, Initiative for Nutritional Security through Intensive Millets Promotion (INSIMP) and National Mission for Protein Supplement (NMPS) (Appendix-VIII). However, project initiated under agricultural mechanization was either abandoned or not yet implemented in the state during 11th FYP in the state.

Within the sub-sectors, Water Conservation Structures and watershed development had contributed the highest (Rs. 7.7 crores) to the expenditure, followed by Pump sets (Rs. 4.5 crores) and Dairy Units to Farmers (Rs. 4.1 crores)) and so on. The lowest contribution was found in Feed and Fodder (Rs. 0.1 crore).

In addition to national and state flagship projects, the RKVY has introduced 9 sub-schemes across the states based on their potentiality from 2010-11. Out of these nine sub-schemes, Sikkim has received three sub schemes namely, Vegetable Initiative for Urban Clusters, Initiative for Nutritional Security through Intensive Millets Promotion (INSIMP) and National Mission for Protein Supplement (NMPS) with an total outlay of 6.91 crores out of which 5.1 crores was already spent in three respective projects in the state and the specialities of each programme are briefed as follows;

***Initiative on Vegetable Clusters* -** Growing demand for vegetables will be met by a robust increase in the productivity and market linkage. For this purpose, an efficient supply chain will be established, to make quality vegetables available at competitive prices. An amount of Rs.300 crores has been provided for this.

***Nutri-cereals* -**To promote balanced nutrition, higher production of bajra, jowar, ragi and other millets will be promoted. Additionally, projects will be taken up to upgrade their processing technologies and create awareness regarding their health benefits. This initiative would provide market linked production support to ten lakh millet farmers in the arid and semi-arid regions of the country. The programme would be taken up in 1000 compact blocks covering about 25,000 villages. Outlay for this programme is Rs. 300 crores.

***National Mission for Protein Supplements* -** This Mission is being launched with an allocation of Rs.300 crores to take up activities to promote animal based protein production through livestock development, dairy farming, piggery, goat rearing and fisheries in selected blocks.

9.10.7. Major Sector-Wise Stated and Actual Goals

RKVY aims at achieving the targeted annual growth of 4 per cent in the agriculture sector by ensuring a holistic development of agriculture and allied sectors. The projects under RKVY comprise of various components involving almost all the stakeholders in the agriculture and allied sectors. Therefore, it is very difficult to analyze the output and outcome of RKVY through any one of the model becuase the development and growth in agricultural production and productivity has always been a synergistic and cumulative effect of various ongoing schemes / projects and efforts put forth by all the stake holders involved.

An effort was made with this study to capture the impact of RKVY projects in terms of output and outcome. The Appendix Table 7.10 presents the summary of expected and actual output, and expected and actual outcome of the major sectors of RKVY projects in Sikkim as provided in the website. Due to the non-availability of the data in the website it was very difficult to analyze the results with the annexure table and hence the impact in terms of different impact indicators were considered from the secondary information and discussed in the concluding remarks.

7.10.8. An Assessment of RKVY Performance in the State and Concluding Remarks

In Sikkim, RKVY projects comprises of 16 sectors including 51 subsectors. Out of 52 projects allocated, expenditure was incurred on 47 projects within the 11th Plan period. Out of 16 sectors, 7 sectors considered as major absorbed 80.84 per cent of the expenditure. Among the major sectors, Natural Resource Management accounts the highest (28 per cent) of the expenditure followed by Horticulture (18.0 per cent), Animal husbandry (17.58 per cent), Dairy Development (11 per cent) and Innovative Programmes/ Training/ Capacity Building/ Others (10.03 per cent). The major focus of the RKVY scheme evaluation was given to the magnitude of expenditure made on the sectors through which the impact can be accessed directly or indirectly. The status-wise expenditure on the sectors shows that most of these sectors (projects) were in the stage of completion or in the verge of completion and the remaining projects might not have initiated and hence spilled over to the 12th FYP. In case of some sectors like Horticulture and Animal husbandry even though high allocation was made, projects are left with the highest remaining amount to be spent on ongoing projects. Although, allocation was made for Agriculture Mechanization sector, there is no expenditure/release seen even after completion of the 11th five year plan. As per the sector-wise size of the projects concerned, majority (67.56 per cent) of the expenditure was made on less number of projects and vice versa and most of these mega projects were found in the major sectors. Projects in the RKVY were distributed into infrastructure projects, national & state

flagship projects, other normal projects and sub-schemes. In Sikkim, the infrastructure & national flagship projects become nil during the 11th FYP and only the state flagships found in the state with a mere expenditure of Rs. 1.23 crores which accounts to 2.5 per cent of the expenditure, the rest is on normal projects or non-infrastructure projects. The state managed to utilize these funds effectively under the RKVY mandate as stated in the SAP may be due to the autonomy and flexibility given to the states. Though there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects in terms of divergence and benefits can be explicitly known.

An attempt was made to analyze the performance of agriculture in the state before and after the initiation of RKVY programme to have some indication about the performance of RKVY programme although it is difficult to partial out or deduce good or bad performance to RKVY factor alone as the agricultural sector involves multifaceted interventions, related with many other non-RKVY schemes directly or indirectly. Table 7.10.5 shows that the state has increased both revenue and capital expenditure in the 11th FYP compared to 10th FYP and state outlay budget also increased by 43.3 per cent in the 11th FYP over 10th Plan. Even the percentage of agriculture to the State budget increased from 12.6 per cent in the 10thPlan to 14.5 per cent in the 11th Plan, thereby it increased per cent share of agricultural expenditure to agricultural Gross State Domestic Product (GSDP) from 33.8 per cent in 10th Plan to 47.1 per cent in the 11th Plan. Out of the total expenditure in agriculture in the state, RKVY shared 3.6 per cent of the total expenditure. If we look into the state budgetary composition on agriculture and allied sectors in Sikkim, the highest per cent change over the previous Plan happened in Minor irrigation (696.3 per cent) followed by other agricultural progarmmes (196.3 per cent), fisheries (169.7 per cent), forestry and wild life (160.5 per cent) and animal husbandry (149.1 per cent) (Table 7.10.6). In fact, dairy development, agricultural research and education, and flood control and drainage component were reduced in the 11th FYP compared to 10th Plan.

The GSDP at factor cost (2004-05) by industry origin shows that the relative share of agriculture and allied activities and Services sectors to the total GSDP declined in the state from 19.6 per cent & 58.5 per cent in 1999-00 to 8.1 per cent & 33 per cent respectively in 2012-13, whereas industry share has increased drastically from 21 per cent in 1999-00 to 58.9 per cent in 2012-13 (Table 7.10.7). The growth in overall GSDP has increased significantly from 7.7 per cent to 22.7 percent but the GSDP growth in agriculture has come down from average of 4.7 per cent in 10th Plan to average of 4.3 per cent in 11th Plan. No change in Net Sown Area, and Gross Cropped Area was observed in the 10th & 11th Plans. However, there was a vast increase in cropping intensity but the situation was reverse in irrigation intensity in the state during 11th Plan compared to 10th

Plan (Table 7.10.8 & 7.10.9). The increase in land productivity may be due to inflation factor (Table 7.10.8). The growth rate in area, yield and production of major crops in the state shows a mixed bundle where there a marginal increase in the area, production and productivity of maize and ragi crops, small millets, coarse cereals and total pulses category but reduction of growth in area, production and productivity was found in wheat, barley crops and other pulses category (Table 7.10.10). The average annual growth in production and productivity of livestock products and fisheries in the Sikkim presented in Table 7.10.11 depicts that there was a severe decrease in milk and egg production when compared to 10th Plan over 11th Plan and good growth in fish.

7.10.9. Has RKVY Addressed the Challenges Facing Agriculture in Sikkim?

Looking into the agricultural growth in the during the 11th FYP, the state has achieved the targeted growth rate of 4 per cent as expected by the RKVY but failed to create the infrastructure components for the long term growth. Even though the state has prioritized horticulture and animal husbandry during the allocation but natural resources management (NRM) was given higher priority while incurring the expenditure mainly because of the problem of acidic soils, low productivity and high runoff in the state. By giving higher priority to NRM, the state undertook activities related to enhancement of soil fertility & soil health, increased productivity of many crops by increasing the absorption of moisture by soil thereby protecting the loss of nutrients through soil treatment, and developing water conservation structures and watershed development. Within the horticulture & non-farm activities sectors, the state has spent more of its funds on post harvest management and post harvest processing facilities to reduce high post harvest losses and improving value addition for higher value realization. More income generation activities were created in the animal husbandry and dairy development sectors by giving assistance to the dairy unions/farmers by way of training and supporting them for the purchase of inputs. Lot of expenditure on innovative programmes in order to modernize cultivation and crop production in the state. These are all some of the instances, the state has tried to address the challenges of agriculture in the state.

TABLES

Table 7.10.1: Sector-Wise Allocation and Expenditure under RKVY during the 11th FYP

(Rs. Crore)

Sectors	No. of projects*	Allocation^	Expenditure^	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
NRM	6 (6)	8.7 (13.2)	8.5 (18.1)	1.0	1.4
Horticulture	10 (11)	15.9 (24.1)	8.3 (17.6)	0.5	0.8
Animal Husbandry	7 (8)	9.4 (14.2)	5.2 (11)	0.6	0.7
Dairy Development	2 (2)	5.1 (7.7)	4.7 (10.1)	0.9	2.4
Micro/Minor Irrigation	1 (1)	4.5 (6.8)	4.5 (9.6)	1.0	4.5
Non Farm Activities	2 (2)	2.9 (4.3)	3.5 (7.6)	1.2	1.8
Innovative Programmes	3 (3)	4.3 (6.6)	3.3 (7.2)	0.8	1.1
Organic Farming / Bio Fertilizer	3 (4)	5.7 (8.6)	3.1 (6.7)	0.6	1.0
Fertilizers & INM	2 (2)	1.9 (3)	1.9 (4.2)	1.0	1.0
Extension	1 (1)	1 (1.6)	0.9 (2)	0.9	0.9
Seed	3 (3)	0.8 (1.3)	0.8 (1.7)	1.0	0.3
Fisheries	1 (1)	0.8 (1.2)	0.8 (1.7)	1.0	0.8
Marketing & PHM	1 (1)	0.6 (1)	0.6 (1.4)	1.0	0.6
Crop Development	2 (3)	2.52 (3.9)	0.4 (1)	0.2	0.2
Cooperatives and Cooperation	3 (3)	0.91 (1.4)	0.4 (0.9)	0.5	0.1
Agriculture Mechanization	0 (1)	1.28 (2)	0 (0)	0.0	0.0
Grand Total	**47 (52)**	**66.3 (100)**	**46.9 (100)**	**0.7**	**1.0**

Source: www.rkvy.nic.in, April (2013)

Note: * Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY;
^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total;
** The ratio <1 indicates the allocation is not fully utilised, the ratio=1 indicates the allocation is exactly equal to the expenditure and the ratio =0 indicates the allocation has not spent yet;
PHM: Post Harvest Management; INM: Integrated Nutrient Management; NRM: Natural Resource Management;

Table 7.10.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	Above 0 to 1 crore		Above 0 to 10 crores		Grand Total*	
	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.
NRM	66.7	16.8	33.3	83.2	6(100)	8.5(100)
Horticulture	80.0	42.8	20.0	57.2	10(100)	8.3(100)
Animal husbandry	71.4	50.6	28.6	49.4	7(100)	5.2(100)
Dairy development	50.0	14.0	50.0	86.0	2(100)	4.8(100)
Micro/minor irrigation	0.0	0.0	100.0	100.0	1(100)	4.5(100)
Non farm activities	50.0	7.2	50.0	92.8	2(100)	3.6(100)
Innovative programmes	66.7	47.3	33.3	52.8	3(100)	3.4(100)
Organic farming / bio fertilizer	33.3	30.8	66.7	69.2	3(100)	3.2(100)
Fertilizers and INM	50.0	13.5	50.0	86.5	2(100)	2(100)
Extension	100.0	100.0	0.0	0.0	1(100)	0.9(100)
Seed	100.0	100.0	0.0	0.0	3(100)	0.8(100)
Fisheries	100.0	100.0	0.0	0.0	1(100)	0.8(100)
Marketing and PHM	100.0	100.0	0.0	0.0	1(100)	0.7(100)
Crop development	100.0	100.0	0.0	0.0	2(100)	0.5(100)
Cooperatives and cooperation	100.0	100.0	0.0	0.0	3(100)	0.5(100)
Grand Total	**72.4**	**32.5**	**27.7**	**67.6**	**47(100)**	**47(100)**

Source:www.rkvy.nic.in, April (2013);

Note: *Number in absolute figures; Figures in the parenthesis are percentage of accompanying absolute values;

Table 7.10.3: Sector-wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed	
	Number	Expenditure	Number	Expenditure
NRM	2	0.5	4	7.9
Horticulture	7	5.7	4	2.6
Animal Husbandry	2	1.3	6	3.9
Dairy Development	2	4.7	0	0.0
Micro/Minor Irrigation	0	0.0	1	4.5
Non Farm Activities	0	0.0	2	3.5
Innovative Programmes	0	0.0	3	3.3
Organic Farming / Bio Fertilizer	2	1.2	2	2.0
Fertilizers & INM	0	0.0	2	1.9
Extension	1	0.9	0	0.0
Seed	0	0.0	3	0.8
Fisheries	0	0.0	1	0.8
Marketing & PHM	0	0.0	1	0.6
Crop Development	2	0.1	1	0.3
Cooperatives And Cooperation	3	0.4	0	0.0
Agriculture Mechanization	1	0.0	0	0.0
Grand Total	**22**	**14.8**	**30**	**32.2**

Source: www.rkvy.nic.in, April (2013)

Table 7.10.4: Sector and Sub Sector wise Classification by Nature of Project under RKVY during 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project	State Flagship project	Total Non infrastructure	Grand Total
	Non infrastructure	Non infrastructure		
NRM	**100.0**	**0.0**	**100(8.5)**	**100(8.5)**
Others (NRM)	100.0	0.0	100(0.6)	100(0.6)
Soil treatment (acidic alkali, water logged)	100.0	0.0	100(0.3)	100(0.3)
Water conservation structures and watershed dev	100.0	0.0	100(7.7)	100(7.7)
Horticulture	**86.5**	**13.5**	**100(8.3)**	**100(8.3)**
Development of horticulture farms/ facilities	100.0	0.0	100(0.3)	100(0.3)
Fruits	100.0	0.0	100(1)	100(1)
Nurseries and green houses	52.7	47.3	100(2.4)	100(2.4)
Post harvest management	100.0	0.0	100(1.3)	100(1.3)
Vegetable	100.0	0.0	100(3.5)	100(3.5)
Animal husbandry	**100.0**	**0.0**	**100(5.2)**	**100(5.2)**
Animal health	100.0	0.0	100(0.7)	100(0.7)
Breed improvement	100.0	0.0	100(1.3)	100(1.3)
Feed and fodder	100.0	0.0	100(0.1)	100(0.1)
Others (animal husbandry)	100.0	0.0	100(3.1)	100(3.1)
Dairy development	**100.0**	**0.0**	**100(4.8)**	**100(4.8)**
Assistance to dairy unions/ farmers (inc training)	100.0	0.0	100(0.7)	100(0.7)
Dairy units to farmers	100.0	0.0	100(4.1)	100(4.1)
Micro/minor irrigation	**100.0**	**0.0**	**100(4.5)**	**100(4.5)**
Pump sets (diesel/electric)	100.0	0.0	100(4.5)	100(4.5)
Non farm activities	**100.0**	**0.0**	**100(3.6)**	**100(3.6)**
Others (NFA)	100.0	0.0	100(3.3)	100(3.3)
Post harvest processing facilities	100.0	0.0	100(0.3)	100(0.3)
Innovative programmes	**100.0**	**0.0**	**100(3.4)**	**100(3.4)**
Innovative programmes	100.0	0.0	100(3.4)	100(3.4)
Organic farming / bio fertilizer	**100.0**	**0.0**	**100(3.2)**	**100(3.2)**
Others (organic farming & bio-fertilizer)	100.0	0.0	100(1)	100(1)
Promotion of organic farming	100.0	0.0	100(2.2)	100(2.2)
Fertilizers and INM	**100.0**	**0.0**	**100(2)**	**100(2)**
Soil health cards and soil testing	100.0	0.0	100(2)	100(2)
Extension	**100.0**	**0.0**	**100(0.9)**	**100(0.9)**
Infrastructure	100.0	0.0	100(0.9)	100(0.9)
Seed	**100.0**	**0.0**	**100(0.8)**	**100(0.8)**
Others (seed)	100.0	0.0	100(0.3)	100(0.3)
Seed processing centers and storage	100.0	0.0	100(0.5)	100(0.5)
Seed testing lab	100.0	0.0	100(0.2)	100(0.2)
Fisheries	**100.0**	**0.0**	**100(0.8)**	**100(0.8)**
Fish marketing	100.0	0.0	100(0.8)	100(0.8)
Marketing and PHM	**100.0**	**0.0**	**100(0.7)**	**100(0.7)**
Setting up/ strengthening of market infrastructure	100.0	0.0	100(0.7)	100(0.7)

Crop development	**100.0**	**0.0**	**100(0.5)**	**100(0.5)**
Coarse cereals	100.0	0.0	100(0.4)	100(0.4)
Others (crop development)	100.0	0.0	100(0.1)	100(0.1)
Cooperatives and cooperation	**100.0**	**0.0**	**100(0.5)**	**100(0.5)**
Construction of godowns	100.0	0.0	100(0.5)	100(0.5)
Agriculture mechanization	**0.0**	**0.0**	**0(0.0)**	**0(0.0)**
Machines and equipment assistance	0.0	0.0	0(0.0)	0(0.0)
Grand total	**97.6**	**2.4**	**100(47)**	**100(47)**

Source: www.rkvy.nic.in, April (2013);
Note: NFA: Non Farm Activities; Figures in the parentheses are the respective absolute expenditure values in crore;

Table 7.10.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

(Rs. in crore)

Year	Revenue expenditure	Capital expenditure	Total	Total State budget	% agri. expenditure to State budget	% agri. expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	98	6	104	729	14.3	36.6	
2003-04*	86	3	90	718	12.5	29.2	
2004-05	100	7	106	1120	9.5	32.8	
2005-06	105	7	111	894	12.5	33.1	
2006-07	118	8	126	885	14.3	37.5	
10th Plan average	**507**	**31**	**538**	**4345**	**12.6**	**33.8**	
2007-08	129	9	137	987	13.9	39.2	
2008-09	141	11	152	1153	13.2	41.7	
2009-10	163	13	176	1242	14.2	46.2	
2010-11	161	7	169	1103	15.3	42.2	**3.6**
2011-12*	254	21	275	1741	15.8	66.1	
11th Plan average	**848**	**61**	**909**	**6226**	**14.5**	**47.1**	
% change over 10th plan	**67.2**	**97.2**	**68.9**	**43.3**			

Source: State Finances, RBI;
Note: * indicates Revised estimates and Agriculture and allied activities includes Irrigation and flood control; Budgetary expenditure accounts only developmental expenditure;
Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100; 10th and 11th plan value indicates average of the five years;

Table 7.10.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	98.2 (18.2)	233.9 (17.8)	138.1
2	Soil and Water Conservation	19 (3.6)	31.6 (2.4)	66.6
3	Animal Husbandry	59.5 (11.1)	148.2 (11.3)	149.1
4	Dairy Development	15.4 (2.9)	10.2 (0.8)	-33.9
5	Fisheries	9.6 (1.8)	25.8 (2)	169.7
6	Forestry and Wild Life	108.3 (20.1)	282.2 (21.4)	160.5
7	Plantations	12.5 (2.4)	17 (1.3)	36.5
8	Food Storage and Warehousing	57.3 (10.7)	74.3 (5.7)	29.6
9	Agricultural Research and Education	3.7 (0.7)	0.7 (0.1)	-82.7
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	25 (4.7)	48.3 (3.7)	93.4
12	Other Agricultural Programmes	55.5 (10.3)	164.4 (12.5)	196.3
13	Major and Medium Irrigation	0 (0)	0 (0)	0.0
14	Minor Irrigation	28.3 (5.3)	224.7 (17.1)	696.3
15	Flood Control and Drainage	36.6 (6.8)	35.5 (2.7)	-3.2
16	Others	11.8 (2.2)	23.4 (1.8)	99.1
Total		**540.2 (100)**	**1319.5 (100)**	**144.3**

Source: State Finances, RBI;

Note: *The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others;

Figures in the parenthesis are percentage to the respective total;

Table 7.10.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	19.6	21.0	58.5
2000-01	19.4	25.4	54.8
2001-02	19.3	27.1	53.4
2002-03	19.1	27.6	53.1
2003-04	19.0	28.0	52.8
2004-05	18.6	28.8	52.6
2005-06	17.6	29.4	53.0
2006-07	16.6	29.7	53.7
2007-08	16.1	30.3	53.6
2008-09	14.4	35.1	50.5
2009-10	8.6	55.1	36.2
2010-11	8.3	59.2	32.4
2011-12	8.1	59.1	32.8
2012-13	8.1	58.9	33.0

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05);

Table 7.10.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	6.2	7.3	1	1	152.6	36558
2003-04	7.8	7.8	1	1	155.1	39397
2004-05	5.2	7.8	1	1	157.7	41442
2005-06	4.1	9.8	1	1	159.7	43715
2006-07	0.1	6.0	1	1	159.7	43754
10th Plan Average	**4.7**	**7.7**	**1**	**1**	**157.0**	**40973**
2007-08	3.9	7.6	1	1	153.2	45466
2008-09	4.3	16.4	1	1	153.2	47416
2009-10	4.2	73.6	1	1	187.0	49423
2010-11	4.9	8.7	1	2	197.4	51823
2011-12	4.1	7.2	1	2	197.4	53963
11th Plan Average	**4.3**	**22.7**	**1**	**1**	**177.7**	**49618**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05);
10th and 11th plan value indicates average of the five years;
* Land productivity = agricultural GSDP/ha of NSA;

Table 7.10.9: Trend in Inputs Use in Sikkim

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigated to net sown area*	Irrigation intensity (%)	% gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	0.1	0.1	7.7	183.3	9.2	10.5
2003-04	0.1	0.1	7.7	183.3	9.1	3.4
2004-05	0.1	0.1	7.7	183.3	8.9	5.0
2005-06	0.1	0.2	18.2	135.7	15.4	2.8
2006-07	0.1	0.2	18.2	135.7	15.4	1.7
10th Plan Average	**0.1**	**0.1**	**11.9**	**164.3**	**11.6**	**4.7**
2007-08	0.1	0.2	18.2	121.4	14.4	0.0
2008-09	0.1	0.2	18.2	128.6	15.3	0.0
2009-10	0.1	0.2	18.2	142.9	13.9	0.0
2010-11	0.1	0.2	18.2	142.9	13.2	0.0
2011-12	0.1	0.2	18.2	142.9	13.2	0.0
11th Plan Average	**0.1**	**0.2**	**18.2**	**135.7**	**14.0**	**0.0**

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: 10th and 11th plan value indicates average of the five years;
***** indicates the Net irrigated area /Net sown area*100;
^ indicates Gross irrigated area /Gross sown area*100;

Table 7.10.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	-0.9	-0.7	0.2	-4.1	-0.2	4.7
Wheat	-2.7	-1.5	1.8	-13.4	-11.5	-3.0
Maize	-0.8	0.8	1.8	1.1	3.5	2.3
Ragi	-0.8	-0.6	0.0	3.2	5.4	1.7
Small Millets	21.5	26.3	2.0	28.5	45.5	5.4
Barley	1.8	0.1	-1.7	-7.8	-4.4	-2.7
Coarse Cereals	-0.3	1.0	1.3	1.1	3.3	2.2
Total Cereals	-0.7	0.3	1.1	-1.4	0.8	2.3
Other Pulses	1.0	2.1	0.9	-2.1	-1.4	-19.9
Total Pulses	1.0	2.1	0.9	7.7	8.5	0.2
Total Food grains	-0.6	0.4	1.0	-1.2	0.9	2.1
Rapeseed & Mustard	0.4	2.5	2.0	-1.1	3.5	-14.3
Soyabean	-0.9	-0.5	0.4	-0.4	1.7	2.4
Total Oilseeds	-0.2	0.9	1.1	-0.9	2.6	4.2

Source: Directorate of Economics and Statistics, GOI (2012-13);

Table 7.10.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	21.6	NA	6.2	0.0
2003-04	6.7	NA	25.2	0.0
2004-05	-4.2	NA	8.5	0.0
2005-06	4.3	NA	4.3	7.1
2006-07	2.1	NA	-1.4	0.0
10th plan average	**6.1**	NA	**8.6**	**1.4**
2007-08	0.0	NA	-6.3	20.0
2008-09	-14.3	-50.0	1.5	-5.6
2009-10	4.8	200.0	-0.7	-5.9
2010-11	-2.3	0.0	2.9	12.5
2011-12	NA	NA	NA	55.6
11th plan average	**-2.9**	**50.0**	**-0.6**	**15.3**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years;
NA: data not available;

7.11 TRIPURA

7.11.1. Background Information

Tripura is a State in North East India. It is the third-smallest State in the country, covers an area of 10,491 km^2 (4,051 sq. miles). According to 2011 population census, the total population of Tripura is 3,671,032. The land is covered with 60 per cent of the hilly terrain and forest area, out of which, 39 per cent comes under reserve forest. The economy is primarily an agrarian. The primary sector (agricultural) contributes about 64 per cent of total employment in the State and about 23 per cent of the State Domestic Product (SDP).

The State has rich natural resources including gas and forests. The local flora and fauna bear a very close affinity and resemblance with floral and faunal components of Indo-Malayan and Indo-Chinese sub-regions. The State is located in the bio-geographic zone of 9B-North-East hills and possesses an extremely rich bio-diversity. The chief occupation of the population in the State is agriculture. The main activity of more than three-fourths of the workers is agriculture. About 24.3 per cent of the State's geographical area is available for agriculture use. Some of the principal crops in the State are paddy, wheat, jute, sugar cane, potato, different types of fruit, turmeric, coconut and oil seeds. Tripura is known for quality pineapples, mostly the Queen & Kew varieties. Despite its rich agricultural and horticultural resources, the State could not harness them fully due to poor infrastructure and technology. In the recent past, the State has made significant progress in the secondary sector mainly due to higher investment in construction sub-sector. As a result of which, the share of secondary sector has increased from 23 per cent to 28 per cent during 11th plan period. Also, the service sector remained very steady during 10th and 11th plan periods and touched to 7.9 per cent in 11th plan against 7.1 percent during 10th plan. The contribution of primary sector in real term has declined (DES, 2010-11).

As of the challenges, basically, the State is characterised by geographical isolation; poor infrastructure, poor irrigation facilities; hilly slopes & soil erosion; communication bottlenecks; inadequate exploitation of natural resources (natural gas, rubber, forest etc.); low capital formation; high level of incidences of poverty and un-employment; the NH-44, the lifeline of Tripura, is often disrupted in the rainy season due to landslides near Patharkandi in Assam and Sonapur in Meghalaya which is a perennial problem to the State. The railway link is extremely poor; moreover, the State does not have any water transport system.

Priority Areas of Tripura

1. Poverty alleviation and employment generation in rural areas through Rural Development Programme.
2. Agriculture and allied sectors with strong emphasis on horticulture including post-harvest management and processing.
3. Social services like education, health, water supply and nutrition.
4. Power generation, transmission, grid connectivity and rural electrification.
5. Roads and bridges for ensuring better connectivity.
6. Sericulture and weaving for generation of income and employment to the women folk.
7. Tourism infrastructure and tourism services.
8. Trade with Bangladesh and creation of infrastructure for the same.
9. Decentralization of planning and involvement of the people in the development process.

9.11.2. Rationale of the RKVY Scheme's Evaluation in Tripura

Although, overall performance of the State's real economy remained impressive despite its several infrastructural bottlenecks as well as geographical isolation from main land of the country. For further development of agriculture, the Government of India (GoI) has initiated Rashtriya Krishi Vikas Yojana (RKVY) in 29th May 2007. It aims at achieving 4 per cent annual growths in the agriculture and its allied sector during 11th plan (2007-12). With this objective, the government has spent huge fund under the RKVY scheme for ensuring a holistic development of agriculture and allied sectors. The fund allocation under the scheme was based on the foundation of district and State agricultural plans (SAP). In this context, The States have high levels of autonomy and flexibility including approvals at the level of the State governments. The projects under the scheme are time bounded and encourages to converge with other programmes, such as, National Rural Employment Guarantee Scheme (NREGS), Swarna Jayanti Gram Swarojgar Yojana (SGSY) and Backward Region Grant Fund (BRGF), etc. Projects are being implemented under Stream-I (Project based) and Stream-II (Strengthening of schemes with resource gaps).

For effective utilization of the funds of RKVY, the State has set the targets in the SAP giving more stress on increasing the production of food grain by providing essential inputs in the form of improved seeds and fertilizers especially for the crops like maize and paddy; improving the land under jhum cultivation for increasing substantial area of cultivation. Irrigation facilities through water harvesting; distribution of agricultural machineries for increasing cropping intensity; creating infrastructural facilities for post harvest and marketing facilities, brooder houses, establishment of farmers training

centers, etc. were also emphasized. To increase farming, animal husbandry, dairy development and fisheries, soil treatment and enhancing nutrient supplements, extension activities on demonstration of fodder cultivation, etc. through various projects in the State have also initiated. Therefore, to understand the impact of various projects implemented in the State through RKVY is a challenging task. Agriculture sector involves multi-faceted institution, and develops in a cumulative and synergistic manner. Therefore, evaluation of RKVY in isolation is very difficult. Nevertheless, the present study tries to evaluate the impact of the scheme during the 11th plan with the assorted information collected from different agencies. In this study, impact evaluation of RKVY will be carried out as per the following broad parameters:

1. The impact evaluation of RKVY would be made for the period since its inception, covering the 11th Five Year Plan.
2. A comparison of the scheme's performance will be made between pre and post-RKVY period, i.e. before 2007-08 and after 2007-08.
3. Impact assessment needs to be made through increase in area, production and productivity of crops as well as change in physical infrastructures of the sector in the 11th FYP over the 10th FYP.
4. More importantly, expenditure spent by the scheme out of the allocated fund was taken as one of the major parameters of performance evaluation of the scheme, and output and outcome of the scheme were also evaluated.

9.11.3. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors. In fact, these are the projects which have contributed significantly for achieving targeted agricultural growth rate in the State. Table 9.11.1 represents the allocation and expenditure distribution across the sectors during 11th FYP under RKVY. The expenditure incurred under different sectors indicates the priority given by the state to these sectors for achieving the expected agriculture growth in the State. The sectors in the table arranged in descending order based on expenditure to know the order of priority. There were 16 broader sectors of agriculture covered under RKVY scheme in Tripura. It is evident from the Table 9.11.1 that the state has given higher preferences in terms of expenditure to 5 major sectors[19]. These sectors utilize 82.7 per cent of the total expenditure of the RKVY scheme and remaining 11 minor sectors utilized only 17.3 per cent of the total expenditure in the State.

[19] The 5 Sectors Crop Development, Animal Husbandry, Horticulture, Micro/Minor Irrigation and Marketing and PHM

The ratio of expenditure to allocation point out whether there was any diversion taking place in the priorities set initially as well to see the absorption capacity of funds in relation to allocation. Higher the ratio indicates closeness of expenditure and allocation, and signifies correct allocation of funds to expenditure. It is evident from the table that out of the 16 sectors in which RKVY funds were distributed in the state, three sectors; innovative programmes, Research and integrated pest management have made the expenditure equals to the allocation (with a ratio of 1) meaning that there was correct allocation and no deviations in the set priorities of the state at least in these sectors. In addition, the other eight sectors namely crop development, animal husbandry, horticulture, micro & minor irrigation, agriculture mechanization, organic/bio fertilizer, fertilizers and INM, and seed were also made the expenditure almost equal to the allocation with the ratio ranging from 0.7 to 0.9. By looking into the ratios, it is observed that the misallocation or divergence happened in the priorities set by the state in case of extension, NRM and integrates pest management sectors where the ratio was ranging from 0.1 to 0.3. However, the sectors; marketing and PHM and Fisheries have met 50 per cent of the allocation in terms of expenditure with the ratio 0.5.

In general it is possible to acknowledge that the funds provided by RKVY to the states have been broadly spent as allocated to the various State projects. At the overall, expenditure-allocation ratio was 0.7 in Tripura stated that out of the total allocated cost under RKVY, only 70 per cent was actually spent. However, the remaining amount to be spent on these sectors may be with the allocated list (of projects) which is yet to be initiated and or spilled over to the 12th FYP.

Further, expenditure per project was incurred highest in crop development with Rs. 5 crore and lowest in the non farm activities with Rs 0.2 crores. Likewise, expenditure and even allocation do followed almost same trend with respect to the major sectors. Interestingly, cost per project of a few minor sectors like organic farming / bio fertilizer, fertilizers and INM, research, seed, extension etc. were found to be higher when compared with a few major sectors (animal husbandry, horticulture).

Figure 7.11 depicts the share of total expenditure across the sectors. As stated above crop development accounts 43 per cent of the expenditure. It was followed by animal husbandry (almost 13 per cent), horticulture (almost 13 per cent), micro/minor irrigation (almost 8 per cent), marketing and PHM (almost 8 per cent) and others[20] accounts rest from the total expenditure (almost 18 per cent).

[20]Agriculture mechanization, fisheries, Innovative programmes, Organic farming/bio-fertilizer, Fertilizer and INM, Research, Seed, Extension, NRM, Integrated pest management and Non farm activities

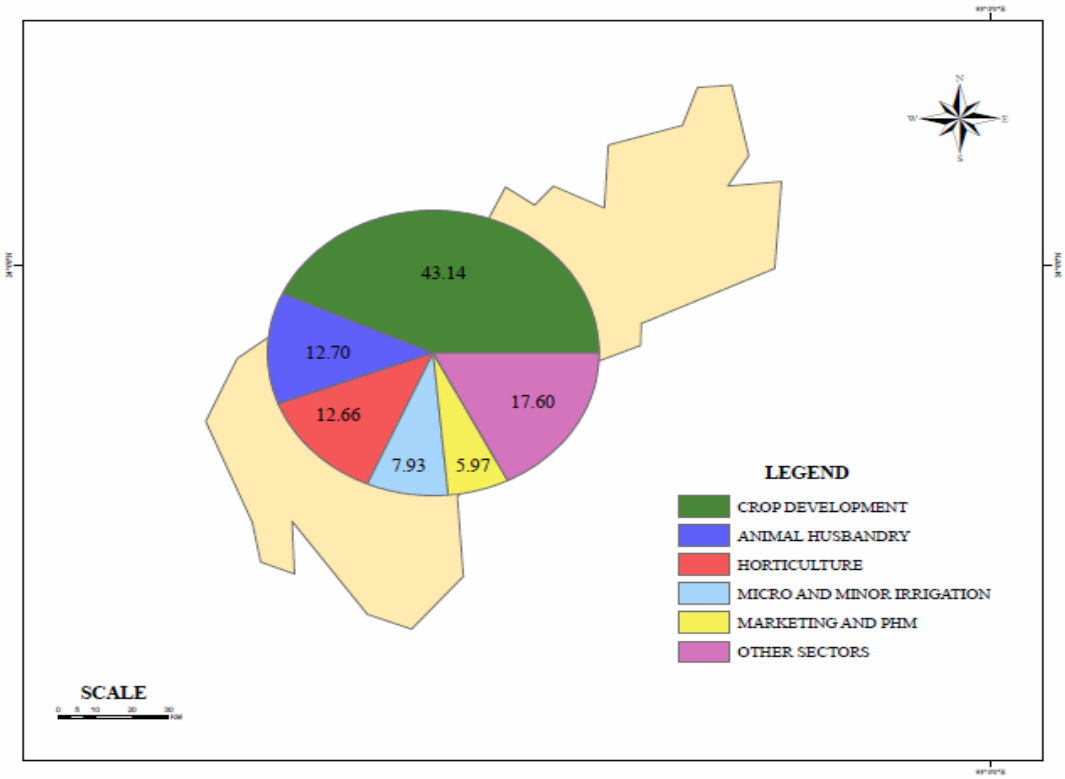

Figure 7.11: Share of Expenditure across Sectors

9.11.4. Sector-Wise Size of the Projects based on Expenditure

An effort was also made the classify the projects undertaken during the 11th FYP through RKVY funds in the State based on number and magnitude of projects and the results were shown in Table 9.11.2. The total amount spent under each RKVY projects have been divided into three categories; above Rs. 0 to 1 crore, above Rs. 1 crore to 10 crores and above 10 crores to 25 crores. From the Table, it is observed that more than half of the expenditure (52.6 per cent) under the RKVY scheme in the State spent on the category of above Rs. 1 crore to 10 crores which accounts for 33.9 per cent of the total projects undertaken in almost all the sectors (except few minor sectors; natural resources management, integrated pest management and Nonfarm activities). In the other hand, only 1.7 per cent of the projects contributed 32.1 per cent of the expenditure which fall under the category of above Rs. 10 crores to 25 crores, and all these projects covered only in the crop development sector. However, majority (64 per cent) of the projects accounts for 15.3 per cent of the total expenditure belongs to the category of above Rs. 0 to 1 crore and is covered in most of the sectors.

The amount under RKVY was spent 115 projects across 16 sectors but about 59 per cent of the projects falls under the top three sectors only in terms of expenditure incurred. All together 13 projects were found abandoned or not yet implemented during the 11th FYP

under RKVY scheme. Among the three major projects received sectors, animal husbandry made expenditure on 27 projects. It was followed by horticulture with 26 projects fisheries with 17 projects and so on.

7.11.5. Sector-Wise Expenditure according to Status

The sector-wise and status-wise expenditure is presented in Table 7.11.3. During the 11th Plan under RKVY scheme, Tripura was allocated 169 projects, of which expenditure incurred in 115 projects only. Out of the total expenditure incurred 83.6 per cent was spent on projects completed or substantially completed (106 projects) and about 16.39 (49 projects) per cent was spent on either approved or projects in progress and on on-going. Most of these projects completed or substantially completed were belong to the major sectors such as crop development, animal husbandry, horticulture and fisheries. Most of the projects in the RKVY were considered as normal projects; however, 5 projects were fall under the group of State flagship projects. As mentioned above, 54 projects were not initiated during the period, they might have considered as abandoned or not yet implemented. In this study we have divided the expenditure into two heads– expenditure for infrastructure asset projects and non-infrastructure projects.

7.11.6. Sector and Sub Sector Wise Distribution of Projects by Nature

With the lack of infrastructure and other agriculture development facilities, the state has tried to utilize the RKVY funds in very effective manner by allocating to different kinds of projects in the state. The projects are categorised under two category, normal projects and State flagship projects under RKVY during 11th plan. The nature wise expenditure on sector and sub-sector were presented in Table 7.11.4. Of the total Rs. 175.06 crores, Rs. 7.59 crores was spent on State flagship projects, which is estimated around 4.33 per cent of the total expenditure. While, the amount spent on infrastructure asset projects was Rs. 53.66 crores estimated to be around 30.66 per cent of the total expenditure. Of the total expenditure, crop development alone consumed 43.14 per cent of expenditure followed by animal husbandry and horticulture sectors with an expenditure of 13 per cent each. Out of total expenditure, the amount spent on creating infrastructure for the development of agriculture and allied sectors under RKVY during the 11th Plan was 30.7 per cent (Rs. 53.7 crores) through both normal & State flagship projects. The highest share (Rs. 13.9 crores which is about 8 per cent of the total expenditure and 26 per cent of the total infrastructure cost) in infrastructure development was incurred in micro/minor irrigation sector followed by micro and minor irrigation sector with an amount of Rs. 10.5 crores. The least expenditure spent under infrastructure category was crop development with Rs 1.01 crores. However, majority of infrastructure projects fall under normal project category in most of the sectors than state flagship projects. In case of State

flagship projects, the state has spent negligent share of expenditure on infrastructure projects especially in agriculture mechanization sector only but under normal projects, its share in terms of expenditure only on crop development and horticulture sectors.

Within the sub-sectors, paddy had contributed the highest (Rs. 58.5 crores) to the total expenditure and it was followed by others (crop development) with almost Rs. 16 crores, tube wells with Rs. 13.9 crores and so on. The lowest contribution was found in the sub sector on mushroom with Rs. 0.1 crore.

In addition to state flagship projects and normal projects, the RKVY has introduced 9 sub schemes across the states based on their potentiality from 2010-11. Out of these nine sub-schemes, Tripura has received allocation for two schemes namely, Vegetable Initiative for Urban Clusters and National Mission for Protein Supplement (NMPS) with an outlay of Rs. 3.50 crores but the whole expenditure was made only on Vegetable initiative for Urban Clusters.

7.11.7. Major Sector-Wise Stated and Actual Goals

RKVY aims at achieving the targeted annual growth of 4 per cent in the agriculture sector by ensuring a holistic development of agriculture and allied sectors. The projects under RKVY comprise of various components involving almost all the stakeholders in the agriculture and allied sectors. Therefore, it is very difficult to analyze the output and outcome of RKVY through any one of the model becuase the development and growth in agricultural production and productivity has always been a synergistic and cumulative effect of various ongoing schemes / projects and efforts put forth by all the stake holders involved.

An effort was made with this study to capture the impact of RKVY projects in terms of output and outcome. The Appendix Table 12 presents the summary of expected and actual output, and expected and actual outcome of the major sectors of RKVY projects in Tripura as provided in the website. Due to the non-availability of the data in the website it was very difficult to analyze the results with the annexure table and hence the impact in terms of different impact indicators were considered from the secondary information and discussed in the concluding remarks.

7.11.8. An Assessment of RKVY Performance in the State and Concluding Remarks

In Tripura, RKVY projects comprises of 16 sectors including 33 subsectors. Total number of 169 numbers projects allocated, but expenditure was incurred only on 115 numbers of projects within the 11th Plan period. In the state among the major sectors,

crop development utilized the major funds (43.2 percent). It was followed by animal husbandry with 12.8 per cent, horticulture with 12.7 per cent, and micro/minor irrigation with 8 percent, marketing and PHM with 6 per cent and so on. In the State to develop the infrastructure and assets in the agriculture and allied sectors, RKVY allocated significant share of funds (30.7 per cent of the total expenditure). These sectors might have played a crucial role for development of agriculture and its allied activities in the State. Besides, 4.4 per cent spent on the State flagship projects especially on crop development, horticulture and agriculture mechanization. Here, the major focus is given to the expenditure because impact can be depicted clearly on which expenditures are made. The State managed to utilize these funds effectively under the RKVY compared to other projects, probably due to autonomy and flexibility given to them. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and its allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the stated goals have been met. In order to validate the results from the available secondary data of RKVY projects, primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

An attempt was made to analyze the performance of agriculture in the state before and after the initiation of RKVY programme which have some indication about the performance of RKVY programme although it is difficult to partial out or deduce good or bad performance to RKVY factor alone as the agricultural sector involves multifaceted interventions, related with many other non-RKVY schemes directly or indirectly. Table 7.11.5 shows that the state has increased both revenue and capital expenditure in the 11th FYP compared to 10th FYP and state outlay budget also increased by 850 per cent in the 11th FYP over 10th Plan. But the percentage of agriculture to the State budget slightly reduced from 14 per cent in the 10th Plan to 12.6 per cent in the 11th FYP, although per cent share of agricultural expenditure to agricultural Gross State Domestic Product (GSDP) increased from 10.7 per cent in 10th FYP to almost 50 per cent in the 11th FYO. Out of the total expenditure in agriculture in the state, RKVY shared was 1.6 per cent of the total expenditure in the in 11th FYP. If we look into the state budgetary composition on agriculture and its allied sectors in Tripura, the highest per cent change over the previous Plan happened in agriculture research and education (almost 8318 per cent). It was followed by forestry and wild life (almost 142 per cent), crop husbandry (almost 127 per cent), plantation almost 126 per cent and so on (Table 7.11.6).

The GSDP at factor cost (2004-05) by industry origin shows that the relative share of agriculture and allied activities and Services sectors to the total GSDP declined in the state from 31.1 per cent in 1999-2000 to 23.2 per cent in 2012-13, whereas industry share has increased slightly from 16.3 per cent in 1999-00 to 26.7 per cent in 2012-13, but the

service sector share slightly reduced from 52.3 per cent to almost 50 per cent in the year 2012-13 (Table 7.11.7). The growth in overall GSDP has increased from almost 7 per cent in 10th FYP to almost 10 per cent in 11th FYP; again the GSDP growth in agriculture has significantly increase from average of almost 4 per cent in 10th Plan to average of almost 8 per cent in 11th FYP. No change in Net Sown Area, and Gross Cropped Area was observed in the 10th & 11th Plans. However, there was a significant increase in cropping intensity as well as irrigation intensity in the state during 11th Plan compared to 10th Plan (Table 7.11.8 & 7.11.9). The significant increase in land productivity may be due to inflation factor (Table 8). The growth rate in area, yield and production of major crops in the state shows a mixed bundle where there a marginal increase in the area and production of rice and total food grains (Table 7.11.10). The average annual growth in production and productivity of livestock products and fisheries in the Tripura presented in Annexure Table 7.11.11 depicts that there was a significant increase in milk and fish production when compared to 10th Plan over 11th Plan.

TABLES

Table 7.11.1: Sector-Wise Allocation and Expenditure under RKVY during 11th FYP

(Rs. Crore)

Sectors	No. of project*	Allocation^	Expenditure^	Expenditure allocation ratio **	Expenditure per Project
1	**2**	**3**	**4**	**5=4/3**	**6=4/2**
Crop Development	15(27)	105.9 (40.2)	75.5 (43.2)	0.7	5.0
Animal Husbandry	27(35)	32.7 (12.4)	22.2 (12.8)	0.7	0.8
Horticulture	26(34)	27.7 (10.6)	22.2 (12.7)	0.8	0.9
Micro/Minor Irrigation	5(6)	15.9 (6.1)	13.9 (8)	0.9	2.8
Marketing & PHM	4(9)	21.9 (8.4)	10.5 (6)	0.5	2.6
Agriculture Mechanization	5(7)	7.9 (3.1)	6.6 (3.8)	0.8	1.3
Fisheries	17(28)	11.8 (4.5)	5.4 (3.1)	0.5	0.3
Innovative Programmes	3(3)	4.1 (1.6)	4.1 (2.4)	1.0	1.4
Organic Farming / Bio Fertilizer	4(4)	4.9 (1.9)	3.5 (2.1)	0.7	0.9
Fertilizers & INM	2(4)	4.2 (1.6)	2.9 (1.7)	0.7	1.5
Research	1(1)	2.8 (1.1)	2.8 (1.6)	1.0	2.8
Seed	2(3)	2.7 (1.1)	2.3 (1.4)	0.9	1.1
Extension	1(3)	6.8 (2.6)	1.8 (1)	0.3	1.8
NRM	1(2)	13.5 (5.2)	0.9 (0.6)	0.1	0.9
Integrated Pest Management	1(1)	0.4 (0.2)	0.4 (0.3)	1.0	0.4
Non Farm Activities	1(2)	0.8 (0.4)	0.2 (0.1)	0.2	0.2
Grand Total	**115(169)**	**264.1 (100)**	**175.1 (100)**	**0.7**	**1.5**

Source: www.rkvy.nic.in, April, (2013);
Note: * Figures in the parenthesis in column 2 indicate number of projects based on allocation under RKVY;
^Figures in the parenthesis in column 3 and 4 indicate the percentage to the respective total;
PHM: Post Harvest Management; NRM: Natural Resource Management;
** The ratio <1 indicates the allocation is not fully utilised, the ratio=1 indicates the allocation is exactly equal to the expenditure and the ratio =0 indicates the allocation has not spent yet;

Table 7.11.2: Sector Classification of Project according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Grand Total*	
	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.	No. of projects	Exp.
Crop development	53.3	4.4	33.3	21.2	13.3	74.4	15(100)	75.6(100)
Animal husbandry	66.7	27.0	33.3	73.0	0.0	0.0	27(100)	22.3(100)
Horticulture	76.9	37.4	23.1	62.6	0.0	0.0	26(100)	22.2(100)
Micro/minor irrigation	0.0	0.0	100.0	100.0	0.0	0.0	5(100)	13.9(100)
Marketing and PHM	25.0	4.4	75.0	95.6	0.0	0.0	4(100)	10.5(100)
Agriculture mechanization	80.0	31.7	20.0	68.3	0.0	0.0	5(100)	6.6(100)
Fisheries	94.1	77.8	5.9	22.3	0.0	0.0	17(100)	5.4(100)
Innovative programmes	33.3	1.2	66.7	98.8	0.0	0.0	3(100)	4.1(100)
Organic farming / bio fertilizer	75.0	28.6	25.0	71.4	0.0	0.0	4(100)	3.6(100)
Fertilizers and INM	0.0	0.0	100.0	100.0	0.0	0.0	2(100)	3(100)
Research	0.0	0.0	100.0	100.0	0.0	0.0	1(100)	2.8(100)
Seed	0.0	0.0	100.0	100.0	0.0	0.0	2(100)	2.3(100)
Extension	0.0	0.0	100.0	100.0	0.0	0.0	1(100)	1.8(100)
Natural resource management	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	0.9(100)
Integrated pest management	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	0.4(100)
Non farm activities	100.0	100.0	0.0	0.0	0.0	0.0	1(100)	0.2(100)
Grand Total	**64.4**	**15.3**	**33.9**	**52.6**	**1.7**	**32.1**	**115(100)**	**175.1(100)**

Source: same as table 1;

Note: Exp: Expenditure; *indicates the number in absolute figures**;**

Table 7.11.3: Sector-Wise Classification of Projects by their Status under RKVY during the 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed		Abandoned/not yet implemented	
	Number	Expenditure	Number	Expenditure	Number	Expenditure
Crop Development	13	27.5	13	48.0	1	0.0
Animal Husbandry	7	0.2	24	22.1	4	0.0
Horticulture	8	0.8	24	21.4	2	0.0
Micro/Minor Irrigation	0	0.0	5	13.9	1	0.0
Marketing & PHM	4	0.0	4	10.5	1	0.0
Agriculture Mechanization	2	0.0	5	6.6	0	0.0
Fisheries	13	0.2	15	5.2	0	0.0
Innovative Programmes	0	0.0	3	4.1	0	0.0
Organic Farming / Bio Fertilizer	0	0.0	4	3.5	0	0.0
Fertilizers & INM	1	0.0	2	3.0	0	0.0
Research	0	0.0	1	2.8	0	0.0
Seed	1	0.0	2	2.3	0	0.0
Extension	0	0.0	1	1.8	2	0.0
NRM	0	0.0	1	0.9	1	0.0
Integrated Pest Management	0	0.0	1	0.4	0	0.0
Non Farm Activities	0	0.0	1	0.2	1	0.0
Grand Total	**49**	**28.6**	**106**	**146.4**	**13**	**0.0**

Source: same as table 1;

Table 7.11.4: Sector and Sub Sector wise Classification by Nature of the Project under RKVY during 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project		State Flagship project		Total		Grand Total
	Infra structure	Non infra structure	Infra structure	Non infra structure	Infra structure	Non infra structure	
Crop development	**1.3**	**90.2**	**0.0**	**8.4**	**1.4(1.1)**	**98.7(74.6)**	**100(75.6)**
Maize	0.0	100.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
Others (crop development)	6.2	56.1	0.0	37.7	6.2(1.1)	93.9(15.2)	100(16.2)
Paddy	0.0	99.6	0.0	0.4	0(0)	100(58.5)	100(58.5)
Pulses	0.0	100.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Animal husbandry	**7.8**	**92.2**	**0.0**	**0.0**	**7.8(1.8)**	**92.3(20.6)**	**100(22.3)**
Animal health	0.0	100.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Breed improvement	0.0	100.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Extension and training	0.0	100.0	0.0	0.0	0(0)	100(5.3)	100(5.3)
Feed and fodder	0.0	100.0	0.0	0.0	0(0)	100(0.3)	100(0.3)
Infrastructure	2.9	97.1	0.0	0.0	3(0.3)	97.1(7.5)	100(7.8)
Others (animal husbandry)	23.6	76.4	0.0	0.0	23.6(1.5)	76.5(4.9)	100(6.4)
Poultry	0.0	100.0	0.0	0.0	0(0)	100(1.7)	100(1.7)
Horticulture	**21.8**	**75.5**	**0.0**	**2.7**	**21.8(4.9)**	**78.3(17.4)**	**100(22.2)**
Development of horticulture farms/ facilities	0.0	100.0	0.0	0.0	0(0)	100(0.6)	100(0.6)
Floriculture	100.0	0.0	0.0	0.0	100(0.6)	0(0)	100(0.6)
Fruits	18.1	74.7	0.0	7.2	18.1(1.5)	82(6.8)	100(8.3)
Mushroom	0.0	100.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Others (horticulture)	27.3	72.7	0.0	0.0	27.3(2.8)	72.8(7.4)	100(10.2)
Tissue culture	0.0	100.0	0.0	0.0	0(0)	100(0.5)	100(0.5)
Vegetable	0.0	100.0	0.0	0.0	0(0)	100(2.1)	100(2.1)
Micro/minor irrigation	**100.0**	**0.0**	**0.0**	**0.0**	**100(13.9)**	**0(0)**	**100(13.9)**
Tube wells	100.0	0.0	0.0	0.0	100(13.9)	0(0)	100(13.9)
Marketing and post harvest management	**100.0**	**0.0**	**0.0**	**0.0**	**100(10.5)**	**0(0)**	**100(10.5)**
Setting up/ strengthening of market infrastructure	100.0	0.0	0.0	0.0	100(10.5)	0(0)	100(10.5)
Agriculture mechanization	**90.6**	**0.0**	**9.4**	**0.0**	**100(6.6)**	**0(0)**	**100(6.6)**
Machines and equipment assistance	89.8	0.0	10.2	0.0	100(6.1)	0(0)	100(6.1)

Others (agri. Mechanization)	100.0	0.0	0.0	0.0	100(0.6)	0(0)	100(0.6)
Fisheries	**55.6**	**44.4**	**0.0**	**0.0**	**55.7(3.1)**	**44.4(2.4)**	**100(5.4)**
Farmers fish ponds/ assistance including training	0.0	100.0	0.0	0.0	0(0)	100(1.6)	100(1.6)
Fish marketing	100.0	0.0	0.0	0.0	100(0.2)	0(0)	100(0.2)
Infrastructure/ ponds of fisheries/ dept/ agency	100.0	0.0	0.0	0.0	100(2.6)	0(0)	100(2.6)
Others (fisheries)	19.5	80.5	0.0	0.0	19.5(0.3)	80.6(0.9)	100(1.2)
Innovative programmes/ training/ capacity building/ others	**37.6**	**62.4**	**0.0**	**0.0**	**37.7(1.6)**	**62.4(2.6)**	**100(4.1)**
Innovative programmes	38.1	61.9	0.0	0.0	38.1(1.6)	62(2.5)	100(4.1)
Others (innovative programmes, training & others)	0.0	100.0	0.0	0.0	0(0)	100(0.1)	100(0.1)
Organic farming / bio fertilizer	**82.8**	**17.2**	**0.0**	**0.0**	**82.8(2.9)**	**17.3(0.7)**	**100(3.6)**
Promotion of bio fertilizer	100.0	0.0	0.0	0.0	100(2.5)	0(0)	100(2.5)
Vermi composting	39.9	60.1	0.0	0.0	40(0.4)	60.1(0.7)	100(1.1)
Fertilizers and INM	**41.1**	**58.9**	**0.0**	**0.0**	**41.1(1.3)**	**59(1.8)**	**100(3)**
Fertiliser labs	100.0	0.0	0.0	0.0	100(1.3)	0(0)	100(1.3)
Micro nutrients labs	0.0	100.0	0.0	0.0	0(0)	100(1.8)	100(1.8)
Research	**100.0**	**0.0**	**0.0**	**0.0**	**100(2.8)**	**0(0)**	**100(2.8)**
Agri research project	100.0	0.0	0.0	0.0	100(2.8)	0(0)	100(2.8)
Seed	**47.5**	**52.5**	**0.0**	**0.0**	**47.6(1.1)**	**52.5(1.2)**	**100(2.3)**
Seed production	0.0	100.0	0.0	0.0	0(0)	100(1.2)	100(1.2)
Tissue culture	100.0	0.0	0.0	0.0	100(1.1)	0(0)	100(1.1)
Extension	**100.0**	**0.0**	**0.0**	**0.0**	**100(1.8)**	**0(0)**	**100(1.8)**
Kvks / knowledge centers / dissemination	100.0	0.0	0.0	0.0	100(1.8)	0(0)	100(1.8)
NRM	**100.0**	**0.0**	**0.0**	**0.0**	**100(0.9)**	**0(0)**	**100(0.9)**
Water conservation structures and watershed dev	100.0	0.0	0.0	0.0	100(0.9)	0(0)	100(0.9)
Integrated pest management	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(0.4)**	**100(0.4)**
Integrated pest management	0.0	100.0	0.0	0.0	0(0)	100(0.4)	100(0.4)
Non farm activities	**0.0**	**100.0**	**0.0**	**0.0**	**0(0)**	**100(0.2)**	**100(0.2)**
Post harvest processing facilities	0.0	100.0	0.0	0.0	0(0)	100(0.2)	100(0.2)
Grand total	**30.3**	**65.4**	**0.4**	**4.0**	**30.7(53.7)**	**69.4(121.4)**	**100(175.1)**

Source:same as table 1;

Note: Figures in the parentheses are the respective absolute expenditure values in crore;

Table 7.11.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

(Rs. in crore)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. Crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	% of RKVY expenditure to agri. expenditure
2002-03	170	60	230	1614	14.3	11.2	
2003-04*	153	47	200	1574	12.7	9.3	
2004-05	155	93	249	1760	14.1	11.1	
2005-06	170	70	240	1845	13.0	10.4	
2006-07	184	103	287	1797	16.0	11.5	
10th Plan	**833**	**372**	**1205**	**8590**	**14.0**	**10.7**	
2007-08	218	77	295	2083	14.2	10.1	
2008-09	244	101	346	2412	14.3	11.2	
2009-10	303	113	416	2921	14.2	12.8	**1.6**
2010-11	3163	130	3293	34516	9.5	95.1	
2011-12*	4110	178	4288	39700	10.8	115.3	
11th Plan	**8039**	**599**	**8638**	**81631**	**12.6**	**48.9**	
% change over 10th plan	**864.9**	**61.0**	**616.6**	**850.3**			

Source: State Finances, RBI;

Note: * indicates Revised estimates, rest all accounts; Agriculture and allied activities includes Irrigation and flood control; 10th and 11th plan average value indicates average of the five years;

Budgetary expenditure is accounts only developmental expenditure; Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100;

Table 7.11.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs. crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	337.1 (27.8)	765.5 (32.7)	127.1
2	Soil and Water Conservation	49.6 (4.1)	75.1 (3.2)	51.5
3	Animal Husbandry	135.9 (11.2)	251.5 (10.8)	85.1
4	Dairy Development	4.9 (0.5)	5.6 (0.3)	14.1
5	Fisheries	70.5 (5.8)	126.5 (5.4)	79.5
6	Forestry and Wild Life	175 (14.4)	424.1 (18.1)	142.4
7	Plantations	0.8 (0.1)	1.8 (0.1)	125.6
8	Food Storage and Warehousing	40 (3.3)	62 (2.7)	55.1
9	Agricultural Research and Education	0.7 (0.1)	57.3 (2.5)	8319.1
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	53.6 (4.5)	97.1 (4.2)	81.1
12	Other Agricultural Programmes	12 (1)	21.7 (1)	81.3
13	Major and Medium Irrigation	0 (0)	0.2 (0.1)	0.0
14	Minor Irrigation	81 (6.7)	127.8 (5.5)	57.7
15	Flood Control and Drainage	31.8 (2.7)	35.6 (1.6)	11.8
16	Others	223.8 (18.4)	296.7 (12.7)	32.6
	Total	**1216.3 (100)**	**2347.8 (100)**	**93.0**

Source: State Finances, RBI;

***Note:** The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total;

Table 7.11.7: Percentage Sharwe of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 prices)

(Per cent)

Year	Agri. and allied	Industry	Services
1999-00	31.1	16.3	52.3
2000-01	26.6	22.7	50.7
2001-02	28.3	23.0	48.8
2002-03	26.4	23.4	50.2
2003-04	26.2	25.2	48.8
2004-05	25.1	24.2	50.7
2005-06	24.4	25.3	50.2
2006-07	24.4	26.2	49.4
2007-08	26.6	24.5	48.9
2008-09	25.6	24.6	49.8
2009-10	24.4	25.0	50.6
2010-11	24.0	25.4	50.5
2011-12	23.8	25.8	50.5
2012-13	23.2	26.7	50.1

Source: Directorate of Economics and Statistics, GOI (2012-13)
Note: GSDP at constant price (2004-05);

Table 7.11.8: Year over Year Growth in State Agricultural Economy (at 2004-05 prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-1.0	6.4	3	3	110.4	73250
2003-04	5.2	5.9	3	3	103.9	77069
2004-05	3.4	8.1	3	3	106.1	79701
2005-06	3.2	5.8	3	3	106.8	82260
2006-07	8.1	8.3	3	3	107.9	88927
10th Plan Average	**3.8**	**6.9**	**3**	**3**	**107.0**	**80242**
2007-08	17.2	7.7	3	3	104.3	104201
2008-09	5.7	9.4	3	3	105.4	110102
2009-10	5.2	10.7	3	3	110.4	115828
2010-11	6.7	8.2	3	4	136.7	135220
2011-12	7.4	8.7	3	4	136.7	145238
11th Plan Average	**8.4**	**8.9**	**3**	**3**	**118.7**	**122118**

Source: Directorate of Economics and Statistics, GOI (2012-13);
Note: GSDP at constant price (2004-05); land productivity = agricultural GSDP/ha of NSA;
10th and 11th plan average value indicates average of the five years;

Table 7.11.9: Trend in Inputs Use in Tripura

Year	Net irrigated area (lakh ha)	Gross irrigated area (lakh ha)	% net irrigated to net sown area*	Irrigation intensity (%)	%gross irrigated to gross sown area^	Fertilizer consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5=3/2*100**	**6**	**7**
2002-03	0.6	1.1	21.8	175.4	34.6	22.0
2003-04	0.6	1.1	21.8	177.0	37.1	37.2
2004-05	0.6	1.1	21.8	177.0	36.4	34.7
2005-06	0.6	1.0	20.7	174.1	33.8	39.2
2006-07	0.6	1.0	20.7	172.4	33.1	34.5
10th Plan Average	**0.6**	**1.0**	**21.4**	**175.2**	**35.0**	**33.5**
2007-08	0.6	1.0	20.7	174.1	34.6	42.2
2008-09	0.6	1.0	20.7	165.5	32.5	47.5
2009-10	0.6	1.0	20.7	169.0	31.7	48.6
2010-11	0.6	1.2	23.4	203.3	34.9	51.6
2011-12	0.6	1.2	23.4	203.3	34.9	60.3
11th Plan Average	**0.6**	**1.1**	**21.8**	**183.1**	**33.7**	**50.1**

Source: Directorate of Economics and Statistics, GOI (2012-13)

Note: * indicates the Net irrigated area /Net sown area*100; ^ indicates Gross irrigated area /Gross sown area*100; 10th and 11th plan average value indicates average of the five years;

Table 7.11.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	**Production**	**Yield**	**Area**	**Production**	**Yield**
Rice	0.4	1.5	12.6	1.3	3.0	-14.3
Wheat	-1.8	15.2	116.1	-19.2	-17.6	-10.0
Maize	4.9	4.7	-7.1	10.9	21.9	57.8
Coarse Cereals	-300.6	308.7	-6.2	-147.0	-90.4	70.7
Total Cereals	1.4	1.5	11.7	1.5	3.7	-13.1
Total Food grains	0.3	0.8	-3.1	2.5	3.9	-13.1
Sesamum	3.8	5.6	-21.4	0.3	1.8	-40.6
Rapeseed & Mustard	-6.8	-6.3	-1.2	5.7	5.2	-40.1
Total Oilseeds	-132.1	400.6	-3.2	67.3	-360.2	-20.3

Source: Directorate of Economics and Statistics, GOI (2012-13)

Table 7.11.11: Average Annual Growth in Production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	-12.2	NA	63.9	0.2
2003-04	6.3	0.0	1.0	-39.1
2004-05	2.4	125.0	6.6	10.3
2005-06	1.2	33.3	2.7	20.3
2006-07	2.3	8.3	8.5	19.9
10th plan	**0.0**	**41.7**	**16.5**	**2.3**
2007-08	2.2	7.7	10.6	26.6
2008-09	5.5	35.7	5.2	-0.7
2009-10	4.2	10.5	3.9	17.4
2010-11	4.0	9.5	8.8	16.4
2011-12	NA	NA	NA	8.3
11th plan*	**4.0**	**15.9**	**7.1**	**13.6**

Source: BAHS, www.Indiastat.com

Note: 10th and 11th plan average value indicates average of the five years; NA: data not available;

7.12 WEST BENGAL

7.12.1. Background Information

West Bengal is a state in the eastern region of India and it is bordered by the countries of Nepal, Bhutan, and Bangladesh, and the Indian states of Odisha, Jharkhand, Bihar, Sikkim, and Assam. Bangladesh, Sikkim and Bhutan lie on the north, Assam lies on the north east of West Bengal. Bihar and Jharkhand are situated on the western side of the state. It is the 13th largest state in the country, with a total geographical area of 88,750 sq.km (34,267sqmt) accounts for 2.70 per cent of the Country's total geographical area. According to 2011 census, the state ranked fourth in terms of total population (91,276,115 persons) in the country. The economy of West Bengal is basically on agriculture based. It is the third largest contributor in agricultural sector of real GDP. In the state, around 68.13 percent of the total population living in rural areas while agriculture as the primary feeder of rural economy. Agriculture in the State is small farmer centric with 90 per cent of the cultivators being small and marginal farmers. Small and marginal farming communities hold 84 per cent of the State's agricultural lands.

Agriculture in West Bengal marked the end of 'impasse' in the 1980s. Agriculture was predominant and 1981-82 was the golden year for the state, as 1990 approaches there was a gradual shift in increase in the contribution of service sector. This is the stage when West Bengal gradual transformed from being an agrarian state to a service sector dominated state. The state has healthy services sector growing at a rate of 10.46 per cent where as agriculture sector was growing at a dismal 1.87 per cent. Nonetheless, the primary output has more than doubled in two decades cumulatively (***Economic Review West Bengal, Group 10, Section D, 2012***).

The growth rates of food and non-food crops decelerated in most of the agricultural states in India since the early 1990s. A significant fall in public sector capital formation in agriculture, declining trend in the supply of institutional credit along with the some technological reasons have been the major responsible factors behind the recent deceleration in agricultural growth. In this context, the Rashtriya Krishi Vikas Yojana (RKVY) scheme introduced by the GoI with an anxiety to the slow growth of agriculture and allied sector, aimed at achieving 4 per cent annual growth in the agriculture sector during 11th plan (2007-12) has made an immense impact on boosting the agricultural growth in the state. In addition, land reforms carried out by the Government of West Bengal, combined with the operationalisation of the elected Panchayati Raj institutions provided both resources and incentives to the small and marginal peasants and thereby helped raise the rates of agricultural growth to a historic high. During 2011-12, the growth performance of West Bengal has performed India's growth in agricultural sector. The agriculture sector saw a growth of 19.95 per cent (nominal) while India's average was at around 9.45 per cent. But in real terms, we didn't see so much growth in this sector.

7.12.2. Distribution of Allocation and Expenditure across Sectors

This section focuses on distribution of allocation and expenditure of RKVY projects across sectors. The expenditure incurred under different sectors indicates the priority given by the state for achieving the growth rate targeted in the State Agricultural Plan during the 11th FYP. These sectors were arranged in the descending order based on the expenditure incurred to know the order of state priorities. The expenditure-allocation ratio was worked out to understand the deviation in the expenditure incurred and allocation made. Higher the expenditure-allocation ratio indicates the closeness of allocation and expenditure. It is observed from the Table 7.12.1 that the state has attached high priority to the seven major sectors namely animal husbandry, natural resource management, fisheries, horticulture, marketing and post harvest management, seed and cooperatives and cooperation, which accounts for 85.57 per cent of the total expenditure while the remaining 13 minor sectors utilized only 14.43 per cent of the total expenditure in the State (Figure 7.12). Among these seven major sectors, the state has utilized almost half of the amount on animal husbandry and natural resources management.

The ratio of expenditure to allocation of funds shows that there are no much deviations in allocation made and expenditure incurred in the fisheries, information technology, horticulture, natural resources management, extension, organic farming/bio-fertilizer sectors wherein the ratio is more than 0.8 to 1. There is smaller variation in the allocation made and expenditure incurred in case of animal husbandry, marketing and post harvest management, cooperatives and cooperation, dairy development, micro and minor irrigation, and fertilizers and integrated nutrient management sectors with a ratio of more 0.6. But in the rest of the sectors, the ratio shows the higher variation between the allocation made and expenditure incurred with a ratio <0.5 and the scenario is very worse in case of agricultural mechanization, innovative programs and integrated pest management sectors as the ratio was 0.2 for these sectors. There was a complete deviation in the allocation made and expenditure incurred in case of research, sericulture, and crop development sectors wherein the expenditure seems to be nil and the hence the ratio shows zero.

Most of the cases, the allocation and expenditure followed the same trend especially in case of major sectors. But this ratio analysis point out that there was a divergence in priorities set initially by the state in terms of allocation and absorption capacity of funds especially in few minor sectors.

The expenditure per project was incurred highest in natural resource management sector with Rs. 4.33 crores and lowest in the Information technology sector with Rs.0.11 crores. Interestingly, expenditure per project was also high in case of few minor sectors such as fertilisers and INM, and dairy development. The above results are clearly seen in the Table 7.12.1, which represent distribution of allocation, expenditure and expenditure per project across sectors.

Looking into the distribution of projects across the state, it is observed that the state has made investments through RKVY for creating income earning activities and to help the small and marginal farmers as the target set in the state agricultural plan. Even though the state has achieved highest growth in the 1980s, the decelerated growth was retraced in the 11th plan period through the proper utilization of RKVY funds by spending on various projects in agriculture and allied activities.

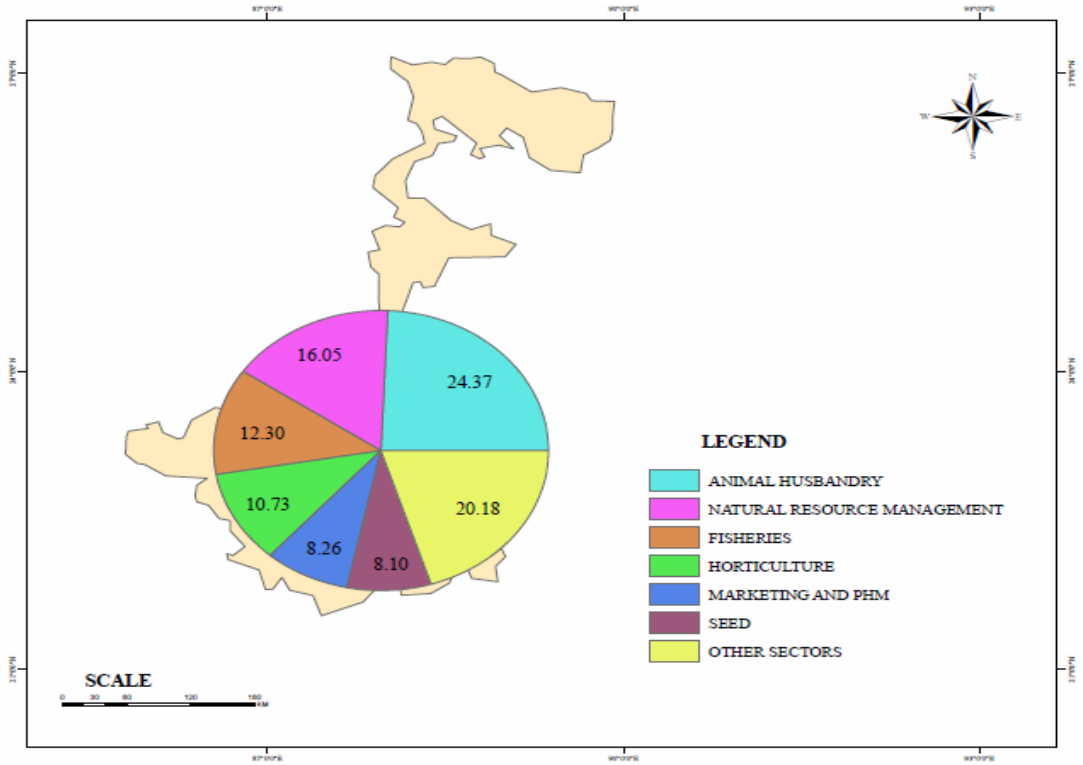

Figure 7.12: Share of Expenditure across Sectors

Note: Minor sector include Cooperatives and cooperation, Agriculture mechanization, Micro/minor irrigation, Dairy development, Extension, Fertilisers and INM, Nonfarm activities, Innovative programmes/ training/ capacity building/ others, Organic farming / bio fertilizer, Integrated pest management, Research (Agri/Horti/Animal Husbandry etc), Information technology, Sericulture and Crop development

7.12.3. Sector-Wise Size of the Projects based on the Expenditure

The projects undertaken during the 11th FYP under the RKVY were classified based on the expenditure incurred to understand the numbers and magnitude of the projects in the state. The results were shown in the Table 7.12.2. For the classification, the total amount spent per project have been divided into three groups namely Rs. 0-1 crore, Rs. 1-10 crores, and Rs. 10-25 crores. Out of the total expenditure made, 63.77 per cent of the projects incurred only 13.58 per cent of the expenditure at the bottom of spending less than one crore amounts on each project covering most of the sectors. On the contrast, 2.32 per cent of the projects constituted 25.04 per cent of the expenditure belonging to the category of 10 crores to 25 crores per project covered under only

three major sectors such as animal husbandry, natural resources management and seed. The remaining projects were belong to the category of 1 crore to 10 crores comprised of 33.92 per cent of the projects and 61.4 per cent of the expenditure spent on most of the sectors except few minor sectors.

Even though, allocation was made for 454 projects in the state, expenditure was incurred on 345 projects only. In terms of spread of the projects across the sectors, West Bengal seems to be utilized RKVY funds efficiently across most (18) of the sectors and projects (345) compare to other states in the east and north eastern states. In many cases, the projects under the category of 0 to 1 crore were clustered around one year span and hence the efficiency of the projects will be better and most of them will be completing within the stipulated period.

7.12.4. Sector-Wise Expenditure according to Status

The sector-wise and status-wise expenditure are presented in the Table 7.12.3. The table reveals that out of the total expenditure spent 81.43 per cent (Rs. 395.7) was incurred on completed or substantially projects alone (which constitute about 72.69 per cent of the projects) and the rest (18.57 per cent of the expenditure) was in in-progress/ongoing projects. Out of all the sectors, animal husbandry, natural resources management, horticulture, marketing and PHM, and agriculture mechanization have spent most of the amount on completed and substantially completed projects. The least spent sectors were information technology, research (Agri/Horti/Animal Husbandry etc), organic farming/Bio-fertilizer and integrated pest management with Rs. 0.11, Rs. 0.21, Rs. 0.70 and Rs. 0.79 crores respectively.

The sector like crop development and sericulture has no completed and substantially completed projects although the projects were meant to be completed in 11th five year plan but it has been spilled over to 12th five year plan. There are no either abandoned or not yet implemented projects as per the allocations in the state.

7.12.5. Sector and Sub Sector Wise distribution of the Projects by Nature

Table 7.12.4 presents sector and sub-sector-wise expenditure on nature of the projects in West Bengal state. The total amount allocated in the state have been distributed on number of projects in the name of normal projects, and the state and national flagship projects across different sectors. However, no expenditure was made on creating infrastructure projects under RKVY scheme in the state. It was revealed from the table that out of the total expenditure (Rs. 485.91 crores) under RKVY scheme in West Bengal, about 88.97 per cent spent on normal projects, 10.92 per cent spent on state flagship projects and 0.11 per cent spent on national flagship projects for the development of agriculture and allied sectors in the state. The animal husbandry sector (Rs. 118.50 crores) had contributed the highest to the expenditure followed by natural resource management (Rs.78 crores), fisheries (Rs. 59.80 crores) and horticulture (52.20 crores).

State flagship projects were the special kind of projects where the autonomy and flexibility was given to the State government. West Bengal had 25 State flagship projects under animal husbandry, cooperatives and cooperation, fertilizers and INM, fisheries, horticulture, integrated pest management, marketing and post harvest management and natural resource management sectors. Animal husbandry was the major sector among flagship projects, which has spent about Rs. 38.68 crores followed by fisheries and horticulture spent Rs. 7.20 and Rs. 2.58 crore respectively from the sector's total expenditure. Whereas, minor sectors utilized Rs. 0.48 crore from the sector's total expenditure.

With regard to the National flagship projects, West Bengal has 4 such projects in agriculture mechanization (Rs.0.48 crore) and cooperatives and cooperation (Rs.0.06 crore) sectors but the total amount spent under this program seems to be very meager.

Sub-scheme projects in East and North East region are 8 projects that are not considered under state or national flagship projects and have their own classification under RKVY. Out of which 8 sub-schemes, each state have one or more these scheme projects of which West Bengal has only one scheme called Rainfed Area Development Program (RADP). But even though the allocation of Rs. 02 crores was made in this scheme in the state, no expenditure incurred during the 11th FYP. These schemes are unique to the region and have significance to the overall public image of the RKVY project as well.

Even though, RKVY has proposed to have infrastructure projects under the scheme, the state has not made any expenditure on creating infrastructure for the long run development of agriculture and allied activities.

7.12.6. Major Sector-Wise Stated and Actual Goals

An effort was made with this study to capture the impact of RKVY projects in terms of output and outcome. The Appendix Table 7.12 presents the summary of expected and actual output, and expected and actual outcome of the major sectors of RKVY projects in West Bengal as provided in the website. Due to the non-availability of the data in the website it was very difficult to analyze the results with the annexure table and hence the impact in terms of different impact indicators were considered from the secondary information and discussed in the concluding remarks.

7.12.7. An Assessment of RKVY Performance in the State and Concluding Remarks

In West Bengal, RKVY project comprises of 20 sectors which includes 62 sub sectors. Out of the 20 sectors, 7 sectors absorbed 85.57 per cent of the expenditure. Among the major sectors, animal husbandry utilized the major funds followed by natural resource management, fisheries, horticulture, marketing and post harvest management, seed and cooperatives and cooperation.

Even though RKVY has proposed to have infrastructure projects under the scheme, West Bengal has not allocated any money on creating infrastructure. Besides, 10.93 per cent spent on the State flagship projects especially in animal husbandry sector. The major focus in the study is given to the expenditure because impact can be depicted clearly on which expenditures are made. The State managed to utilize these funds effectively under the RKVY compared to other programs, probably due to autonomy and flexibility given to the state for choosing and implementing the projects. The state has incurred most of its expenditure on many projects across the sectors which are already completed or substantially completed than the ongoing. As per the RKVY mandate, the funds are being utilized and spent for development of agriculture and allied activities in an integrated manner. Though there are few cases of divergence from stated goals, most of the targeted goals have been met. In order to validate the results from the available secondary data of RKVY projects, primary survey of beneficiaries will also be conducted. By doing so, the actual impact of RKVY projects in terms of divergence and benefits can be explicitly known.

Understanding the strengths and weaknesses of the farmers, the state has well planned its allocation and expenditure through the RKVY funds. Since most of the farmers were belonged to the group of small and marginal, the state has spent more amounts on animal husbandry, natural resources management, fisheries, and horticulture sectors which will directly support these farmers in the form of increased growth of production, productivity and rise in income levels. The projects like water conservation structures and watershed development, vermi composting, strengthening of market infrastructure, custom hiring centres, soil health and soil testing, promotion of bio-fertilizers and organic farming, agri research projects will definitely concerning sustainable agriculture and help in ensuring the long term growth of the agriculture sector in the state.

An attempt was made to analyze the performance of agriculture in the state before and after the initiation of RKVY program to have some indication about the impact of RKVY program although it is difficult to partial out or deduce good or bad performance to RKVY factor alone. Table 7.12.5 shows that although revenue and capital expenditure have increased in the 11th FYP compared to 10th FYP and the state total budget outlay increased by 76.4 per cent in the 11th FYP compared to 10th plan. However, percentage of agriculture share in the state budget declined from 10.8 per cent during 10th plan to 8.9 per cent during 11th plan period. Out of the total expenditure in agriculture in the state, RKVY shared 3.1 per cent of the total expenditure. Although agriculture share in state total budget declined between the plan periods but agriculture expenditure as a share of state GSDP increased from 3.1 per cent in the 10th plan to 3.9 per cent in the 11th plan. This also suggest that GSDP from other sectors especially service sector has increased faster than the GSDP from agriculture in the state from 10th to 11th plan. Looking into the state subsector budgetary expenditure (Table 7.12.6), the highest per cent change over the previous plan happened in other agricultural programs, crop husbandry, cooperation and in fisheries sectors compared to 10th plan. However, the prime importance of the sector shifted from

minor irrigation to crop husbandry in the 11th plan. In addition to the usual expenditure, some of the other sectors received more importance under RKVY.

Gross state domestic product (GSDP) at factor cost (2004-05) by industry origin (Table 7.12.7) states that the relative share of agriculture and allied sector to the total GSDP has declined over the years from 28 per cent in 1999-00 to 17.0 per cent in 2012-13, whereas services sector grown significantly from 52.3 per cent to 63.9 per cent, but the industry sector seems to be remained constant in the same period. However, the growth in agricultural GSDP within the 10th and 11th plan period shown in Table 8 indicates that there is a increase in the growth of agricultural GSDP from 1.6 per cent in 10th plan to 2.4 per cent in 11th plan. Among the few States in the country West Bengal is one of the growing states in terms of agricultural growth in the 11th FYP. The overall growth in GSDP in the state was 6.6 per cent in the 11th plan compared to 6.2 per cent in the 10th plan. There was slight increase in net irrigated area, gross irrigated area, net sown area, irrigation intensity and cropping intensity in the State (Table 7.12.9). However, there was significant growth in fertilizer consumption between the plan periods which has increased from 127.4 kg/ha in 10th plan to 160.0 kg/ha in 11th plan, which might have led to increase in the overall growth of agriculture sector in the state. The increase in land productivity per hectare in value terms between the plan periods may be due to inflation factor (Table 7.12.8). The growth rate in production and productivity was also presents the increasing trend in 11th plan period in the state especially in rice, wheat, maize, gram, ground nut, linseed, sunflower, etc., (Table 7.12.10) except few crops like jowar, ragi, other pulses, sesamum and niger seeds. Average annual growth in production of livestock products and fisheries in West Bengal (Table 7.12.11) depicts that there was a significant growth in milk, meat and egg production in 11th plan period compared to 10th plan period but the growth rate in fish production has decreased from 4.3 per cent to 1.7 per cent in the same period.

7.12.8. Has RKVY Addressed the Challenges Facing Agriculture in West Bengal?

Even though the state has achieved the highest growth in agriculture during the 1980s, its share in the state grew up reaching at 30 per cent in 1991, started declined and become roughly 17 per cent in 2012-13. The major hindrances for agriculture growth in the state include poverty, small land holdings, chemicals based technology, lack of public & private investments, inadequate rural infrastructure, weak network of agricultural marketing, sharply skewed land distribution, adoption of HYV without the considering the soil and moisture conditions etc. Most of these impediments were met through the RKVY funds in the state. The state has given highest priority on animal husbandry, natural resources management, fisheries and horticulture sectors in the RKVY to improve the economic conditions of the small and marginal farmers and thereby increasing the production and productivity of crops. In addition, more assistance were given to the soil testing labs and distributed soil health cards and soil testing facilities to the farmers to improve the soil conditions, undertaken more and more innovative programs and capacity building activities to upgrade the knowledge of the farmers, promoted organic farming, use of

bio-fertilisers and vermi composting for ensuring high soil quality while reducing the reliance on chemical fertilisers that cost more and leave the soil of a poor quality in the long run as a part of sustainable agriculture, helped in creating post harvest processing facilities to reduce the post harvest losses, machines and equipment assistance to the farmers as most of the farmers are small and marginal in the state which in turn reduces the cost of production, helped in creation of check dams/water courses bunds, percolation tanks, tube wells to improve the ground water and increase the irrigation facilities. Therefore, the state has able to achieve the agriculture growth more than expected in the 11th plan period. However, the state might have devoted more on creating infrastructure facilities for the development of agriculture and allied activities in the long-run which would have led to higher returns on investment.

TABLES

Table 7.12.1: Sector-wise Allocation and Expenditure under RKVY during 11th FYP

Sectors	No. of project	Allocation (Rs. in crore)	Expenditure (Rs. in crore)	Expenditure allocation ratio (3/2)	Expenditure per Project (Rs. in crore)
Animal Husbandry	51(81)	213.42(26.6)	118.43(24.4)	0.6	2.3
NRM	18(18)	91.33(11.4)	78.10(16.1)	0.9	4.3
Fisheries	43(59)	58.79(7.4)	59.79(12.4)	1.0	1.4
Horticulture	77(81)	60.58(7.6)	52.14(10.8)	0.9	0.7
Marketing & PHM	29(35)	63.23(7.9)	40.15(8.3)	0.6	1.4
Seed	15(21)	80.96(10.1)	39.34(8.1)	0.5	2.6
Cooperatives And Cooperation	40(41)	39.92(5)	27.95(5.8)	0.7	0.7
Agriculture Mechanization	5(9)	69.04(8.6)	16.47(3.4)	0.2	3.3
Micro/Minor Irrigation	14(21)	18.91(2.4)	11.05(2.3)	0.6	0.8
Dairy Development	7(9)	15.44(2)	10.16(2.1)	0.7	1.5
Extension	10(12)	10.81(1.4)	9.81(2.1)	0.9	1.0
Fertilisers & INM	5(7)	14.45(1.8)	9.49(2)	0.7	1.9
Non Farm Activities	13(16)	10.48(1.4)	5.54(1.2)	0.5	0.4
Innovative Programmes	7(12)	33.16(4.2)	5.45(1.2)	0.2	0.8
Organic Farming / Bio Fertiliser	6(8)	1.22(0.2)	1.03(0.3)	0.8	0.2
Integrated Pest Management	3(6)	4.28(0.6)	0.79(0.2)	0.2	0.3
Research	1(4)	4.99(0.7)	0.21(0.1)	0.0	0.2
IT	1(1)	0.11(0.1)	0.11(0.1)	1.0	0.1
Sericulture	0(12)	11.25(1.5)	0(0)	0.0	0.0
Crop Development	0(1)	0.60(0.1)	0(0)	0.0	0.0
Grand Total	**345(454)**	**802.98(100)**	**485.91(100)**	**0.6**	**1.4**

Source: www.rkvy.nic.inas on April 2013.

Note: Figures in the parenthesis indicates the percentage to the respective total; INM: Integrated Nutrient Management; NRM - Natural Resources management; PHM - Post Harvest Management; IT - Information Technology; In case of Column 5, the ratio =1 indicates that the expenditure incurred is equal to the allocation made; the ratio <1 indicates that the expenditure is less than the allocation made and the ratio >1 indicates that the expenditure incurred is more than the allocation made.

Table 7.12.2: Sector Classification of Projects according to their Expenditure

(Per cent)

Sectors	0 to 1 crore		1 crore to 10 crores		10 crores to 25 crores		Grand Total*	
	No.s	Expd	No.s	Expd	No.s	Expd	No.s	Expd
Animal husbandry	37.26	6.95	56.87	49.28	5.89	43.79	51(100)	118.5(100)
Natural resource management	44.45	4	38.89	34.01	16.67	62.01	18(100)	78(100)
Fisheries	67.45	17.15	32.56	82.86	0	0	43(100)	59.8(100)
Horticulture	77.93	24.47	22.08	75.54	0	0	77(100)	52.2(100)
Marketing and post harvest management	51.73	12.95	48.28	87.06	0	0	29(100)	40.2(100)
Seed	60	8.52	26.67	37.03	13.34	54.47	15(100)	39.4(100)
Cooperatives and cooperation	82.5	41.27	17.5	58.74	0	0	40(100)	28(100)
Agriculture mechanisation	40	2.88	60	97.13	0	0	5(100)	16.5(100)
Micro/minor irrigation	71.43	22.47	28.58	77.54	0	0	14(100)	11.1(100)
Dairy development	14.29	0.6	85.72	99.41	0	0	7(100)	10.2(100)
Extension	60	19.65	40	80.36	0	0	10(100)	9.9(100)
Fertilisers and INM	40	4.54	60	95.47	0	0	5(100)	9.5(100)
Nonfarm activities	84.62	54.1	15.39	45.91	0	0	13(100)	5.6(100)
Innovative programmes/ training/ capacity building/ others	57.15	19	42.86	81.01	0	0	7(100)	5.5(100)
Organic farming / bio fertiliser	100	100	0	0	0	0	6(100)	1.1(100)
Integrated pest management	100	100	0	0	0	0	3(100)	0.8(100)
Research (Agri/Horti/Animal Husbandry etc)	100	100	0	0	0	0	1(100)	0.3(100)
Information technology	100	100	0	0	0	0	1(100)	0.2(100)
Grand Total	**63.77**	**13.58**	**33.92**	**61.4**	**2.32**	**25.04**	**345(100)**	**486(100)**

Source: http://rkvy.nic.in/ as on April, 2013;

Note: *indicates the number in absolute figures, Expd - Expenditure; INM- Integrated Nutrient Management.

Table 7.12.3: Sector-Wise Classification of Projects by their Status under RKVY during 11th Five Year Plan

(Rs. Crore)

Sectors	In progress/Ongoing		Completed/Substantially completed	
	No.	Exp.	No.	Exp
Animal Husbandry	18	18.0	63	100.4
NRM	3	9.7	15	68.3
Fisheries	21	17.0	38	42.8
Horticulture	6	7.5	75	44.7
Marketing & PHM	5	0.5	30	39.7
Seed	12	23.3	9	16.0
Cooperatives And Cooperation	19	9.1	22	18.9
Agriculture Mechanization	2	0.0	7	16.5
Micro/Minor Irrigation	6	0.5	15	10.5
Dairy Development			9	10.2
Extension	4	1.7	8	8.1
Fertilisers & INM	2	0.3	5	9.2
Non Farm Activities	3	1.9	13	3.7
Innovative Programmes	5	0.5	7	4.9
Organic Farming / Bio Fertiliser	1	0.3	7	0.7
Integrated Pest Management	2	0.0	4	0.8
Research	2	0.0	2	0.2
IT			1	0.1
Sericulture	1	0.0		
Crop Development	12	0.0		
Grand Total	**124**	**90.2**	**330**	**395.7**

Source: http://rkvy.nic.in/ as on April, 2013

Note: INM: Integrated Nutrient Management; NRM - Natural Resources management; PHM - Post Harvest Management; IT - Information Technology;

Table 7.12.4: Sector and Sub Sector wise Classification by Nature of Project under RKVY during the 11th Five Year Plan

(Per cent)

Sectors and Sub-sectors	Normal project	State Flagship project	National flagship project	Grand Total
	Non infra structure	Non infra structure	Non infra structure	Non infra structure
Animal husbandry	**67.34**	**32.66**	**0.00**	**100(118.42)**
Animal health	41.67	58.33	0.00	100(4.8)
Breed improvement	69.38	30.62	0.00	100(62.6)
Cattle	0.00	0.00	0.00	0(0.0)
Extension and training	100.00	0.00	0.00	100(0.4)
Feed and fodder	100.00	0.00	0.00	100(4.3)
Infrastructure	100.00	0.00	0.00	100(8.4)
Others (Animal Husbandry)	81.71	18.29	0.00	100(18.8)
Pig farming	100.00	0.00	0.00	100(0.3)
Poultry	30.69	69.31	0.00	100(19.2)
Sheep and goat	0.00	0.00	0.00	0(0.0)
Natural resource management	**96.15**	**3.85**	**0.00**	**100(78.11)**
Others (NRM)	100.00	0.00	0.00	100(0.5)
Soil treatment (acidic alkali, water logged)	72.94	27.06	0.00	100(11.1)
Water conservation structures and watershed dev	100.00	0.00	0.00	100(66.5)
Fisheries	**87.96**	**12.04**	**0.00**	**100(59.79)**
Farmers fish ponds/ assistance including training	100.00	0.00	0.00	100(1.2)
Fish marketing	100.00	0.00	0.00	100(4.7)
Infrastructure/ ponds of fisheries/ dept/ agency	86.31	13.69	0.00	100(52.6)
Others (fisheries)	100.00	0.00	0.00	100(1.5)
Horticulture	**95.05**	**4.95**	**0.00**	**100(52.13)**
Area expansion	100.00	0.00	0.00	100(3.5)
Betel vine	100.00	0.00	0.00	100(0.1)
Cashew nut	100.00	0.00	0.00	100(0.1)
Coconut	100.00	0.00	0.00	100(0.2)
Development of horticulture farms/ facilities	99.45	0.55	0.00	100(8.3)
Drip irrigation	100.00	0.00	0.00	100(0.1)
Floriculture	100.00	0.00	0.00	100(5.5)
Fruits	100.00	0.00	0.00	100(5.7)
Infrastructure	100.00	0.00	0.00	100(3)
Nurseries and green houses	100.00	0.00	0.00	100(4.7)
Others (horticulture)	69.78	30.22	0.00	100(7.8)
Post harvest management	100.00	0.00	0.00	100(2.1)
Spices	100.00	0.00	0.00	100(0.1)

Tissue culture	100.00	0.00	0.00	100(0.2)
Tunnel	100.00	0.00	0.00	100(0.1)
Vegetable	100.00	0.00	0.00	100(11)
Vermi composting	20.00	80.00	0.00	100(0.3)
Water harvesting	100.00	0.00	0.00	100(0.2)
Marketing and post harvest management	**96.11**	**3.89**	**0.00**	**100(40.14)**
Cold storages and cold chains	100.00	0.00	0.00	100(3.5)
Godowns and warehouses	84.19	15.81	0.00	100(7.8)
Others (Marketing & PHM)	100.00	0.00	0.00	100(2.4)
Setting up/ strengthening of market infrastructure	98.74	1.26	0.00	100(26.7)
Seed	**100.00**	**0.00**	**0.00**	**100(39.34)**
Others (seed)	100.00	0.00	0.00	100(14.9)
Seed certification	0.00	0.00	0.00	0(0.0)
Seed farm	100.00	0.00	0.00	100(20.6)
Seed processing centres and storage	100.00	0.00	0.00	100(2.9)
Seed production	100.00	0.00	0.00	100(0.3)
Tissue culture	100.00	0.00	0.00	100(0.8)
Cooperatives and cooperation	**99.57**	**0.21**	**0.21**	**100(27.95)**
Construction of godowns	100.00	0.00	0.00	100(16.2)
Inputs distribution	94.06	5.94	0.00	100(1.1)
Other facilities	99.45	0.00	0.55	100(10.9)
Agriculture mechanisation	**97.13**	**0.00**	**2.87**	**100(16.47)**
Custom hiring centres	0.00	0.00	0.00	0(0.0)
Machines and equipment assistance	97.13	0.00	2.87	100(16.5)
Others (agri. Mechanisation)	0.00	0.00	0.00	0(0.0)
Micro/minor irrigation	**100.00**	**0.00**	**0.00**	**100(11.1)**
Check dams/ water courses bunds	100.00	0.00	0.00	100(2.3)
Percolation tanks/ minor irrigation tanks	100.00	0.00	0.00	100(0.7)
Pump sets (diesel/electric)	100.00	0.00	0.00	100(3.2)
Sprinkler and drip irrigation	100.00	0.00	0.00	100(0.4)
Tube wells	100.00	0.00	0.00	100(4.7)
Dairy development	**100.00**	**0.00**	**0.00**	**100(10.16)**
Others (dairy development)	100.00	0.00	0.00	100(3.9)
Promotion of milk collection centres	100.00	0.00	0.00	100(6.4)
Extension	**100.00**	**0.00**	**0.00**	**100(9.81)**
Infrastructure	100.00	0.00	0.00	100(6.3)
New approaches to extension	0.00	0.00	0.00	0(0.0)
Training/ study tour	100.00	0.00	0.00	100(3.6)
Fertilisers and INM	**100.00**	**0.00**	**0.00**	**100(9.49)**
Fertiliser labs	0.00	0.00	0.00	0(0.0)
Soil health cards and soil testing	100.00	0.00	0.00	100(9.1)
Soil testing lab	100.00	0.00	0.00	100(0.5)

Nonfarm activities	**100.00**	**0.00**	**0.00**	**100(5.54)**
Agri business centres	100.00	0.00	0.00	100(2.1)
Others (NFA)	100.00	0.00	0.00	100(1.4)
Post harvest processing facilities	100.00	0.00	0.00	100(2.2)
Innovative programmes/ training/ capacity building/ others	**100.00**	**0.00**	**0.00**	**100(5.45)**
Innovative programmes	100.00	0.00	0.00	100(5.5)
Organic farming / bio fertiliser	**100.00**	**0.00**	**0.00**	**100(1.03)**
Others (organic farming & bio-fertilizer)	100.00	0.00	0.00	100(0.1)
Promotion of bio fertilizer	100.00	0.00	0.00	100(0.5)
Promotion of organic farming	100.00	0.00	0.00	100(0.1)
Vermi composting	100.00	0.00	0.00	100(0.6)
Integrated pest management	**100.00**	**0.00**	**0.00**	**100(0.79)**
Others (IPM)	100.00	0.00	0.00	100(0.4)
Pest surveillance	0.00	0.00	0.00	0(0.0)
Promotion of IPM	100.00	0.00	0.00	100(0.5)
Research (Agri/Horti/Animal Husbandry etc)	**100.00**	**0.00**	**0.00**	**100(0.21)**
Agri research project	100.00	0.00	0.00	100(0.21)
Agri research/ teaching facility (infrastructure)	0.00	0.00	0.00	0(0.0)
Others (Research-Agri, Horti & Animal Husbandry)	0.00	0.00	0.00	0(0.0)
Information technology	**100.00**	**0.00**	**0.00**	**100(0.11)**
Development of it facilities	100.00	0.00	0.00	100(0.2)
Crop development	**0.00**	**0.00**	**0.00**	**0(0.0)**
Others (crop development)	0.00	0.00	0.00	0(0.0)
Sericulture	**0.00**	**0.00**	**0.00**	**0(0.0)**
Cocoon production	0.00	0.00	0.00	0(0.0)
Others (sericulture)	0.00	0.00	0.00	0(0.0)
Grand total	**88.97**	**10.92**	**0.11**	**100(485.91)**

Source: http://rkvy.nic.in/ as on April, 2013

Note: Infrastructure projects are not present; Figures in parenthesis are respective absolute values

Table 7.12.5: Trend in Budgetary Expenditure on Agriculture and Allied Sector (at 2004-05 prices)

Year	Revenue expenditure (Rs crore)	Capital expenditure (Rs crore)	Total (Rs. Crore)	Total State budget (Rs crore)	% agri. Expenditure to State budget	% agri. Expenditure to agri GSDP	Percentage of RKVY expenditure to agri. expenditure
2002-03	1324	201	1525	12183	12.5	3.2	
2003-04*	1220	173	1392	12238	11.4	2.8	
2004-05	1336	302	1638	14990	10.9	3.3	
2005-06	1273	229	1502	15470	9.7	2.9	
2006-07	1345	226	1571	16282	9.7	3.0	
10th Plan	**6499**	**1130**	**7629**	**71164**	**10.8**	**3.1**	
2007-08	1488	308	1796	18614	9.6	3.2	
2008-09	1525	429	1954	26849	7.3	3.6	
2009-10	1943	437	2380	25319	9.4	4.1	**3.1**
2010-11	1863	465	2328	25163	9.3	4.1	
2011-12*	2066	637	2704	29616	9.1	4.6	
11th Plan	**8887**	**2276**	**11162**	**125561**	**8.9**	**3.9**	
% change over 10th plan	**36.7**	**101.4**	**46.3**	**76.4**			

Source: State Finances, RBI

Note: * - Revised estimates, rest all accounts Agriculture and allied activities includes Irrigation and flood control Budgetary expenditure is accounts only Developmental expenditure;

Percentage of RKVY expenditure to agriculture expenditure=RKVY expenditure/agriculture expenditure*100

Table 7.12.6: Composition of State Budgetary Expenditure on Agriculture and Allied Sector

(Rs.Crore)

Sl. No.	Particulars	10th Plan	11th Plan	% change over 10th plan
1	Crop Husbandry	943(12.4)	2943(18.8)	212.1
2	Soil and Water Conservation	59.4(0.8)	106.3(0.7)	79.0
3	Animal Husbandry	651.5(8.6)	1276.8(8.2)	96.0
4	Dairy Development	523(6.9)	504.9(3.3)	-3.5
5	Fisheries	249.1(3.3)	601.7(3.9)	141.6
6	Forestry and Wild Life	708.2(9.3)	1413.6(9.1)	99.6
7	Plantations	5.9(0.1)	6.7(0.1)	0.0
8	Food Storage and Warehousing	404.8(5.3)	670(4.3)	65.5
9	Agricultural Research and Education	291.5(3.9)	478(3.1)	64.0
10	Agricultural Finance Institutions	0 (0)	0 (0)	0.0
11	Co-operation	244.4(3.2)	745(4.8)	204.9
12	Other Agricultural Programmes	48.6(0.7)	358.3(2.3)	638.0
13	Major and Medium Irrigation	891.4(11.7)	1543.9(9.9)	73.2
14	Minor Irrigation	1253.6(16.4)	1821.4(11.7)	45.3
15	Flood Control and Drainage	370.9(4.9)	630.9(4.1)	70.1
16	Others	1006.2(13.2)	2559.6(16.4)	154.4
	Total	**7650.9(100)**	**15659.5(100)**	**104.7**

Source: State Finances, RBI

***Note:** The difference between total (Irrigation and Flood Control) and the components of Irrigation and Flood Control are categorized under others; Figures in the parenthesis are percentage to the respective total

Table 7.12.7: Percentage Share of Gross State Domestic Product (GSDP) at Factor Cost by Industry of Origin (at 2004-05 Prices)

Year	Agr and Allied	Industry	Services
1999-00	28.0	19.3	52.3
2000-01	26.8	19.8	53.0
2001-02	27.2	19.5	52.9
2002-03	25.7	20.3	53.7
2003-04	25.1	21.0	53.8
2004-05	23.9	21.7	54.4
2005-06	23.0	21.0	55.9
2006-07	21.8	21.2	57.0
2007-08	21.5	21.0	57.5
2008-09	20.0	19.7	60.3
2009-10	19.8	20.0	60.2
2010-11	18.5	20.0	61.5
2011-12	17.8	19.5	62.7
2012-13	17.0	19.1	63.9

Source: Directorate of Economics and Statistics, GOI

Table 7.12.8: Year over Year Growth in State Agricultural Economy (at 2004-05 Prices)

Year	Growth in agricultural GSDP (%)	Growth in overall GSDP (%)	Net sown area (lakh ha)	Gross cropped Area (lakh ha)	Cropping Intensity (%)	Land Productivity* (Rs/ha)
2002-03	-1.8	3.8	54	95	177.6	88277
2003-04	3.6	6.2	54	97	178.0	90175
2004-05	2.0	6.9	54	95	177.2	92921
2005-06	2.2	6.3	53	95	180.0	96403
2006-07	2.1	7.8	53	96	181.9	98430
10th Plan Average	**1.6**	**6.2**	**53**	**96**	**179.0**	**93241**
2007-08	6.2	7.8	53	98	184.1	104541
2008-09	-2.4	4.9	53	98	185.2	102121
2009-10	6.9	8.0	53	95	181.3	109997
2010-11	-0.7	6.1	50	96	191.6	115027
2011-12	2.0	6.3	50	96	191.6	117305
11th Plan Average	**2.4**	**6.6**	**52**	**96**	**186.8**	**109798**

Source: Directorate of Economics and Statistics, GOI
Note: land productivity = agricultural GSDP/ha of NSA

Table 7.12.9: Trend in Input Use in West Bengal

Year	Net irrigated Area (lakh ha)	Gross irrigated Area (lakh ha)	% net irrigatted to net sown area	Irrigation intensity (%)	%gross irrigated to gross sown area	Fertiliser consumption (Kg/ha of GCA)
1	**2**	**3**	**4**	**5**	**6**	**7**
2002-03	29.7	53.1	55.4	179.1	55.8	122.3
2003-04	30.1	53.9	55.4	179.2	55.8	114.1
2004-05	31.8	53.4	59.2	167.8	56.1	129.7
2005-06	31.4	55.0	59.2	175.5	57.7	127.5
2006-07	31.4	55.8	59.2	178.0	57.9	143.2
10th Plan Averge	**30.9**	**54.2**	**57.7**	**175.9**	**56.7**	**127.4**
2007-08	31.4	56.7	59.2	180.8	58.1	141.0
2008-09	31.4	56.5	59.2	180.3	57.7	155.8
2009-10	31.1	55.3	59.2	177.5	58.0	168.6
2010-11	29.6	55.6	59.2	188.2	58.2	164.9
2011-12	29.6	55.6	59.2	188.2	58.2	169.7
11th Plan Average	**30.6**	**55.9**	**59.2**	**183.0**	**58.0**	**160.0**

Source: Directorate of Economics and Statistics, GOI;
Note: Column 4 = Net irrigated area /Net sown area*100
Column6= Gross irrigated area /Gross sown area*100

Table 7.12.10: Average Annual Growth in Area, Production and Yield of Major Crops

(Per cent)

Particulars	10th Plan			11th Plan		
	Area	Production	Yield	Area	Production	Yield
Rice	-1.3	-0.6	0.7	-0.6	0.1	0.7
Wheat	-4.1	-3.2	0.8	-1.9	2.4	4.1
Jowar	4.7	4.3	-3.2	-19.5	-16.8	3.8
Maize	29.0	38.5	4.8	3.3	8.8	5.0
Ragi	0.8	0.3	-0.3	-7.8	-9.7	-2.8
Coarse Cereals	17.8	29.2	7.3	1.1	7.9	6.4
Total Cereals	-1.3	-0.6	0.7	-0.7	0.2	1.0
Gram	-8.7	-8.9	-0.7	-5.2	0.5	7.0
Arhar/Tur	-7.1	-10.7	-6.3	3.5	1.0	41.8
Other Pulses	-0.7	1.2	1.6	-21.2	-16.0	-14.7
Total Pulses	-2.4	-1.3	0.6	-3.0	-1.8	1.3
Total Foodgrains	-1.3	-0.6	0.7	-0.8	0.2	1.1
Groundnut	11.2	14.6	2.6	-0.5	2.7	3.0
Sesamum	15.5	19.1	2.0	-1.8	-0.8	1.4
Rapeseed & Mustard	-0.6	1.0	1.3	-0.1	4.0	4.3
Linseed	-12.4	-21.3	-8.4	-2.8	7.0	9.1
Nigerseed	-4.4	0.4	4.5	-5.5	-4.7	0.7
Sunflower	61.8	58.7	12.1	4.7	6.2	-1.0
Total Oilseeds	3.5	6.5	2.5	-0.8	1.8	2.7
Sugarcane	-6.1	-6.6	-0.7	0.1	10.4	8.6

Source: Directorate of Economics and Statistics, GOI

Table 7.12.11: Average Annual Growth in production of Livestock Products and Fishery

(Per cent)

Year	Milk	Meat	Egg	Fish
2002-03	2.4	1.8	1.4	1.8
2003-04	2.4	2.7	2.6	4.4
2004-05	2.8	2.8	2.4	3.9
2005-06	2.7	2.5	2.6	2.9
2006-07	2.3	-53.0	2.5	8.7
10th plan	**2.5**	**-8.6**	**2.3**	**4.3**
2007-08	2.6	120.5	0.5	6.5
2008-09	2.2	2.2	8.2	2.5
2009-10	3.0	5.4	11.9	2.2
2010-11	4.0	6.1	8.0	-4.9
2011-12	-	-	-	2.0
11th plan*	**2.9**	**33.5**	**7.2**	**1.7**

Source: BAHS, www.Indiastat.com

Note: For Milk, Meat and Egg 2011-12 data are not available

CHAPTER VIII

Conclusions and Policy Implications

Agriculture still remains the backbone and the engine of the Indian Economy. It provides direct employment to 54.6 per cent of the total work force (main and marginal workers) in the country as on 2011. Out of the total agricultural work force, livestock supports 8 per cent (GoI, 2012-2017) and fisheries supports a further 3.6 per cent. Altogether, the sector is providing livelihood to 69 per cent of the rural population (2011 Census). Agriculture sector is an integral part of the rural economy which provides livelihood to the masses, food security to the rural as well as urban population and is the base for the agro processing industry. Due to size of the agricultural sector and importance of agricultural products for livelihood, growth of agricultural sector has important implications for poverty reduction in the rural areas. However, a transformation has taken place in the Indian economy whereby tertiary sector has become the lead sector leaving behind both manufacturing as well as the agricultural sector. These developments have left agriculture less remunerative. Because of reduced return from agriculture sectors coupled with increasing demand for high value food and non food commodities, more and more people have left agriculture for other better remunerative activities. The number of cultivators has declined from 31.75 per cent in 2001 to 24.65 per cent in 2011. Conversely, a shift has also occurred from cultivators to land less labourers because of rising population and fragmentation of holdings. The proportion of agricultural labourers has increased from 26.75 per cent to 30.25 per cent, during the above mentioned period because of increasing landlessness amongst the cultivators.

Food grain production during 1950s hardly could meet the demand of 35 to 40 crore population. This situation was pervasive in spite of the fact that more than three-fourths of Indian work force was engaged in farming activities. In order to attain self sufficiency in agriculture production, the Central and State Governments constantly endeavored to increase production to meet demand through the implementation of a series of agricultural development programmes. In addition to these programmes, several departments and agencies were set-up to look into the efficacy of agricultural development initiatives. Parallel to the implementation of schemes and establishment of departments, the government also instituted agricultural research organizations and agricultural universities to produce researchers and to develop technologies and agricultural councils to introduce technologies to rural communities. Before the end of 19th century, the country was able to produce food grains that exceeded the demand of more than 100 crore population. Surplus in the agriculture sector also added towards export earnings.

After achieving self sufficiency in the 1980s, the agriculture growth started showing downward trends in the 1990s. Agricultural development programmes in the past aimed at a specific crop or a particular geographical region or a category of farming community or a particular agro-climatic zone. This approach was appropriate considering the situation and needs during that time. It was

essential to introduce a programme which would combine functionalities of all the previous development programmes. This became the genesis of RKVY programme. The convergence of agricultural development programmes, encouraging research and incentivizing states to prioritize agriculture are all features of the RKVY programme when it launched as a part of the 11th Five Year Plan.

Attaining an annual growth rate of at least four per cent in agriculture sector was the core objective of the RKVY Scheme. The other objectives associated with the scheme are: (i) to incentivize the states so as to increase public investment in agriculture and allied sectors; (ii) to provide autonomy to states in planning and executing agriculture sector schemes; (iii) to ensure the preparation of detailed agricultural plans for districts and states; (vi) to achieve the goal of reducing the yield gaps in important crops; (v) maximize returns to the farmers in agriculture and allied sectors; and lastly (v) capitalize agriculture and allied sectors in an integrated manner.

Geographically, RKVY covered 609 districts administered by 28 states. In addition to states, 5 union territories (UTs) were also covered under RKVY programme. The RKVY programme listed 20 main sectors for implementation with sub-sectors within each of those major sectors. In total, there are 152 sub-sectors. State Government Departments, National Seeds Corporation, Agricultural Universities and many more organizations were associated in implementation of RKVY projects across the country. Several lakh of stake holders were identified and they were provided all possible backing to enhance agricultural growth in the country under the RKVY programme. On the financial side, an amount of Rs. 25,000 crores was earmarked for a period of five years to develop agriculture and allied activities under RKVY scheme.

A pragmatic and impartial impact assessment of a project/scheme within RKVY needs to examine three distinct facets of a particular program. These include, (i) Interactions with the personnel involved in implementation of the scheme (at all levels), (ii) The availability of authentic empirical data and (iii) Accurate feedback from the relevant stakeholders. The evaluation team would like to interact with all RKVY officials by means of workshops, meetings and individual discussions for collecting qualitative data. Simultaneously, a survey would be conducted for collecting all relevant data and feedback from RKVY stake holders though a questionnaire specifically designed for each sector. For the moment, the conclusions presented are drawn from the secondary data downloaded from RKVY website and other relevant websites. Policy suggestions/implications are also offered wherever necessary along with conclusions drawn from these secondary sources.

The macro-level impact of RKVY at both the national and Statelevel has been measured using three growth indicators. These indicators are: (i) growth in GDP, overall GSDP and agricultural GSDP (ii) growth in agricultural area and production and (iii) percentage of agriculture expenditure out of states' budget and agriculture GSDP.

- The growth in agricultural GDP of the country was 2.4 per cent per annum in the 10th Plan that increased to 3.7 per cent per annum in the 11th Plan. The increase in agricultural growth rate is especially encouraging as the increase has come after consecutive declines in the previous two FYPs. The overall growth rate of GSDP of 28 states (excluding the UTs) also went-up from 7.61 per cent in 10th FYP to 8.63 per cent in the 11th FYP. Similarly, the overall agriculture GSDP of 28 states grew from 2.38 per cent in 10th FYP to 3.66 per cent in 11th FYP. The increase of overall GSDP and agriculture GSDP of 28 states was noticed in all regions except for West & Central India which in fact observed a declining trend. However, it is interesting to note that even after decline in overall GSDP and agriculture GSDP in West & Central India, the growth rate of this region remained higher than the other regions. The highest agricultural GSDP growth was found in Gujarat with 9.73 per cent per annum during 10th FYP. During the 11th FYP, Chhattisgarh had the highest rate of growth of 7.48 per cent. Both these states belong to West & Central India.

- Despite the lack of significant increase in the gross cropped area or in cropping intensity between the 10th Plan and 11th Plan, the production of food grain attained a new high of 258 million tonnes during 11th FYP. This may be due to an increase in land productivity per hectare; which in value terms increased from Rs 41 thousand in the 10th Plan to approximately Rs 49 thousand in the 11th Plan. Even after accounting for inflation, the productivity gains were significant. The percentage of net irrigated to net sown area, cropping intensity and irrigation intensity all indicated a positive trend from the 10th FYP to 11th FYP. This increase was observed at the all India and at regional level as well. This all indicate that the irrigation projects under RKVY are now yielding result. There was also marginal increase in irrigation intensity from 137.2 during the 10th Plan to 138.8 at the end of 11th Plan. The growth rate in area, yield and production was found to be mixed. There was increased productivity in rice, wheat, pulses and coarse cereals but slight decrease in oilseeds and fibers.

The percentage of expenditure on agriculture (in 28 states budget) accounted for 17.62 per cent at the end of 10th Plan and it increased to 18.44 per cent at the end of the 11th Plan. Thus, there was marginal increase in proportional share of agriculture from states' budget. The expenditure on agriculture as a percentage of agriculture GSDP also increased from 8.80 per cent in 10th Plan to 12.42 in 11th plan. The total agriculture budget of all 28 states' outlay increased by 62 per cent in the 11th Plan over the 10th Plan. However, percentage of agriculture share in the total budget remained constant at 19 per cent during both 10th and 11th FYP. Andhra Pradesh had highest percentage of agriculture expenditure out of its states' budget in both the plans. It was 29.10 per cent in the 10th Plan and 32.31 per cent in the 11th Plan. To summarize, increase in budgetary expenditure in agriculture sector from 10th FYP to 11th FYP was encouraging. The RKVY scheme has definitely played a role in this growth. But, in the absence of sufficient data, it is difficult to isolate the extent of RKVY's contribution for this growth.

Given the limited information, some conclusions specific to RKVY programme were drawn from the secondary data. They are listed below with policy implications as and where needed:

- The total RKVY budget allocation for the period from 2007-08 to 2011-12 was Rs 37919.62 crores. The expenditure incurred was Rs 23030.48 crores for implementing 7234 projects funded under RKVY. The expenditure allocation ratio was 0.61 which indicates that RKVY had an unutilized amount of Rs. 14889.14 crores by the end of 11th FYP. The highest expenditure allocation of 0.72 was in South India and the lowest of 0.57 was noticed in East and North East India. Highest expenditure to allocation ratio was recorded by Mizoram state, with a ratio of 0.95, which interestingly belongs to the region which had the lowest expenditure allocation ratio. Conversely, the State with the lowest expenditure allocation ratio of 0.05 (Goa) belonged to the region which had the highest expenditure allocation ratio. Based on the expenditure allocation ratio, it may be concluded that there was not enough oversight when planning the budgetary allocations. *Therefore, it is suggested that nodal offices ought to be more cautious while allocating budget and should constantly monitor the projects. It would be more beneficial if a separate monitoring cell at each region, i.e., North, South, East (including North-east), West and Central is set-up.*

- It should be mentioned that though RKVY was scheduled to have started in the year 2007-08, it really began two years after its inception. This delay was even more pronounced in the North and North Western India. As a result, many of the initiated projects were not completed. This conclusion is based on the fact that more than 55 per cent of the projects were initiated during last two to three years of RKVY period. It is possible that there were several administrative and technical reasons for this delay. The exact reasons for these delays would have to be ascertained during interaction with implementing officials.

- Out of the 609 districts belonging to 28 states, 599 districts had submitted District Agricultural Plans (DAP). The remaining 10 DAPs are yet to be submitted. These remaining districts are located in Chhattisgarh (5 districts), Karnataka (2 districts) and one each in Kerala, Mizoram and West Bengal. Goa has neither submitted DAPs for any of its two districts nor or the Agricultural Report (SAP). Kerala and Madhya Pradesh are the two other states which have not submitted their SAPs either. It is likely that initially many states had taken up projects under RKVY scheme without DAP and SAP submission. This essentially means that the nodal offices could not properly assess the budgetary requirement for RKVY projects. This has resulted in inappropriate allocation of budget to states under RKVY programme. The West & Central India is the best example for this. *Therefore, it is*

suggested that RKVY is required to insist on submission of DAPs and SAPs for allocation of RKVY funds to states.

- Another major observation is that 80 per cent of the total expenditure is concentrated in only 8, out of 20 sectors recognized for RKVY implementation. These 8 sectors were: Crop development (13.90 percent), Micro / Minor irrigation (12.44 per cent), Horticulture (9.82 per cent), Animal husbandry (9.80 per cent), Agriculture mechanization (9.70 per cent), Seed (8.16 per cent), Innovative programme (5.37 per cent), Natural Resource Management (5.09 per cent) and the remaining 20 per cent expenditure was accounted for by the other 12 sectors. By and large, this trend was similar across all the states. As such, a major conclusion is that RKVY was confined mainly to 8 sectors. *Therefore, it is suggested that department of agriculture, horticulture, etc must take initiative in assessing the requirements for the state.*

- The overall performance of RKVY at all-India level, as measured in terms of expenditure to allocation ratio, was not very encouraging. This is evident from the fact that all-India expenditure allocation ratio under RKVY during the entire 11th FYP remained at 0.61. Integrated Pest Management had lowest expenditure allocation ratio (0.32) and crop development had highest (0.75). Sectors like horticulture and dairy development which have direct impact in augmenting the agricultural economy had a low expenditure allocation ratio at the all-India level. These ratios were 0.46 and 0.48, respectively. However, few sectors like micro and minor irrigation projects, innovative and capacity building programmes and agricultural mechanization had shown higher ratios beyond national average. The inequality in expenditure was also observed across the sectors. Eight sectors accounted for 75 per cent of the Rs 23030.47 crores expenditure incurred from the total allocated fund of Rs 37919.65 crores. These 8 sectors did not include dairy development and fisheries which are important allied activities. It is a matter of concern that sectors like natural resource management did not have as much priority as they perhaps required. Across regions, the expenditure allocation ratio was highest in the south (0.72) and lowest in the north and north western region (0.54) indicating that the south region utilized RKVY funds more efficiently compared to other regions.

- The impact assessment would be more appropriate if more of the allocated projects were completed. However, there has been an indefinite delay in completion of projects. Less than 50 per cent of projects that were scheduled for implementation were completed. Besides long duration projects, many projects scheduled for one year remained incomplete at the end of the initial RKVY period. It seems that the implementers were inclined towards completing larger scale projects of more than

Rs 10 crores while keeping the smaller projects of Rs one crore or less just pending.

- About 4 per cent of the projects were abandoned and another 2 per cent were not implemented. It was also observed that abandoned and not implemented projects had an expenditure of about Rs 30 crore. The highest proportion of abandoned and not implemented projects were observed in North and North western region (9 per cent), while lowest proportion was in South India region (2.5 per cent). The issue of abandoned projects needs to be taken up seriously, especially when projects are abandoned after incurring some expenditure. Discussion will be held with implementing agencies to ascertain reasons for abandoning projects. Based on discussions and survey results suitable suggestions would be offered in order to reduce the chances of projects getting abandoned.

- It is interesting to note that only 5 per cent of the expenditure was incurred by nearly 62 per cent of the total number of implemented projects. All these projects were of less than Rs. 1 crore expenditure. At the higher extreme, 2 per cent of the total implemented projects had an expenditure of more than 41 per cent of the total expenditure under RKVY scheme. All these projects were in the group of projects having more than Rs 25 crores expenditure per project. Thereby it looks that the RKVY implementing agencies were generally more inclined towards large scale projects. Suggestions concerning the disparity between low and high expenditure projects will be offered after discussions with implementing agencies.

- The RKVY had implemented 1584 infrastructure projects all over the country. These projects absorbed Rs 6975 crore of expenditure which accounted for 29.20 per cent of the total expenditure under RKVY programme. Infrastructure projects were implemented in all the 20 sectors. Micro and minor irrigation had the highest expenditure of nearly 32 per cent of the total expenditure under infrastructure projects. Animal husbandry (8.46 per cent), natural resource management (8.46 per cent) and marketing and post harvest management (8.24 per cent) were other major sectors also implementing infrastructure projects. The animal husbandry (14.33 per cent), fisheries (10.93 per cent) and research (11.62) sectors had the highest total number of infrastructure projects. South India had the highest number of 733 (46.28 per cent) infrastructure projects and lowest number of infrastructure projects was in the North and North West India. One important observation with respect to infrastructure projects is that all the regions had shown high expenditure allocation ratio of up to 0.85 and all-India had 0.70 ratios under infrastructure projects.

- The RKVY scheme had implemented 566 Flagship projects. Out of these 566 projects, 84 were National Flagship projects and 482 were State Flagship projects.

The State Flagship projects were taken up by 26 states and only 11 states had National Flagship projects. The National Flagship projects had an expenditure of Rs 1529.25 crore which is 6.64 per cent of total RKVY expenditure. The expenditure on State Flagship projects was Rs 2536.07 crore constituting 11.01 per cent of RKVY expenditure. It was observed that 74 percent of fund allocated for National Flagship was utilized. The State Flagship projects utilized 80 per cent of the allocated fund. Thus, expenditure allocation ratio of Flagship projects was good. Out of total Flagship expenditure, West and Central India (45.29 per cent) and south (42.83 per cent) had shown higher expenditure and their expenditure allocation ratio was also higher as compared to other regions. However, there were instances of 'not implemented' Flagship projects.

The evaluation team had difficulty in gathering secondary data from RKVY website and noticed discrepancies in the data. In view of this problem, certain observations and difficulties faced with respect to collection of data are now discussed.

- There are errors in the data. The units of measurement pertaining to quantitative data were not clear. Therefore, it is suggested that it would be more appropriate if the data entry is done under the supervision of implementing agents by trained data entry operators. Nodal departments must take initiative in training.

- With regard to data structuring, the projects do not have unique identity. It is essential to structure the database to have individual fields for identification code, year of start, date of starting project, date of completion, implementing agency, sector, allocated budget, and released budget, expenditure as on date etc. It is necessary to adopt a process of having project identification code given at the time of project initiation instead of changing the code every year. This will help in understanding the original numbers of projects and their progress over time and measurement of it actual impact.

- The detailed data pertaining to release, allocation, expenditure, etc. are not available at one place and one format. They need to be made available at one location of the website.

- Data is not being updated periodically. Therefore the implementing agencies should keep updating the data for better planning and management of funds.

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APPENDIX TABLES

Appendix Table 2.1: State-Wise consolidated details of Allocation, Release and Expenditure under RKVY during 11th FYP

States	Allocation Rs. Crores	Release Rs. Crores	Expenditure Rs. Crores	Release to allocation Ratio	Expenditure to Release Ratio	Expenditure to allocation Ratio
Andhra Pradesh	1940.89	1934.74	1934.74	1.00	1.00	1.00
Arunachal Pradesh	73.17	57.51	57.51	0.79	1.00	0.79
Assam	730.89	668.62	667.12	0.92	1.00	0.91
Bihar	1211.11	1239.02	1201.94	1.02	0.97	0.99
Chhattisgarh	1000.37	1022.58	1016.03	1.02	0.99	1.02
Goa	81.93	33.55	33.55	0.41	1.00	0.41
Gujarat	1552.22	1583.50	1583.50	1.02	1.00	1.02
Haryana	583.55	577.46	567.48	0.99	0.98	0.97
Himachal Pradesh	260.30	259.09	256.70	1.00	0.99	0.99
Jammu & Kashmir	330.26	203.50	196.12	0.62	0.96	0.59
Jharkhand	519.93	426.58	425.76	0.82	1.00	0.82
Karnataka	1778.47	1758.37	1736.53	0.99	0.99	0.98
Kerala	598.72	528.92	527.32	0.88	1.00	0.88
Madhya Pradesh	1490.96	1452.66	1431.64	0.97	0.99	0.96
Maharashtra	2199.74	2182.80	2182.80	0.99	1.00	0.99
Manipur	58.41	44.51	44.51	0.76	1.00	0.76
Meghalaya	105.99	104.38	104.38	0.99	1.00	0.98
Mizoram	51.59	41.18	34.91	0.80	0.85	0.68
Nagaland	94.50	81.31	81.31	0.86	1.00	0.86
Orissa	914.88	907.59	911.32	0.99	1.00	1.00
Punjab	488.59	491.79	482.52	1.01	0.98	0.99
Rajasthan	1749.06	1795.72	1795.73	1.03	1.00	1.03
Sikkim	56.07	54.94	54.77	0.98	1.00	0.98
Tamil Nadu	1015.26	1004.97	948.56	0.99	0.94	0.93
Tripura	205.11	193.63	193.63	0.94	1.00	0.94
Uttar Pradesh	2216.87	2233.63	2269.63	1.01	1.02	1.02
Uttarakhand	256.88	240.16	160.05	0.94	0.67	0.62
West Bengal	1308.43	1172.32	1172.32	0.90	1.00	0.90
Total	**22874.15**	**22295.03**	**22072.38**	**0.98**	**0.99**	**0.96**

Appendix Table 3.1: Various Indicators of Performance during 10th and 11th Plan – North Region

State	Plan	Haryana	Himachal Pradesh	Jammu & Kashmir	Punjab	Uttar Pradesh	Uttarakhand
Total State budget (Percentage change over10th plan)		64.86	51.68	53.98	26.68	60.25	44.25
% agri. Expenditure to State budget	10th	15.33	16.02	17.16	14.15	15.46	19.72
	11th	15.50	18.09	13.67	15.11	15.06	19.34
% agri. Expenditure to agri GSDP	10th	6.40	10.92	14.64	3.75	5.86	14.93
	11th	8.38	16.53	16.87	4.52	8.45	18.86
Ratio of agri. Exp. to RKVY exp.		3.29	2.67	1.47	3.97	3.98	0.39
Growth in agricultural GSDP (%)	10th	4.46	4.19	2.78	2.10	1.54	3.31
	11th	3.88	2.30	3.66	1.87	3.24	3.16
Growth in overall GSDP (%)	10th	9.05	7.65	5.45	5.99	5.79	11.69
	11th	8.91	8.05	5.82	6.73	7.04	12.82
% net irrigated to net sown area	10th	83.99	19.97	41.51	96.25	78.79	45.03
	11th	83.04	19.97	43.06	97.95	80.66	45.61
Cropping Intensity (%)	10th	179.91	175.05	148.58	187.18	151.35	159.45
	11th	181.94	174.82	155.12	189.26	152.65	158.76
Irrigation intensity (%)	10th	181.47	171.37	146.19	152.48	142.47	158.77
	11th	188.08	178.15	149.47	189.06	145.11	166.48
Milk	10th	1.52	2.97	0.59	2.94	4.32	2.68
	11th	3.96	6.44	3.57	0.69	3.83	3.45
Meat	10th	-0.81	-3.19	-	323.99	3.05	-1.62
	11th	594.88	2.08	3.54	27.49	67.03	19.92
Egg	10th	39.44	-1.20	0.87	5.31	3.60	21.37
	11th	0.12	7.39	5.19	-1.32	3.76	9.04
Fish	10th	11.95	-0.74	0.40	8.98	6.39	-8.47
	11th	12.60	3.41	0.89	4.48	7.02	4.88

Appendix Table 3.2: Various Indicators of Performance during 10th and 11th Plan - East and North East Region

State	Plan	Assam	Arunachal Pradesh	Bihar	Jharkhand	Manipur	Meghalaya	Mizoram	Nagaland	Orissa	Sikkim	Tripura	West Bengal
Total State budget (Percentage change over 10th plan)		39.22	71.51	97.65	49.97	74.51	72.00	54.51	41.78	95.17	43.29	60.81	76.44
% agri. Expenditure to State budget	10th	11.82	18.91	14.79	13.39	16.27	16.10	14.55	12.01	19.00	12.61	14.01	10.84
	11th	15.46	18.08	12.85	11.87	18.89	17.03	20.26	15.06	22.28	14.47	14.41	8.94
% agri. Expenditure to agri GSDP	10th	6.19	21.29	5.96	11.75	21.62	13.24	28.59	9.26	7.61	33.84	10.71	3.06
	11th	9.97	30.03	9.15	11.34	31.14	21.51	44.47	14.44	14.28	47.10	12.00	3.93
Ratio of agri. Expenditure to RKVY expenditure		5.92	1.35	8.91	5.55	1.58	3.95	5.75	4.70	4.43	3.56	1.64	3.10
Growth in agricultural GSDP (%)	10th	1.17	1.54	7.70	2.66	4.16	4.18	1.79	6.15	2.86	4.67	3.80	1.63
	11th	4.09	4.46	3.79	4.85	8.59	1.70	8.76	4.27	2.32	4.28	8.44	2.42
Growth in overall GSDP (%)	10th	4.98	6.22	6.93	4.99	5.68	6.67	5.89	7.42	9.24	7.74	6.91	6.19
	11th	6.78	8.58	9.91	10.39	6.24	7.81	10.81	6.22	7.13	22.71	8.93	6.61
% net irrigated to net sown area	10th	5.09	24.60	58.61	8.09	22.39	27.19	15.73	21.05	31.21	11.89	21.36	57.68
	11th	5.72	26.25	60.98	9.23	21.58	22.56	9.51	22.90	34.29	18.18	21.80	59.21
Cropping Intensity (%)	10th	141.83	133.500	135.83	112.82	100.0	120.39	100.0	121.96	150.91	156.97	107.0	178.96
	11th	144.71	130.51	137.87	112.70	99.91	119.19	100.92	127.63	143.49	177.66	118.69	186.76
Irrigation intensity (%)	10th	114.43	100.00	134.89	133.48	100.0	123.38	111.25	151.74	146.38	164.29	175.21	175.90
	11th	126.68	100.00	138.16	135.05	100.0	119.58	102.22	119.45	122.40	135.71	183.06	183.00
Milk	10th	1.95	3.19	16.42	9.24	2.53	2.59	2.85	3.54	9.43	6.11	-0.01	2.53
	11th	1.29	-8.48	4.59	2.67	0.33	1.31	-7.26	7.39	4.11	-2.95	3.98	2.94
Meat	10th	6.86	18.68	2.63	1.80	1.37	3.37	5.48	34.32	5.32	-	41.67	-8.64
	11th	4.06	0.06	5.90	0.11	1.10	1.37	1.28	31.13	30.89	50.00	15.86	33.55
Egg	10th	1.10	-2.86	5.54	3.03	3.15	1.65	3.80	10.39	11.64	8.57	16.53	2.32
	11th	-3.08	110.93	-4.08	-9.91	8.68	0.83	3.09	-1.86	13.85	-0.64	7.12	7.15
Fish	10th	2.45	1.28	2.22	-0.80	2.51	3.95	3.64	2.54	3.95	1.43	2.35	4.35
	11th	4.76	3.92	5.67	26.45	3.67	-1.78	-4.08	3.37	2.26	15.32	13.63	1.68

Appendix Table 3.3: Various Indicators of Performance during 10th and 11th Plan - West and Central Region

State	Plan	Chhattisgarh	Gujarat	Madhya Pradesh	Maharashtra	Rajasthan
Total State budget (Percentage change over10th plan)		81.52	54.64	49.82	58.00	42.12
% agri. Expenditure to State budget	10th	27.98	21.72	19.93	27.93	15.96
	11th	22.97	19.60	21.15	23.94	12.90
% agri. Expenditure to agri GSDP	10th	15.13	12.27	9.55	20.64	7.59
	11th	17.48	13.05	11.89	22.45	6.68
Ratio of agri. Expenditure to RKVY expenditure		6.12	3.94	5.44	2.64	5.84
Growth in agricultural GSDP (%)	10th	4. 05	9.73	4.65	6.03	8.41
	11th	6.89	5.63	6.86	4.33	7.41
Growth in overall GSDP (%)	10th	8.76	11.03	5.03	10.08	7.05
	11th	7.66	9.51	9.19	8.10	8.46
% net irrigated to net sown area	10th	24.79	37.23	38.02	18.70	36.45
	11th	28.53	41.69	45.55	18.67	36.07
Cropping Intensity (%)	10th	119.16	116.45	131.86	127.01	126.29
	11th	120.51	115.30	142.38	132.79	134.23
Irrigation intensity (%)	10th	110.00	121.71	102.88	123.81	121.99
	11th	115.60	119.66	103.46	139.59	125.40
Milk	10th	1.32	5.16	3.95	2.75	3.89
	11th	4.94	5.47	4.20	3.62	9.38
Meat	10th	0.00	11.33	16.01	2.52	4.25
	11th	98.53	5.37	21.47	30.78	11.69
Egg	10th	3.69	16.36	9.76	1.26	2.03
	11th	8.02	16.15	-4.06	5.67	0.29
Fish	10th	7.58	1.89	7.28	2.18	16.55
	11th	13.13	1.00	4.19	-0.40	19.13

Appendix Table 3.4: Various Indicators of Performance during 10th and 11th Plan – South Region

State	Plan	Andhra Pradesh	Goa	Karnataka	Kerala	Tamil Nadu
Total State budget (Percentage change over10th plan)		69.70	74.39	57.71	40.22	74.29
% agri. Expenditure to State budget	10th	29.10	9.52	23.31	13.07	12.66
	11th	32.31	10.31	21.06	15.01	12.42
% agri. Expenditure to agri GSDP	10th	13.25	15.99	15.44	6.10	9.91
	11th	18.43	27.23	15.96	10.34	13.01
Ratio of agri. Exp. to RKVY expenditure		2.10	0.30	4.10	4.6	4.75
Growth in agricultural GSDP (%)	10th	3.98	6.49	2.08	0.88	4.31
	11th	5.29	3.52	6.59	-1.28	3.32
Growth in overall GSDP (%)	10th	8.19	13.99	7.67	8.30	9.67
	11th	8.18	9.06	7.20	8.21	8.59
% net irrigated to net sown area	10th	39.17	17.40	26.68	18.11	51.98
	11th	43.94	25.80	32.16	19.17	58.60
Cropping Intensity (%)	10th	122.85	122.38	120.51	137.71	114.21
	11th	127.71	123.06	123.45	129.01	115.30
Irrigation intensity (%)	10th	131.68	162.50	118.38	115.87	115.37
	11th	139.23	109.06	121.75	115.53	114.46
Milk	10th	6.48	5.07	-2.73	-4.64	2.43
	11th	9.01	1.29	5.54	5.72	5.56
Meat	10th	8.01	150.0	1.94	9.49	45.09
	11th	11.49	46.67	3.76	16.39	26.05
Egg	10th	3.78	-18.96	-0.53	-8.80	17.16
	11th	6.03	2.66	12.28	8.98	9.65
Fish	10th	5.50	193.10	3.54	0.25	2.68
	11th	13.62	19.05	13.71	1.64	2.54

Appendix Table 3.5: Region Wise Various Indicators of Performance during 10th and 11th plan

State	Plan	South India	Western & Central India	North India	East & North East India	All India
Total State budget (Percentage change over 10th plan)		64.08	54.85	54.26	71.34	61.99
% agri. Expenditure to State budget	10th	21.41	23.22	15.40	13.53	17.62
	11th	21.54	20.64	15.36	14.05	18.44
% agri. Expenditure to agri GSDP	10th	12.21	13.43	6.48	6.17	8.80
	11th	15.86	14.47	8.72	9.27	12.42
% of RKVY expenditure to agri. expenditure	11th	3.17	3.96	2.57	5.21	3.62
Growth in agricultural GSDP (%)	10th	2.85	6.06	2.29	2.77	2.38
	11th	4.23	5.67	3.01	3.15	3.66
Growth in overall GSDP (%)	10th	8.60	9.02	6.73	6.46	7.61
	11th	8.09	8.55	7.65	7.76	8.03
% net irrigated to net sown area	10th	35.12	30.98	79.03	39.09	42.29
	11th	40.23	33.93	80.43	40.90	45.02
Cropping Intensity (%)	10th	121.59	125.71	161.51	148.01	131.84
	11th	124.06	131.75	163.10	149.39	129.20
Irrigation intensity (%)	10th	123.07	115.91	150.43	151.28	137.22
	11th	126.92	119.01	160.14	149.87	138.83

Appendix Table 4.1: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1.Micro & Minor Irrigation	On farm water management	87000 ha under UGPL, sprinkler & data logger	NA	↓ cost of cultivation & efficient water management	NA
	Laying underground pipeline	↓ water losses & ↑ area under cultivation	↑ area under irrigation	↑ crop production & ↓ cost of cultivation	↑ water use efficiency
	Purchase drainage machinery & equipment	More area coverage for sub surface drainage	-do-	More area reclaimed	-do-
	Sub-surface drainage for reclamation	waterlogged and saline lands suitable for crop production	-do-	More land available for cultivation	-do-
	Installation of shallow tube-wells	Feasibility study of 4 projects	Prevented water logging	2650 nos. sprinkler install	2606 nos. sprinkler install
	laying out underground pipeline	↓ water losses	-do-	Saving water irrigate more area	-do-
	Installation of shallow tube-wells	Tube wells install with JLN feeder	-do-	300 acre land reclaimed from water logging	-do-
2. Animal husbandry	Reproductive health management	Unproductive animals brought under production	-do-	↑ milk production	-do-
	Fast genetic improvement of cattle and buffaloes	More female calves will produce & ↑ milk production	NA	Machines not imported	NA
	Outsourcing of Artificial Insemination (AI)	Increase individual productivity	NA	Employment generated	NA
	Genetic improvement	Quality breeding services	NA	Maintenance of genetic purity of Murrah Bulls	-do-
	Animal Camp (cows & buffalos)	Infertility health management held in villages	-do-	cows & buffalos brought to productive & ↑ animal yield	-do-
	Artificial Insemination (AI) centre	Establish 127 nos.	-do-	↑area coverage	-do-
	Fast genetic improvement (cattle & buffalo)	More female progeny will born	NA	Born high grade genetic female calves	NA
	Study tours & trainings	Acquired fast emerging technology	-do-	Visit to centres of excellence for quick adoption of technology	-do-
	supply of bar seem minikit	Green fodder availability increase	-do-	Improve animal & soil health	-do-

	Preservation of Top Quality Murrah Buffaloes	Conservation of MurrahGermplasm, high yield animal will born	-do-	Result ↑ milk Production, shift crop to animal husbandry	-do-
	Adoption of new latest technologies	Rearing of quality livestock	-do-	Technical training & skill up gradation	-do-
	Outsourcing AI	500 nos. centres, 50000 insemination & 1000 Gopal training	439 nos. A.I .centres, 42738 insemination, 730 Gopal training & 4173 germplasm calves	Doorstep A.I. Services available to 500 nos. villages.	Doorstep A.I. Services available to villages.
	Mobile veterinary diagnostics and emergency services	Provide veterinary health care	-do-	Control animal disease	-do-
	Herd Health Management	Animal treated for infertility problems	-do-	Sick animal got treatment	-do-
	Project for early assessment of pregnancy	Ultrasound services to farmers	-do-	Early assessment of pregnancy	-do-
	Adoption new technologies through study tours	Latest technology transfer	-do-	Awareness to farmers & management to ↑ animal yield	-do-
	Strengthenin g of the fodder seed farm	Improve quality & production	-do-	↑ production to feeding milch animals	-do-
	Social economic upliftment	Self-employment of youth	-do-	Improve economic status of farmers through animal power	-do-
	Construction of modern animal shed	Scientific management of dairy units	-do-	Diversification from tiny units	-do-
3. Seed	Improved/hy brid seed of vegetable	Will increase area under vegetable	-do-	Increase availability of green vegetable	-do-
	Seed replacement of Sugarcane	Will increase	HYV sugarcane promoted	Increase APY of sugarcane	Increase area & yield of sugar cane
	Supply of minikits	Increase availability of green fodder	-do-	Animal health improve	-do-
	Purchasing of seed potato grading line	Will increase process of grading	-do-	Will help to improve quality of potato seed	Help to improve quality of potato seed
	strengthen	6 nos. plant	-do-	More seeds	-do-

	the seed processing plants	strengthen		available to farmers in time	
	Setting seed testing lab	Created 10000 seed sample analysis	NA	Good quality seed available	NA
	Strengthening of seed Testing Lab	Old equipment replaced	Quality control of different crops	Increase seed testing capacity of lab	-do-
	Distribution of certified seed	Will increase seed replacement rate	-do-	HYV seeds introduced	-do-
	certified seed treatment	Increase awareness, % seed treatment	Increase awareness, 100% seed treatment &↑ area under treated seeds	Farmers get more production	-do-
	Distribution of Seed of alternate crops to the flood-affected areas	Re-sowing area damaged due to excessive floods/rains	-do-	Replaced with alternate crops	-do-
	Strengthening of seed farm	Improve the availability of fodder seed	-do-	Increase availability of fodder to milch animals	-do-
	Seed Treatment of Rabi crops	Seed born disease will control	-do-	Protect crop from disease	-do-
4. Agriculture mechanization	Laser guided land levelling	Precise levelling of field	-do-	Consumption of irrigation water by levelling field	do-
	Resource Conserving Technologies	Saving valuable farm inputs, Consumption of farm inputs by using latest technology	-do-	Reduce cost of cultivation	-do-
	Promotion of new farm implements	Demonstration of latest machinery	-do-	Optimum utilisation of farm inputs	-do-
	Supply of income generating farm tools	Reduce drudgery of labour	-do-	Timeliness operation	-do-
	Providing Cotton Seed-cum-Fertilizer Drill Machine	Timely sowing of cotton crops	-do-	Consumptive use of farm resource	-do-
	Proposal for promotion of Resource conserving technologies	Natural resource conserved	-do-	Timely completion of agriculture operation, saving labour, water & reduce cost of cultivation	-do-

	Promotion of Agricultural mechanization	Recovers more grain & straw, reduce menaces of burning straw	-do-	Saving labour, ↑manpower efficiency, ↓ cost of production & ↑ crop yield	-do-
	Mechanization of cane cultivation	↑ area under sugarcane	-do-	↑APY of sugarcane	-do-
	Farm Implements used in Horticultural Crops	Enhance the mechanisation of horticulture crops	-do-	Will save time &inputs, ↓ PHL	-do-
5. Fertiliser & INM	Supply gypsum on subsidy	Meet out sulphur deficiency	-do-	Improve soil health & crop productivity	NA
	Strengthening of soil testing laboratories	STL upgraded for micronutrient analysis	-do-	Create micronutrient capacity & increase capacity	NA
	Up gradation of existing STL	4 nos. lab upgraded, 1 no. mobile testing van equipped	-do-	Balance use of fertiliser for Improve crop production & productivity	NA
	Mitigating the Sulphur Deficiency in Soils	Mitigate deficiency of sulphur in soil	-do-	Balance use of nutrients, improve soil fertility	NA
	Proposal for Gypsum	Increase quantity & quality of crop	-do-	Balance use of nutrients, improve soil fertility	
	Monitoring of micronutrients deficiencies	Upgrade & strengthen STL for micronutrients analysis	-do-	Balance use of fertiliser for Improve crop production & productivity	NA

Source: http://rkvy.nic.in/as on April, 2013.
Note: NA=Project information Not Available, PHL=Post Harvest Loss, STL=Soil testing laboratories
↑- Increase, ↓- Decrease

Appendix Table 4.2: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Output		Outcome	
		Expected	Actual	Expected	Actual
1. Horticulture	Development of progeny cum demonstration orchards	NA	Water storage 45 lakh litre, Vermi-compost production 170 MT, Nursery raising in 4200 sqmt& irrigation efficiency ↑ by 5 times in 20ha	NA	NA
	Refinement and development of nutrient management module	Information on soil fertility, enhancing productivity and resource use efficiency	500 nos. soil sample analyzed	Nutrient Indexing of Apple, enhance productivity	soil samples will be used for nutrient indexing of apple orchards
	Survey and selection of superior apple bud sports	Introduced genetically improved apple	Evaluation of fruit characteristics	Apple selection with economically important traits	Variation found in apple
	Development of progeny-cum-demonstration orchards	13 nos. WST, 12 nos. MIS, 12 nos. FHU, 6 nos. bore wells, 12 nos. VCU, 7 nos. WO, 2 nos. GPL & 2 nos. SNH	Land development & fencing at 7 nos. PCDOs.	Motivated to adopt latest technology, ↑ orchards productivity	Farmers motivate, adopt latest technology & ↑ orchards productivity
	Strengthening & up-gradation of FPNL	Modernize the equipment's, raise production & efficiency	↑ working capacity	Guide in economic use of fertilizers/nutrient, Higher yields and good quality fruits	-do-
	Up gradation of fruit processing units	NA	↑ efficiency & working capacity, added Aloe vera gel & pickle	NA	Better utilization of raw fruits & diversification of processed products
	Spray schedule for pre mature leaf fall in Apple	Effective control	Improve yield & quality	Refinement of spray	Information generated to control disease
	Apple Rejuvenation Project	5000 ha. under old and senile apple plantations	New plantation & orchard water management in 500 ha.	10000 nos. apple growers uplift SES	Project in progress
	Establishment & strengthening of mushroom units	↑ Production capacity & 100 Establish small scale mushroom units, ↑ Production by 80 MT	↑compost production capacity & efficiency, ↑production &yield	Self-employment to 100 small farmers, ↑ production capacity	-do-

	Strengthening of horticulture training & extension	Supply of inputs created at 20 extension centers, establish 2 horticulture extension centers, skill development of 1240 farmers through exposure visit & training camps	Supply of horticulture inputs, 1240 farmers trained	Improved TAS &Supply of inputs to farmers	Skill development of farmers
	Development of beekeeping stations as nucleus apiaries	Maintained 1000 bee-colonies, raised to1500 in next season	Maintained 1000 bee-colonies , Provide pollination services to the farmers	↑ honey production by 8 MT, ↑ revenue & Providing self-employment to 25 persons	Expected yield 5 MT & self-employment to 15 persons
	On Farm trails of improved peach varieties	NA	Controlled the pest & weed population	Improved peach varieties	Observed Maximum mean fruit weight (196g)
	Development and popularization of contingent plan for horticultural crop production	Increase awareness regarding CC	Awareness on impact on horticultural crops & mitigation strategies	Contingent plan to changing climatic scenario	Identified potential crops
	Strengthening of beekeeping station	Maintained 700 bee colonies, raised to 1000 in the next season by multiplication	Developed 7 Beekeeping stations & placing 700 bee colonies of Italian honeybees	↑ honey production by 5 MT, ↑ revenue & Providing self-employment to 15 persons	↑ honey production by 10MT/ annum
	Strengthening of floriculture nurseries	Strengthening of 3 floriculture centers, ↑ Production capacity& efficiency	1 FDC & establish 3 nursery	Strengthening floriculture centers, popularizing floriculture activity, attract tourist	↑ improved plant material production capacity & demonstrational value
	Protected cultivation in green houses	Green houses 17400sq.m, 81 ha under vegetable, 1500 farmers trained & 534 exposer visit	Availability of cash crops throughout the year, ↑ area & capacity building of farmers	Self-employment opportunities for rural youth	Improve Technical knowledge
	Development of progeny cum demonstration orchards (PCDO)	20 nos., 6000 cube.mt water storage, improve 17MT vermin-compost production capacity	NA	Improve demonstration value & production capacity of fruit plants	NA

	Nursery for diversification of fruit crops	Diversification of fruit plants in frost prone region	Raising of plant material of 45000 nos.	Awareness and training to farmers to mitigate germ-plasm	Diversification of fruit plants in frost prone region
	Multi crop Nursery Production of Pomo Fruits and Vegetable Crops	NA	Availability of quality planting material	NA	↑ production & ↑ income of farmers
	Formulation and Validation of PMMFIVC	↓no. of pesticide applications, ↓ cost of inputs, ↑ quality produce & Better consumer health	Project in progress	↓no. of pesticide applications, ↓ cost of inputs, ↑ quality produce & Better consumer health	Project in progress
	Standardization of production technology of high value vegetables under protected conditions	Boost income of farmers, providing training & demonstration	Tomato, Capsicum, Cucumber and French bean genotypes evaluated & tested under poly-house	Collected Seed material of different vegetables	Naveen-2000(+) in Tomato, Bombay in Capsicum, Kian and Isatis in Cucumber and Contender in French bean were observed
2. Organic farming & bio-fertilizer	Development of liquid Bio-fertilizers and bio fertilizer	Made available in hilly region	Protected cultivation in poly-houses	Improve soil health, ↑productivity	Formulation prepared & field testing
	Promotion of organic farming	Construct 20000 nos. Vermi-compost unit	Supply of Vermi culture, assistance for organic certification & certified bio-pesticides	30000 MT Vermi-compost/annum, 2000 ha organic certification	30000 MT Vermi-compost/annum, 1800 ha organic certification
	Organic Farming Promotion in Fruit and Vegetable Zone	Adoption of organic farming in 1300ha	In progress	Promote organic farming & improve economy	In progress
	Promotion of organic farming & soil health management	Supply VC to 90000 families, organic farming in 5000ha & Bio pesticides supplied & bio-agents released in 4000ha	Supply of vermiculture, assistance for organic farming & certified Bio pesticides & bio-agents	135000MT VC/annum, saving of chemical fertilizers, organic certification of 5000 ha	135000MT VC/annum
	Promotion of Organic Farming	Construction of 22000 VCU, vermi culture of identified strains to 22000 farmers, organic certification of 2500 ha	Supply of vermi culture, assistance for organic farming & certified Bio pesticides & bio-agents	33000 MT of vermi compost /annum, saving chemical fertilizer, ↓ cost of cultivation	33000 MT of vermi compost /annum & 2500 ha organically certified

		area & 6000 ha PCOF			
	Vermi composting for soil health improvement	Construct 50000 VCU	Completion of VCU	Production of 20000 MT vermi compost	Production of 30000 MT vermi compost
3. Micro & minor irrigation	Minor irrigation & water harvesting projects	283 ha CCA	225 ha CCA	Recharging of ground water, drought mitigation & ↓ soil erosion	-do-
	Water harvesting, minor irrigation through flow/lift/ground water	Completion of FIS/LIS/WHS 17 schemes, STW 10 nos., SBW 200 nos. , PBLCP 100 nos. & TIS 250 nos.	In progress	719.46 ha CCA	In progress
	Utilization of Existing Water Potential by Constructing Community Irrigation Projects	Completion of 7 CIP & 22 WHP	Lifesaving irrigation for crop growth	↑ production & productivity of different crops	Enhance production & productivity
	Construction of WHP & utilization of created water potential	Construction of 8 WHP	-do-	178.28 ha CCA	-do-
	Community water harvesting and utilization	Completion of 22 WHP & 7 CIP	↑ production level by 15 % in irrigated area	575.59 ha CCA	Recharging of ground water, ↓ soil erosion
4. Animal husbandry	Immunological and monogenetic profiling of indigenous hilly (pahari) cattle	Innate disease resistance will become available	In progress	Select appropriate animals for future breeding programmes	In progress
	Characterization and Conservation of Local Indigenous Hill Cattle	Help hilly cow to independent breed	DNA isolated & strengthen Cyto-Genetic Lab	Genetic improvement of hilly cow	DNA used for various genes & micro satellite markers
	Development of small ruminant	Sheep will be drenched & improve sheep health	Sheep drenched for endo&ectopractices	Get more wool, meat &early maturity of sheep	Get more wool &meat
	Reproductive Behavior and Genital Disease Pattern in Gaddi Sheep	Documented reproductive disorders	In progress	Conservation of Gaddi Sheep & awareness on reproductive disorders	In progress
	Providing Cattle Crushes in New Veterinary Dispensaries	NA	Provide Cattle crushes	NA	Proper treatment of animal, avoid injury
	Mobile Dip Tanks along	Mass dipping and	Address the problem of	↓ mortality rate, ↑ wool ,	-do-

	with Dipping Drenching Material	drenching& improve sheep health	Ecto&Endoparasitic infestation	meat production & better returns to breeders	
	Post- Partum Anestrus and its management	Estimation causes of Post- Partum Anestrus& develop package practice	In progress	Improving reproductive efficiency of cows	In progress
	Rural Economic Empowerment & Employment Generation through Management	↑ employment opportunity Livestock bye product processing &	NA	↑ Milk production by 2 litre/day, ↑ income of Rs. 10800/performer/annum	-do-
	Reproductive Health Status of Abandoned Cows	↑ stray cattle population &	In progress	↓ stray cattle population	In progress
	Small ruminant development	Drenched for ecto&endo parasitic infestation & grazing pastures, Improve sheep health	-do-	Get more wool, meat & healthy lambs & early maturity of sheep	-do-
	Organization of Sheep Breeders Camps	Organize 10 extension camps & Benefited 1000 sheep breeders	Participate 2000 Sheep Breeders on awareness camp	Acquire knowledge on latest sheep husbandry	Better awareness of Sheep Breeders on scientific techniques
	Calf Ration to Crossbred Cow and Buffalo Calves	Early maturity & optimum capacity of milk	Covered 497 cross bred calves against 338 calves	↑ Milk production by 2 litre/day, ↑ income of Rs. 10800/performer/annum	Early maturity, ↑ Milk production by 2 litre/day
	Development of cultivated fodder crops	Distributed 7600 qtl. fodder seeds	Distributed 8032 qtl. fodder seeds	15970 ha, produce 7-8 lakh MT green fodder	Availability of green fodder
	Cultivation of malori plant	Use feed ingredient	In progress	Improve the economics of poultry production	In progress
	Development of cultivated fodder crops	↑ availability of green fodder	Assured availability of green fodder during Rabi season	6931 ha under Rabi fodder, Production 3 lakh MT	-do-
	Establishment of semen bank	Available good quality germ plasm& upgrade hilly cattle	Introduce good quality germ plasm for A.I. purpose	Improvement A.I. conception rate, ↑ milk yield	Born Good quality calves, ↑ milk production
	Strengthening of Diagnosis investigation lab.	Replacement of outdated equipment's /instruments	Blood & Urine samples examined	Provide disease specific treatment	Availability of better disease diagnostic facilities

	Animal Disease Research Laboratory (ADRL)	Investigation of Mobile ADRL	-do-	Help spot preliminary diagnosis and treatment	Doorsteps diagnosis and treatment facility
	Open Space for Wool Drying and Storage	NA	Ascertained after completion of projects	NA	Ascertained after completion of projects
	Production Capacity of Mini Wool Scouring Plant	NA	Reduction Wastage	↑ Quality production, value addition, cost effectiveness	NA
5. Crop development	Enhancement of productivity and production of course cereal	Distribute 18000 qtl hybrid maize seed	Distribute 17463 qtls hybrid maize seed	To achieve productivity level of 26 qtl. /ha	Area expansion
	Enhancement of productivity & production of maize	Distribute 16572 qt seed	66000 ha under hybrid maize	Enhance productivity of 3 qtl./ha	Area expansion
	Promoting SRI in mountain farms	Expected wheat productivity around 4.5 t/ha	Grain yield of 44 q/ha	Create talent pool of 800 resource persons	↑ 69 % yield grain
	Development of Cultivated Fodder Crops	Distribute 8600 qtl. fodder seeds	Distribute 8600 qtl. fodder seeds of different crops	18050 ha cover & produce 8-10 lakh MT	Availability of green fodder in Kharif and Rabi season
	Promoting SRI in Mountain Farms	Expected paddy yield 5.5 ton/ha	NA	Create talent pool of 800 resource persons	NA
	Enhancement of productivity & production of maize	Distribute 10000 qtls. hybrid maize seed distribute in 40000 ha	40000 ha under hybrid maize	Achieve productivity level of 23 qtl./ha	Achieved productivity level 22.7 qtl./ha
6. Seed	Promotion of 100% seed treatment	Aware of seed treatment, 175000 qtls. seed treated, 380 demonstrations & 24 trainings	Farmers awarded regarding importance of seed treatment, Contribution to achieve targeted growth rate	↑ seed germination, uniform seed emergence & productivity	-do-
	Seed multiplication farms and training to the seed growers	18.5ha seed production area, 2 seed stores, 37 ha irrigation , 5 VCU &training to 1530 seed growers	Seed multiplication farms strengthened	↑ production of certified seed, quality seed at cheaper price & ↑ SRR	↑ Production of fountain & certified seed by 1000 qtls. & 20000 qtls respectively
	Production of quality seed and planting materials	Seed production of Cereals, Pulses & oilseed & Production of Quality horticulture	Executing targeted activities	↑ Production of Quality Seed, ↑ agriculture production & ↑ Quality Planing Material of	↑ Production Cereal Pulses & Oilseeds breeder seeds by 340q, Foundation by 650q, certified by 1290q &

				Horticulture	Horticulture saplings by 46000 nos.
	Production of Quality Seed	Educating Farmers, Production of Healthy Seed/Planting Material, Popularize Seed Village Concept & ↑ agriculture production	NA	Department of Agriculture and Farmers	NA
7. Marketing & post-harvest management	Cold chain for milk and milk products	Opening of milk cooperative societies	Installing 15 nos. BMC & ↑ Chilling capacity by 16,000 LPD	365 lakhs liters milk will be procured, chilled, marketed	↑milk processing & chilling testing facilities
	Wool storage facilities	Creation additional storage facility	Creation scientific additional storage facility	↑ wool procurement, remunerative better quality of wool, ↓ wastage	↑ wool keeping quality
	Collection centers for vegetables	NA	NA	Grade, short & pack of vegetables for selling in regulated market	NA
	Sub Market Yard	NA	NA	Marketing facilities, ↓ transport cost & crop diversification	NA
	Strengthening of Agmarking labs	Strengthening Honey Agmark labs, enhance making capacity	Agmarking labs better equipped	↑ revenue & enhanced packing capacity	Improve quality, ↑ revenue & enhanced packing capacity

Source: www.rkvy.nic.in as on April, 2013

Note: ↑- Increase, ↓- Decrease

Appendix Table 4.3: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Output		Outcome	
		Expected	Actual	Expected	Actual
1. Horticlture	Bee-Hives on 50% cost	NA	40 nos. beekeepers	NA	NA
	Cost of planting material of high value flowers for poly house	NA	Cover 6515.2 ha	NA	NA
	Area expansion of Floriculture	NA	↑ 305.39 ha	NA	NA
	Assistance to Beneficiaries for Apiculture	NA	Benefit 251 farmers	NA	NA
	Assistance to bee breeders for production of minimum 2000 bee colonies/year	NA	To 2 bee breeder farmers	NA	NA
	Integrated Mushroom Centre	NA	Establish 2 nos.	NA	NA
	Promotion of Protected cultivation through Green Houses	NA	Cover 47480 ha	NA	NA
	Promotion of protected cultivation	NA	Promote 1391 nos.	NA	NA
	Shade nets house tubular structure	NA	Construct 77 nos.	NA	NA
	Protected cultivation - Fan and Pad (Public)	NA	Cover 2050 ha	NA	NA
	Protected cultivation- Tubular Structure (Private)	NA	Cover 7553.7 ha	NA	NA
	Protected cultivation - Wooden Structure (Private)/Bamboo structure	NA	Cover 1080 ha	NA	NA
	Protected cultivation - Shade Net House-Tubular (Pvt)	NA	Cover 2452 ha	NA	NA
	Establishment of Nursery for production of planting material	NA	Establish 2 nos.	NA	NA
	Establishment of Nursery production of planting material	NA	Enhance production in 23.5 ha	NA	NA
	Introduction of new Vegetable Hybrid Varieties	NA	In 985.03 ha	NA	NA
	Area expansion under Vegetables	NA	Enhance 1344 ha	NA	NA
	Assistance to Beneficiaries for Mushroom	NA	364 nos. beneficiaries	NA	NA
	Mushroom Development	NA	Benefit 165 farmers	NA	NA
2. Micro & minor irrigation	Bore Well/ Sprinkler System in Rainfed areas of saffron and maize	NA	Install 179 nos. Bore Well/ Sprinkler System	NA	NA
	Creation of field channels, water resources, treatment of springs, renovation & de-silting of irrigation khuls, sprinkler and drip irrigation	NA	Cover 725 ha	NA	NA
	Bore Well/Sprinkler system in rainfed areas of Saffron and Maize with 50% subsidy	NA	Distribute 59 nos. Bore Well/Sprinkler system	NA	NA
	Installation of sprinkler irrigation system along with pump	NA	Install 1 nos.	NA	NA

	sets and HDPE Pipes				
	Community Tank/On-farm Pond/On-farm Water reservoirs	NA	4 nos.	NA	NA
	Construction/remoulding of field channels and creation of water resources	NA	Cover 1424.79 ha	NA	NA
	On Farm Development Works	NA	Cover 1521 ha	NA	NA
3. Animal husbandry	Purchase of crossbred rams & their feed	NA	1707 nos.	NA	NA
	Breed Improvement, Cost of feed and purchase of Elite rams	NA	543 nos.	NA	NA
	Mini Fodder kits	NA	Distribute 19820 nos.	NA	NA
	Strengthening of fodder dev. Farm	NA	Strengthen 3 farm	NA	NA
	Urea -Molasses enrichment kit	NA	Distribute 274 nos.	NA	NA
	Establishment of 25 Ewe unit through participatory mode	NA	Cover 140 nos. farmers	NA	NA
	Establishment of Goat unit	NA	Establish 19 nos.	NA	NA
	Hoof pairing scissors	NA	Distribute 1298 nos.	NA	NA
	Digital livestock weighing balances	NA	Cover 211 animals	NA	NA
	Holding of animal fertility camps	NA	220 nos.	NA	NA
	District & Block level awareness camp	NA	Trained 95 farmers	NA	NA
	Completion of existing water distribution system	NA	1 nos.	NA	NA
	Procurement & replacement of trevis	NA	875 nos.	NA	NA
	Purchases of Casting ropes	NA	1986 nos.	NA	NA
	Purchases of Machinery equipments and surgical equipments	NA	379 nos.	NA	NA
	Purchase of Bucks	NA	56 nos.	NA	NA
	Purchase of Shearing Plant with Gen set and allied accessories and Imparting Training	NA	130 nos.	NA	NA
	Establishment polyclinic	NA	20 nos.	NA	NA
	Strengthening and up gradation of District Laboratories	NA	10 nos.	NA	NA
	Provision for creation of rearing space (Paddock) ,fixing of chain link fencing for mother farms	NA	4 nos.	NA	NA
4. Marketing &post harvest management	Installation of Ropeways for transportation of Agri /Horti. Produce	NA	2 nos.	NA	NA
	Establishment of Flower Mandi	NA	1 nos.	NA	NA
	Onfarm handling of vegetable using plastic crates	NA	1367 nos.	NA	NA
5. Seed	Promotion of Certified Seeds for Paddy-wheat, Baddy-oilseed, Paddy-oats rotation	NA	1971 qntls	NA	NA
	Strengthening of Seed Multiplication Farm	NA	60 nos.	NA	NA
	Support to State/ Private seed farms	NA	1 nos.	NA	NA

	Incentive on quality seed production though SVP for Maize, Wheat, Oilseed, Potato & Paddy	NA	1968 qntl	NA	NA
	Setting up of Tissue Culture Unit –Public	NA	1 nos.	NA	NA
6. Fisheries	Propagation of Trout culture	NA	19 nos.	NA	NA
	Construction of Carp units	NA	188 nos.	NA	NA
	Construction of Low Cost Houses	NA	146 nos.	NA	NA
	Construction of Feed Mill Building/ Feed Store	NA	1 nos.	NA	NA
7. Extension	Purchase of camp equipments for HLP @ Rs. 10000/-	270 nos.	NA	NA	NA
	Provision of Tarpaulins to Chopan/ Bakerwal families	To 1301 families	NA	NA	NA
	Construction of low cost houses	43 nos.	NA	NA	NA
	Purchase of Camp equipment for temporary shelter	1594 nos.	NA	NA	NA
	Provision of Tarpaulin to Chopans	865 nos.	NA	NA	NA
	Provision of Portable Solar lanterns to chopan(Phase-I)	1257 nos.	NA	NA	NA
	Exposure visits and Training camps for Farmers	76 training &exposure visits	NA	NA	NA
	Farm visits/ Darshan	59 farm visit	NA	NA	NA
	Training of farmers within and outside the State	1160 farmers trained	NA	NA	NA

Source: http://rkvy.nic.in/ as on April, 2013;

Note: NA=Not Available, MDC=Mushroom development centre, EWDS= Existing water distribution system, CRP=Casting ropes purchase, DLWB=Digital livestock weighing balances, BLA= Block level awareness, DSBC= Divisional sheep breeder conference, RFT=Ropeways for transportation, EFM= Establishment Flower Mandi, CSPW=Certified seed for paddy and wheat, SMF=Seed multiplication farm, QSP=Quality seed production, TCU=Tissue culture unit

Appendix Table 4.4: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Natural Resource Management	Reclamation of degraded soils	Reclaimed the land, decreasing the cost of cultivation	NA	Drainage the water logged area, 800 ha degraded area reclaimed, ↑ yield by 50% & ↑ land value by more than 60%	NA
	Conservation of irrigation water	LSI, ↑ yield, saving labour	NA	LSI, ↑ yield, saving labour	NA
	Rainwater harvesting	GWR, storage rain water & ↑ farm land value	NA	Declining water levels arrested, catchments area rehabilitated, flood damage control	NA
2. Horticulture	Financial Assistance for Horticulture Activities	Enhanced area & productivity	NA	Improvement of quality & productivity	NA
	Promotion of Citrus Cultivation through Contract Farming	↑ area under citrus processing & promote contract farming	More area under citrus	Utilize fruit production of commercial Citrus orchard	Yield of citrus enhanced
	Promotion of low cast net house technology	Disease free vegetable produced	NA	Improve quality & yield of vegetable, increase fruiting spam & increase income of farmers	NA
	Strengthening of Existing Nurseries	Disease free, healthy nursery plant provided	Better quality & more yield	↑ productivity of orchards	Nursery plants are free from insects
	Certifying of Citrus Nurseries against Plant Pathogens	Spread disease free orchards	NA	Produce disease free horticulture, enhance market place & increase farmers income	NA
	Project on Sericulture Development	Additional income of farmers	Horizontal & vertical growth of cocoon production	NA	NA
	Construction of Shade Net House to improve the quality of Vegetable	Improve the productivity & quality of vegetables, use new technology	NA	Produce disease free vegetables, enhance market place & increase farmers income	NA
	Vegetable Cluster	Availability of fresh & good quality	Actual output will reported afterwards	More area under vegetable crops	NA

		vegetables, improve human consumption			
3. Animal Husbandry	Import of HF Frozen semen	↑ milk production 1 ltr per day	Semen inseminated in 1.45 lac animals	↑ milk production 202.5 million Kg/year, income generation of Rs, 324 crore in 1 year	Result available after calving
	Import of HF frozen sexed semen	Increase milk production	Supply is at final stage	25000 female calves resulting more milk production, restriction of production of unwanted male calves	Check the no. of unwanted male calves
	Import of HF Frozen semen increase cows productivity	Increase milk production	NA	Increase milk production by 202.5 million kg/annum, income earn Rs. 324 in one year	NA
	Processing of Turkey meat into value added meat products	NA	Suitable recipes be developed	NA	Popularize turkey meat
	Incentive for Animal Insurance	↓cost of insurance	Farmers benefited in case of animal death	Will Improve health & productivity of dairy farms	Improved health & productivity of dairy farms
	Strengthening the FMD control programme	Improve animal health, ↑reproduction & ↑productivity	Check the spread of FMD disease	Prevention of milk production loss & cost of treatment of animals	Provide good health to animals
	Provision for veterinary care and medicines	↑ milk production & Improve animal health	Medicines of worth Rs. 5.01 distributed	Improvement of animal health & milk production	Helps in providing good health cover
	Control of Brucellosis	↑ milk production & Improve dairy health care	Prevent of Brucellosis	Health cover to dairy animals & veterinary attendants	Enhance milk production
	Veterinary care and medicines	↑ milk production & Providing health cover in dairy animals	Providing health cover to livestock	↑ milk production & Improve animal health	Protect animal against disease & good quality milk will available
	Awareness Programme on Mastitis Control	Control of Mastitis disease & producing quality raw milk	Check the spread of Mastitis	Productivity & quality of milk improve	Enhance the quality of milk production
	Organization of Animal Shows for promotion	Awareness in livestock owners	Promotion of livestock sector	Availability of High yielding animals	Popularize good breeds

	Establishment of Fodder Seed Processing	Enhanced the availability of clean, graded & packed fodder crop seeds	Improvement of fodder seed quality	Enhance milk production	Improvement of fodder seed quality
	Increase of Milk production and reduction of infertility	Mineral mixture boost milk production & reduce infertility	Milkfed&Markfed are in final stage of supply	Mineral mixture boost milk production & reduce infertility	Mineral mixture helps good health, enhance puberty & milk production
	Strengthening of fodder seed/livestock farms	Supply fodder seed to enhance fodder production/acre/year	Seed grader install	Supply fodder seed to enhance fodder production/acre/year	Helps increase fodder production
	Setting up of Residue Analysis laboratory	Detection and quantification of livestock & feed & fodder residuals	-do-	Boost of better marketing & increase export	Boost export & fetching higher prices of their produce
	Establishment of new piggery units	↑ income of piggery farmers & promotion of pig farming	Setup 20 nos. piggery units	↑ income of piggery farmers & promotion of pig farming	NA
	Setting up of Stall fed Goat rearing units	↑ Stall fed Goat units	Setup 40 nos. goat units.	Improvement of milk & meat production	NA
	Processing of Turkey meat	Enhance market	Enhance market & promoted as a backyard venture	Enhance market	Enhance market & promoted as a backyard venture
	Incentive for Electronic Chip and Insurance	Provided insurance cover to dairy animals	↓cost of insurance &checking of fraudulent claims	Provided insurance cover to dairy animals	Improve health & productivity
	Improvement of animal housing	Facility to test the milk quality & cattle feed	Improve health of livestock & ↑ productivity	Lowering disease incidence & Cover health care cost	Improve health of livestock & ↑ productivity
	Dairy Education, Training and Extension Establishment	NA	Capacity building of dairy farmers	↑ income dairy farmers & generate self employment	↑milk yield & improve farmers economic status
	Quality control on feed and milk	NA	↑ milk production	Better animal health & ↑ milk productivity	Farmers get quality feed & analyze milk for good purpose
	Mechanization of Dairy	Propagation of	NA	Clean milk production, ↑ efficiency	NA

	Farm Operations	Mechanization in Dairy Farm		& ↓ labour dependency	
	Setting up of by-Pass protein plant by MILKFED	NA	Enhance milk production 1 litre/animal/day	Increase protein, increase milk production by 1 litre/animal/day	NA
4. Micro & minor irrigation	Conjunctive use of surface & sub-surface water	↑ yield by 25%, conservation water by 40% & saving labour by 30%	NA	↑ yield by 25%, conservation water by 40% & saving labour by 30%	NA
	Sinking & installation of 100 deep tube wells	NA	NA	↑ agricultural productivity of small & marginal farmers	NA
5. Marketing &post harvest management	Strengthening of Marketing Infrastructure	Minimise losses in open auction plat farm	Minimise losses of grains &admixture during the marketing	Enhance farmers income	-do-
	Provide plastic creates to improve the marketability of fruits and vegetables	↓ PHL of fruits & vegetables by up to 40%,ffrmers will get more income	↓ PHL of fruits & vegetables	Safe handling of horticulture product & ↓ PHL	NA
	Marketing Interventions for Promotion of Potato Cultivation	Improve in potato production & marketability	NA	Improve in area & productivity of potato & improve farmers income	NA
6.Crop development	Promotion of cultivation of basmati rice	↑area under Basmati rice & conserve underground water	NA	↑area under Basmati rice & conserve underground water	NA
	Promotion of Sugarcane Cultivation	↑ Production up to 2.25 lakh qntls.	NA	↓ cost of cultivation & improve productivity	NA
	Wheat Seed replacement and its treatment	NA	NA	Developed improved verities of wheat, efficient system of production & supply of seed to farmers	NA
	Replacement of Wheat seed	Better SRR, seed treatment & timely fertiliser available	NA	↑ yield of wheat crop	NA

Source: RKVY, 2013;Note:NA=Not Available, DFA=Drought Affected Farmers, IVS=Improved Variety Seed, Horticulture Crops, DDT= Drought tolerance resistance, PHL= Post harvest loss, PHM=Post harvest management.

Appendix Table 4.5: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Output		Outcome	
		Expected	Actual	Expected	Actual
1. Micro/minor irrigation	**33 KVA feeder on irrigation canals**	Strengthen 7 lift canals at 4 districts	NA	↑ NIA	
	Removal of seepage and water logging	Will treated Near canals, seepage & waterlogged area	NA	↑24203 ha under cultivation	NA
	Modernization of 25 (total 40) lift pump canals	Construct 33KV feeder lines & 33/0.4 KV sub-station on 40 nos. lift canals, availability of spare way in 132/220 KV sub-stations	NA	Construct feeder line (926.60 km) & lift pump canals 40 nos.	NA
	Construction of Blast well	Construct 90 blast wells	NA	Additional 270 ha under irrigation	NA
	Project for Minor Irrigation Works	Deep & medium boring 4519 nos. & community tube-well 424 nos.	DB 2348 nos., MDB 2089 nos., CT 29 nos.& BR Ambedkar tubewell-395	↑Additional 77730 ha under irrigation, ↑ 25% GIA & ↑ farmers income of Rs. 33 crore	Additional 77730 ha under irrigation
	Minor Irrigation Programme	DB 5000 nos., MDB 4624 nos., Dr BR Ambedkar Tube well 250 nos.	Construct DT 3382, MT 4999 & BR Ambedkar TW-270.	↑Additional 1.5124 lakh ha under irrigation, ↑ 25% GIA & ↑ farmers income of Rs. 371 crore	Create 1.18 lakh ha under potential irrigation
	Minor Irrigation Works	DB 2500 nos., MB 11391 nos. & 600 nos. Dr BR Ambedkar TW	NA	↑Additional 1.75 lakh ha under irrigation, ↑ 25% GIA & ↑ farmers income of Rs. 84 crore	NA
	Water distribution system	3000000 km 110 mm HDPE pipe for 20000 farmers	NA	Around 20% saving water	NA
	Creation of irrigation potential	Distribute 17143 nos. Shallow boring with pump set	NA	Create 68572 ha under potential irrigation	NA
	Energization of 7955 tube wells	7955 nos. tube wells	Energization 7955 nos. private diesel tube-wells	↑Additional 15910 ha under irrigation, ↑ 25% GIA	Create 18410 ha irrigation potential
	Electrification of 21120 deep/medium tube wells	Energization 21120 nos. tube-well	23520 nos. private diesel tube-wells	↑Additional 42240 ha under irrigation, ↑ 25% GIA, low cost of	↑GIA, ↓ cost of cultivation & ↑ production

				irrigation	
	Relaying and modernization of guls of tube wells	1560 nos. guls of tube wells covering 9360 ha	780nos. guls of tube wells covering 4680 ha	Renovated 1152 Km field channels	Renovated 576 Km field channels
	Modernization of 4.0 km PVC pipeline on tube well	Renovation 187 nos. tube-well, pump house/tank covering 2004 ha	Renovated 187 nos. tube wellscovering 1122 ha	800 km pipeline laid covering 2004 ha	Installed 44.88 Km pipeline
	Modernization of 2.0 Km PVC pipeline of tube wells	Renovation 163 tube well, pump house/tank covering 1866 ha	strengthened 163 tube wells covering 652 ha	373 Km pipeline laid covering 1866 ha	Installed 13 Km pipeline
2. Innovative programmes/ training/ capacity building/ others	**UP Agriculture Diversification Project**	ICTD Demonstration 521859 nos., Training 64851nos., Tech prog. 1676nos., Harvesters2760nos., SHG 2196nos., FCP 3113nos., Para vet 1264nos., Hatcheries 39nos. &Mandies 30 nos.	NA	↑ productivities of agriculture & allied sector	NA
	Promoting intensification and diversification	production estimation of major crops viz. wheat, paddy, sugarcane, bajra& gram	Pre harvest production forecast of wheat, paddy, sugarcane, bajra& gram	Forecast result used for marketing, storage, price evaluation, crop health, crop insurance	-do-
	Modification of RoboKisan	Development of Robo-kisan	NA	Detection of early disease incidence	NA
	Saturation of entire villages of the State with credit cards	Distribute 65 lakh credit cards,covering villages of 820 blocks	NA	Will benefit 65 lakh farmers	NA
	Establishment of Centre of Excellence	Testing Basmati rice, Mango, Cut flowers for export	NA	Certification of agric. commodities to export	NA
	Activation of new soil testing lab	Strengthen soil testing lab	NA	↑ food production/productivity, 18 lakh soil sample analyzed/annum	NA
3. Seed	**Distribution of seed mini kits for Kharifcrop**	Distribute 1207337 nos. seed mini kits	-do-	Fill up gap of kharif crop production	-do-
	Farmers participatory quality seed management	Strengthen seed processing facility	Strengthen 2 mobile seed processing units	Produce quality seeds 58,000 qntls.	Enhanced SRR
	Strengthening of seed stores situated	Maintenance old seed stores 813	Strengthen 469 godowns of capacity 500MT	Distribute 5.50 lakh qtl certified seed	Renewed 93800 MT Seed storage capacity

	Strengthening of seed processing unit	Strengthen 5 centers with seed go down and 2 centers with replacement of Seed processing machineries	NA	Seed go down capacity of 6 centers will ↑ by 2000 MT, centers seed processing capacity will ↑ by 8 TPH/each	NA
	Strengthening of Seed Processing Plant	Strengthen Seed processing centers	Strengthen 2 Seed processing centers	↑ additional go down facility of 2000 MT	Strengthen2000 MT seed & go down Seed processing centers
	Participatory Seed Production	Strengthen 2 Seed processing plant, Produce 1000 qtl foundation/certified seed	Seed processing plant 10TPH capacity, produce 700 qtl foundation seed & train 1500 farmers	Seed processing capacity will ↑ by 10TPH, seed store capacity 10000 qt/each & 1000 qtl foundation/certified seed	Enhance seed storage capacity upto 10000 qtl, produce 700 qtl foundation seed & will train 1500 farmers
	Seed Testing Laboratory	Establish	NA	NA	NA
	Subsidy on Rice/Wheat Seed distribution	Wheat 415539 qntls& rice 61342 qntls	NA	CSR of wheat 415539 ha & paddy 175263 ha	NA
	Strengthening of university seed farm	Strengthen Univ. farms to produce 2000 qtl breeder seed	Achieve 100%	↑ Breeder seed production.	↑ availability of foundation & certified seed
	Strengthening of Govt. Farm & Seed production	Strengthen 165 seed farms	Construction of seed store 5, underground irrig channel 50000 mtr, repair of channel-25000 mtr., boundary wall- 5000 mtr.	↑ seed production capacity by 14500 MT.	Seed production 1288220 qtl., 1200 ha potential irrigation & 1000MT seed storage capacity
	Govt Agriculture Farms and seed production	Strengthen Govt. seed farms, seed production 7000 ha	Strengthen 165 SPF, 75 SPI, establish 1 SPP, Boundary wall 5000 mt, fencing 22500 mt., irrigation channel 18560 mt., 139 threshing floors, maintenance 150 old seed stores	Seed production 15760 MT, ↑ 10%	Seed production 145000 qtl., 600 ha potential irrigation, 250MT seed processing capacity & protection of 388 ha

Source: http://rkvy.nic.in/ as on April, 2013

Appendix Table 4.6: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Output		Outcome	
		Expected	Actual	Expected	Actual
1. Animal husbandry	**Modernization and expansion of animal breeding farms**	Construction of Tube-well, Gaushala, Biogas-plant, fodder storage godown, Vet. Dispensary, Cow urine laboratory, Electrical electrification etc	NA	Improved production, yield of fodder, better human resource & ↑ milk	NA
	Genetic improvement of local goats	creation 11 centers, providing 49 bucks	NA	Characterized Local Pantja goats, distributed 49 bucks at 11 centers	NA
	Strengthening of Angora goat breeding farm	Expected procurement of 300 animals & 2nd year 600 nos., motivate people	Work in progress	Training 235 farmer, produced 26 Angora goat progeny	Work in progress
	Conservation and propagation of Badri Cow	100 beneficiaries provider 1 upgraded Badri Cow	NA	Improved breed & livelihood, Employment generation	NA
	Wool Analysis Laboratory	Analyzed 1000 wool samples for quality grading	NA	Beneficial for breed improvement of sheep	NA
	Establishment of Goatery Units	455 nos. Goatery units	NA	Provided 455 beneficiaries of 10 female crossbred goats one male goat/unit	NA
	Strengthening of Exotic Sheep Breeding Farm	Purchase of 10 Ram buillet sheep and 250 Gaddi goats	NA	Distribute progeny born to sheep/goat farmers	NA
	Pilot project on EMU Rearing & farming	Will select 100 interested beneficiaries	NA	Expected income Rs. 10000/month	NA
	Animal Husbandry Training Centre	Benefiting 120 farmers/annually	NA	Facilitated training & extension	NA
	Fodder storage godown	Establish 3 nos.	NA	Establish 3 nos.	NA
	Feed Testing Lab	Strengthening	NA	Availability of quality feed & prevention of feed born ailments	NA
	Establishment of 6 Fodder Banks in 3 districts	Availability of balance & nutritious food to livestock	NA	NA	NA
	Promotion of Japanese Quail	Establish Kuroiler Parent Unit & Poultry sheds renovation	NA	Produce 500 chicks/day, benefit 30 farmers/day	NA

	Establishment of barbari goat	Expected 500 animals for distribution, improve knowledge of latest technology	Establish barbari goat unit, insured animal	200 farmers educated on meat management , produced 18 progeny	Trained 200 farmers & produced 18 progeny
	Establishment of PashuSewakendra	NA	NA	Improved Animal health	NA
	Fish Feed Mill	Production nutritive fish feed	NA	NA	NA
	Strengthening of fodder bank	Construct 2 straw storage go down & RWH system	Construct 2 straw storage go down	↑storage & transport facility, fodder available during lean period, ↓cost of production	Construct 2 straw storage go down
	Setting of Dry Dairies	Provided assistance in 14 gausadans for making bio-gas units	NA	1500 animals shelter house facility, generate 5kw electricity &produce 30 quintals vermin-compost	NA
	Strengthening of Training centre	Capacity building of staff & farmers	NA	NA	NA
	Strengthening of Milk Grid	Purchase Milk Plant Machineries, Fund Provided to DUSS & CFF	NA	Better milk price, ↑ association	NA
	Strengthening and expansion of Government poultry farm	Will Produced additional 115000 chicks/annum	NA	Provided 2300 farmers a day old chicks	NA
	Promotion of Kroiler poultry	Provided 2500 farmersa unit of 50 chicks	NA	Improve livelihood, employment generate	NA
2. Marketing and post harvest management	**Construction of agriculture input stores and collection centre**	Distribute Agriculture inputs, ↑ extension & technical knowledge	Work in progress	↑ productivity	Work in progress
	Construction of KarnprayagMandi Yard	Opportunity sale produce at good prices, Farmers benefited	NA	NA	NA
	Construction of farmer consumer market	Marketing support & impetus to horticulturist	NA	NA	NA
	Construction of THAL Mandi Yard	Farmers saving on transportation & other costs	NA	NA	NA
	Construction of NaugaonMandi	Farmers saving on transportation & other costs	NA	NA	NA
3. Horticulture	**Development of aroma clusters**	NA	NA	Introduced Damasak rose, japanes mint intercropping	NA

				with wheat & lemongrass &tejpat as waste land crop	
	Economical strengthening of The BheshajSangh	↑ Cocoon & silk production	NA	NA	NA
	Infrastructure Development Of Horticulture	↑ 2500 ha & 35000 beneficiaries	NA	Improve Storage& training facility	NA
	Seed Distribution Project as a Drought Compensation Plan	Cover 6000 farmers, 2600 ha & production 29000 MT	35000 beneficiary, 60000MT in 2500 ha	vegetable production 60000 MT	↑ vegetable production & farmers income
	Productivity Enhancement In Horticulture	Horticulture in rain fed conditions, developed RWHT for irrigation, creation of storage for medicinal & aromatic plants	Protection from wild animals	Enhancement of farm produce, planting material & seed production	Enhancement of production
	cultivation of medicinal and aromatic plants	Cover 136 ha	NA	NA	NA
	Enhancement in the income of aromatic growers	Beneficiaries 15000 farmers, produce 2000 MT vegetable & spices	NA	NA	NA
	Seed Assistance To Vegetable And Spices Farmers	Construct 18 Mobile team buildings	NA	NA	NA
	National Vegetable Initiative	Protection from wild animals	↑ vegetable production	-do-	Regular supply of vegetable to city
4. Organic farming / bio fertilizer	**Strengthening of Organic vision**	Cover 65,000 ha under organic farming	NA	Will benefit 100000 farmers during this project	NA
	Service providers and cluster based service chain facilitators	Direct marketing of organic produce to exported with minimum 30% price premium	NA	NA	NA
	Support for Organic certification and Marketing	Organic certification to 70,000 ha	NA	NA	NA
	Composting vegetable waste	Available 55 MT organic manure/day	NA	Improved sanitation & savings transportation	NA
5. Micro/minor irrigation	**Maintenance of Khairsain irrigation channel**	Benefit 100 ha	NA	NA	NA
	To make minor irrigation scheme	Making functional to ↑ agriculture production	Cover 4010.72 ha	develop resources available, adequate economic return	1092 nos. repair done
	Construction of rain water harvesting tanks	9 lakh litr Rain water storage	NA	NA	NA

6. Dairy development	**Mini Dairy Scheme**	Induce high yielding animals for ↑ milk production & economic uplift	NA	↑milk procurement by 14.74%	NA
	Strengthening of Dairy Infrastructure	Provide quality milk, ↑ income of milk produce	NA	Improve milk quality & milk product	NA
	Strengthening & revival of primary dairy co-operative society	Organizing & reorganizing of primary milk co-operative societies	NA	Financially sound milk unions, ↑ self employment, Rs. 125.725 Lakh surrender to Director Agriculture	NA
7. Extension	**Construction of farmer-consumer Markets**	Horticulture marketing support,stabilize prices of vegetables, fruits & spices	NA	NA	NA
	Support to KrishakMahotsava	Strengthen Agriculture Extension	NA	1.41 lakh farmer participate & benefited	NA

Source: http://rkvy.nic.in/ as on April, 2013.

HID= Horticulture Infrastructure Development, MTB= Mobile team buildings, TC= transportation Cost, **GI=**Genetic improvement**, DA=** Director Agriculture, **PMCS=** primary milk co- operative societies, SHI= Soil health improvement, **CI=** Cropping intensity, **PCI=** Per capita income.

Appendix Table 5.1: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Output		Outcome	
		Expected	Actual	Expected	Actual
1. Seed	Storage Capacity	7 states	-do-	↑	↑
	Rice seed	↑	↑	↑	↑
	Ground nut Seed	↑	↑	↑	↑
	Seed Production	↑	↑	.79 lakh qntls	↑
	Seed Replacement	↑	↑	↑73%	-do-
	Seed to DAF	1.79 lakh qntls	-do-	income↑	income↑
	Rice Production	NA	NA	157 lakh tonnes	-do-
	Pulses Production	NA	NA	17.87lakhtonnes	-do-
	Maize Production	NA	NA	46.7lakh tonnes	46 lakh tonnes
	Distribution of IVS	7 lakh qntls	-do-	↑	↑
	Crop Productivity	NA	NA	15%	↑
2. Agriculture Mechanization	SRI Promotion	↑	↑	↑	↑
	Rice Harvesters	Distribute	193 no	↑	↑
	Farm implements	79703 no	78,707 no	↑	↑
	RMG Covers	650 farmers	↑	↑	↑
	Cost of Cultivation	↓	↓	↓	↓
	Oilseed Production	↑	↑	↑10%	-do-
	Pulses Production	↑	↑	↑10%	-do-
	Farm Power	NA	NA	3kw/ha	-do-
	Machinery availability	↑	↑	↑	↑
3. Animal Husbandry	Ram Supply	150 lakh no.	-do-	↑	↑
	Sheep	Sustainable	-do-	-do-	↑
	Goat	Sustainable	-do-	-do-	↑
	Cow	1015 lakh no	-do-	↑	↑
	Buffalos	1015 lakh no	-do-	↑	↑
	Animal Mortality	↓	↓	↓	↓
	Milch Animal	5500available	-do-	-do-	↑
	Milk Production	8 litre/animal	-do-	1.25 lakh litre	8 litre/animal
	Meat Production	1kg/animal	-do-	↑	↑
	Fodder Cultivation	83000 acre	↑	23 lakh MT	-do-
	Mini diaries	6000 no	-do-	↑	↑
	Wastage	↓30%	↓	↓	↓
	Beneficiaries	340 lakh no	10000 BPL	35000 farmers	↑
	Diagnostic Service	.8 lakh animal	↑	↑	↑
	Employment	NA	NA	1000	-do-
4. Horticulture	Senile Gardens	4900 ha	↑	↑	↑
	Oil Palm	40000 ha	↑	↑	↑
	Various HC	900 ha	-do-	↑40%	↑10%
	Mango	↑1654 ha,	↑	↑15%	Export 536 MT

	Banana	↑50%, 60 ha	↑50%	↑15%	↑40%
	Guava	208 ha	↑	↑15%	↑
	Papaya	266 ha	↑	↑15%	↑
	Sapota	10 ha	↑	↑15%	↑
	Cashew	1139 ha	↑	↑40%	↑
	Cocoa	1424 ha	↑	↑	↑
	Turmeric	25 ha	↑	↑	↑
	Flower	10 ha	↑	↑	↑
	Mitigate DFA	27000 ha	↑	↑	↑
	HYV vegetable seed	50% subsidy	↑	Productivity ↑	↑
	Pedals	600 acre	↑	↑	↑
	Poly Houses	13 no	↑	↑	↑
	Shade Houses	157 no	↑	↑	↑
	Tomato trellis	1550 acre	↑	↑	↑
	Veg mini kits	305051	↑	↑	↑
	Hybrid Seeds	50000 ha	↑	↑	↑
	PCI of farmers	↑	↑	Rs. 10,000/acre	↑
	Nurseries	8 no.	↑	↑	↑
	Plant material	NA	6.5 lakh no	↑	↑
	Beneficiaries	NA	35941 no.	↑	↑
	Mortality of Seedling	NA	NA	↓50%	↓
	Vegetable seed	NA	NA	Rs.3000/ha	↑
	SRR	NA	NA	↑25%	↑20%
5) Innovative programmes, training, capacity buildings & others	Pulses	↑APY	↑ APY	↑APY	↑APY
	Red Gram	NA	9.58 lakh Tonnes	-do-	-do-
	Green Gram	NA	3.90 lakh tonnes	-do-	-do-
6) Research (agri, horti, animal husbandry)	Food processing centers	Establish	-do-	-do-	-do-
	Lab	5 nos	-do-	-do-	-do-
	Chilling milk equipment	Developed	-do-	-do-	-do-
	PHL of mango	↓	-do-	↓	↓
	PHL of sweet orange	↓	-do-	↓	↓
	PHL of tomato	↓	-do-	↓	↓
	PHL of carrot	↓	-do-	↓	↓
	HYV red gram	↓	-do-	↓	↓
	HYV black gram	↓	-do-	↓	↓
	HYV green gram	↓	-do-	↓	↓
	Pulses	DDT	-do-	↑APY	-do-
	Maize	DDT	-do-	↑APY	-do-
	Ground nut	DDT	-do-	↑APY	-do-
	Castor	DDT	-do-	↑APY	-do-
	Sunflower	DDT	-do-	↑APY	-do-
	Sesamum	DDT	-do-	↑APY	-do-
	Sheep	Research trail	-do-	↑APY	-do-
	Pig	Research trail	-do-	↑APY	-do-
	Cattle	Research trail	-do-	↑APY	-do-
	PHM millets	↑	-do-	↑APY	-do-
	PHM pulses	↑	-do-	↑APY	-do-
	Soil samples	NA	NA	40000 nos	-do-
	Fruit	NA	NA	↑APY	-do-

	Vegetables	NA	NA	↑APY	-do-
	Flowers	NA	NA	↑APY	-do-
	Milk spoilage	NA	NA	↓10%	-do-
	Pig production	NA	NA	↑15%	-do-
	Egg production	NA	NA	↑300000	-do-
	Milk Production	NA	NA	↑50%	-do-
	Meat production	NA	NA	↑50%	-do-
7) Crop Development	Soil health	Improve	-do-	-do-	-do-
	Rain fed crops	NA	NA	↑ 12%	NA
	Paddy	NA	NA	↑2-3 bags/acre	NA
	Irrigation	↑	↑	↑	NA

Source*:* RKVY, 2013;

Note: NA=Not Available, DFA=Drought Affected; Farmers, IVS=Improved Variety Seed, Horticulture Crops, DDT= Drought tolerance resistance, PHL= Post harvest los, PHM=Post harvest management.

Appendix Table 5.2: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Horticulture	Seeds garden	↑	↑	↑	↑
	Trained Manpower	↑	↑	↑	↑
	Nurseries	↑	↑	↑	↑
	Horticulture Seed	↑	↑	↑	↑
2. Innovative programmes/ training/ capacity building/ others	Training programmes	10 no	NA	NA	NA
	Trainees	1500 no	NA	NA	NA
3. Natural resource management	NA	NA	NA	NA	NA
4. Animal husbandry	Milk Production	3 liters/Day	↑	↑	↑
	Calf Born	1200 no. female	↑	↑	↑
	Pig Production	↑	↑	↑	↑
	Poultry	↑	↑	↑	↑
	Fodder Production	↑	↑	↑	↑
5. Dairy development	Fodder grass	100 ha, 40000 animals	↑	280 ha/year 2.3 lakh MT	↑
	Milk Production	↑	↑	↑	↑
6. Seed	NA	NA	NA	NA	NA

Source: RKVY, 2013

Note: NA=Not Available, DFA=Drought Affected Farmers, IVS=Improved Variety Seed, Horticulture Crops, DDT= Drought tolerance resistance, PHL= Post harvest los, PHM=Post harvest management.

Appendix Table 5.3: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Output		Outcome	
		Expected	Actual	Expected	Actual
1. Innovative programmes, training, capacity building & others	Surface drainage water	100 ha	-do-	NA	NA
	Seed production	5.95 lakh quintals	-do-	NA	NA
	Crop production	NA	Increase in productivity	Increase in productivity by 20%	-do-
	Soil test based nutrient	NA	Soil test based nutrient is provided for 1.2 lakh ha	NA	NA
	Beneficiaries	NA	NA	200 no.	NA
2. Agriculture mechanization	Machineries	57364 no.	49096 no.	NA	NA
	Custom hiring centre	600	-do-	NA	NA
	Unemployment	NA	NA	Reduction in unemployment by 30-75%	-do-
3.Horticulture	Potato seed	7000 quintals	-do-	-do-	-do-
	Potato (Area/production)	2000 ha	-do-	Increase in area	Increased area
	Infrastructure	.23lakh ha	-do-	NA	NA
	Lab	5	NA	NA	NA
	Banana (Area/production)	13.35 lakh ha	-do-	.67l akh MT	-do-
	Mulberry (Area/production)	20 ha	-do-	Increase in area & production	-do-
	Mango (Area/production)	↑ area & production	-do-	↑ area & production	-do-
	Beneficiaries	2500 nos	4921 nos	NA	NA
	Cold storage	↑ cold storages	-do-	↑ cold storages	↑ cold storages
4. Animal husbandry	Milk production	↑ Milk production	-do-	↑ Milk production	↑ Milk production
	Meat production	↑ Meat production	-do-	↑ Meat production	↑1200MT
	Egg production	↑ Egg production	-do-	↑ Egg production	3 lakh nos
	Fish production	↑ Fish production	-do-	485MT	↑ Fish production
	Veterinary	176 taluks	-do-	NA	NA
	Fodder production			1lakhMT	↑24lakhMT
	Pig farm	↑ pig farms by 3400	NA	NA	NA
	Poultry farm	↑ poultry farms by 800	-do-		
	Livestock	↑ livestock number	↑ livestock number	↑6lakh nos	↑ livestock number
	Extension offices	Increase no.	NA	NA	NA

		of extension offices by 173			
	Reservoir	↑ command area by 318ha	NA	NA	NA
5. Research-agri, horti, Animal Husbandry etc	Paddy production	↑ paddy production by 20%	-do-		
	Maize production	↑ maize production	-do-	↑ maize production by 2-3%	-do-
	Groundnut production	↑8%	-do-	↑ groundnut production	-do-
	Cocoon production	↑20%	-do-	↑ cocoon production	-do-
	Cotton production	↑ cotton production	-do-	↑ cotton production	-do-
	Sugarcane production	↑ sugarcane production	↑ sugarcane production	↑ sugarcane production	-do-
	Chilly production	↑ chilly production	↑ chilly production	↑ chilly production	-do-
	Inland fish production.	↑ fish production	31ha/2.02lakh MT	↑ fish production	-do-
	New technologies	NA	NA	Introduce new technologies by 50 no.	-do-
	RSK'S & KVK'S	NA	NA	To increase number of RSK'S & KVK'S by 740 & 30	NA
	Soil fertility	↑ Soil fertility	-do-	↑ Soil fertility	-do-
	Irrigation area	↑ Irrigation area	-do-	↑ irrigated area by 8000ha	NA
6. Marketing and PHM	Flower auction center	6 centers	-do-	NA	NA
	Turmeric Market	Improve market infrastructure	-do-	Improve market infrastructure	-do-
	Fruits market	Improve market infrastructure	-do-	Improve market infrastructure	-do-
	Vegetables market	Improve market infrastructure	-do-	Improve market infrastructure	-do-
	Seed storage	to provide seed storage for 0.4lakh quintals	-do-	-do-	-do-
	Godowns	To create godowns to store 0.17 lakh MT	-do-	NA	NA
	Post harvest loss	↓ post harvest loss	-do-	post harvest loss ↓30%	post harvest loss ↓
	Export horticulture	↑ export of horti.	-do-produce	↑ export of horti. produce	-do-

		produce			
	Horticulture produce	↑ horti,. production	-do-	Increased hort1000MT/annum	-do-
7. Seed	Machineries	10000 units	-do-	NA	NA
	Seed production	5.67lakh quintals	-do-	↑	↑17%/14889MT
	Supply of Potato seed	.07lakh quintals	-do-	NA	NA
	Seed storage	NA	NA	1.3lakh quintals	↑.55lakh quintals
	Seed processing	NA	NA	2.15lakh quintals	NA
	Training	NA	NA	NA	36
8. Extension	Shakti group for empowering farmer	2200 nos	-do-	NA	NA
	Enhance knowledge	↑	↑	↑	↑
	Income	↑50%.	-do-	NA	NA
	Export of mango	↑	↑	↑	↑
	Export of grapes	↑	↑	↑	↑
	Export of pomegranate	↑	↑	↑	↑
	Export of plantation crop	↑	↑	↑	↑
9. Crop development	Millet promotion	.58lakh ha	-do-	NA	NA
	Millet productivity	↑	↑	↑	↑
	Crop productivity	NA	NA	↑50%	-do-
	Use of pesticides	↓	↓	↓	↓
	Cost of cultivation reduction	↓	↓	↓	↓
	Farmers income	↑	↑	↑	↑

Source: RKVY, 2013

Note: NA=Not Available, DFA=Drought Affected Farmers, IVS=Improved Variety Seed, Horticulture Crops, DDT= Drought tolerance resistance, PHL= Post harvest los, PHM=Post harvest management

Appendix Table 5.4: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Crop Development	Pea	↑Production	↑	↑	↑
	Green gram	↑Production	↑	↑	↑
	Black gram	↑Production	↑	↑	↑
	Horse gram	↑Production	↑	↑	↑
	Sesamum	600 ha, 400 kg/ha	↑61 tons/Rs.30.52 lakh	↑	305.2 ha
	Paddy	↑8600 ha, 10500 MT	↑5167.6 ha	↑17 mt/ha	↑102MT/ha
	Irrigation	Improve	313 pump sets	↑	325 ha
	Employment opportunity	↑	↑	↑	↑
	Coconut farming	Improve	↑500 ha,90 nuts/palm	↑20%	500ha/875 000 nuts
	Sugarcane	↑APY	↑APY	↑income	↑
	Vegetables	↑APY	500 MT	↑production1%	↑
	Milk production	↑4.5 lakh tons	NA	NA	↑
	Straw	↑9000 MT	NA	↑Rs. 226.50 lakh	↑
	Tuber crop	NA	500 unit	↑production	↑300 tons
	Areca nut	NA	600 ha	NA	↑
	Paddy inputs supply	NA	5000 ha	NA	↑
	Income of farmers	↑	↑	↑	↑
	Banana	NA	NA	NA	240 ha/ 4800 MT
2. Animal Husbandry	Milk Production	30 lakh ton/year	↑	↑5%	-do-
	Milk spoilage	↓	↓	↓	↓
	Pig farming	500 piglets	-do-	-do-	↑
	Goat farming	400 distributed	700 nos	↑	700 nos
	Bufalow	NA	505 added	↑	↑
	Duck farming	6000 ducklings	-do-	3.12 lakh ducklings	↑
	Poultry	5000 poultry club	10000 poultry disrbtd	↑	18 broiler poultry
	Meat production	↑	↑	↑	70000 kilos
	Egg production	300 eager nurseries	-do-	30 lakh egg	-do-
	Rabbit	NA	10000 produced	↑	↑
	Animal Mortality	↓	↓	↓	180000 cows health improve
	fodder production	200acre,300MTcattle feed/day	11400 farmers,↑3 acre	↑	↑
3. Fisheries	Fish production	2 ton/ha	150000 lakh ton	↑	↑
	Perl spot seed	50 lakh ha	NA	↑	↑
	Paddy & Shrimp	300 kg rice & 300 kg shrimp	↑180 ton rice & 60 ton	↑	↑

			shrimp		
	Ornamental fish	↑	30 million/annum	10 lakh	↑
	Fish seed	100 ha	↑12806.635 ha	↑	↑
	Employment opportunity	↑	250 youth	-do	↑
	Inland fish production	↑	↑	↑	↑
	Shrimp	NA	348 ha	↑	3700 ha
4. Horticulture	Banana	1000 ha	Addtnl 600 ha	↑1500 ha	↑Yield 15%
	Cocoa	↑Yield	↑	↑	↑
	Guava	↑APY	↑	↑	↑
	Sapota	↑APY	↑	↑	↑
	Coconut	↑1500 ha	↑	↑	8750 nuts/ha/year
	Palms	220000 nos	↑70%	↑	↑addtnl 20000 nos
	Fruits	↑	↑	↑	↑
	Mushroom	125 tons/annum	↑	↑	↑
	Floriculture	NA	↑	↑	↑
	Vegetables	1900 ha	↑Yield 5%	500ha,20000 T	↑1700 MT
	Organic farming	1000 units	↑	↑	↑
	Infrastructure	↑	↑	↑	↑
	Employment generation	↑	↑	↑	↑
	Training	↑	↑	↑	↑
	Irrigation	100 ha	↑	↑	670.57 ha
5.Agriculture Mechanization	Modern Techniques	Improved	63 ha	↑	↑
	Cost of Cultivation	↓	Saving Rs. 300/ha	↑30%	↑
	Labor cost	↓	↓	↓	↓
	Labor shortage	↓	↓	↓	↓
	Machineries	500 nos	3027 nos	NA	Rs. 15.50 lakh
	Paddy	↑ APY	↑	↑10%	↑5%
	Coconut APY	↑ APY	↑	↑10%	↑5%
	Beneficiaries	NA	2988nos, 800 ha	NA	151 nos.
6. Research (agri, horti, animal husbandry etc)	Poverty alleviation	Removed			
	Coconut development	↑	↑	↑	↑
	Develop flood & salt tolerant varieties crops	↑	↑	↑	↑
	Coconut	52,000 seedlings	70 ha/year	↑	↑
	Livestock	↑	↑	↑	↑
	Rice	↑	↑	↑Yield 30%	↑5060 MT
	Fisheries	↑	10629 ha	↑	↑
	Training	65757 ha	↑	↑	↑
	Bio-fertilizer	2.5 tons	↑	↑	↑
	Cropping intensity	↑	↑	↑	↑

Source: RKVY, 2013; NA=Not Available, DFA=Drought Affected Farmers, IVS=Improved Variety Seed, Horticulture Crops, DDT= Drought tolerance resistance, PHL= Post harvest los, PHM=Post harvest management.

Appendix Table 5.5: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1.Crop development	Rice	4.5-5 MT	-do-	NA	.92 lakh ha (SRI)
	Pulses	462 kg/ha	5381.76 MT	.3 lakh MT/763000 ha	11.21lakh MT
	Red gram	700-100 kg/ha	14135 ha	NA	1000 kg/ha
	Green gram	1000 ha	NA	NA	NA
	Black gram	1000 ha	NA	NA	NA
	Oilseeds	2496kg/ha	2134 ha	NA	2134 ha
	Millets	↑40%	NA	NA	NA
	Mango/ HYV	.04lakh MT/ 500 ha	NA	.2 lakh MT/.03 lakh ha	NA
	Banana/ HYV	.72 lakh MT/900 ha	NA	3.6 lakh MT/4500ha	NA
	Chilies/HYV	.07 lakh MT/ 400 ha	NA	.28 lakh MT/2000 ha	NA
2.Agriculture mechanization	Sugarcane	↑10-15% (yield)	147(machinery)	Rs. 1000/ha	15-20%(yield)
	Rice yield	3.75MT to 4.29MT	NA	NA	3.75MT to 4.29MT
	Machineries	24972	66003/Rs. 25.986 crore	460	167
	Training	NA	100	NA	NA
	Deficit labor	Manage	-do-	-do-	-do-
3. Innovative programmes/ training/ capacity building/ others	sunflower	↑150-200%	NA	↑15-115%	↑18%
	groundnut	↑150-200%	NA	↑15-115%	↑63%
	maize	↑150-200%	NA	↑15-115%	↑65%
	cotton	↑150-200%	NA	↑15-115%	↑50%
	sugarcane	↑150-200%	NA	↑15-115%	↑90%
	garlic	290 MT	NA	651 MT	NA
	Banana	2.38 lakh MT	↑30-50%	7 lakh MT	NA
	Beans	522 MT/484ha	↑30-50%	360 MT	NA
	vegetables	1.84 lakh MT/5185ha	↑30-50%	5.41 lakh MT	↑25%
	carrot	2510 MT	↑30-50%	3130 MT	NA
	Flowers		↑30-50%	NA	NA
	Climate reports	297 blocks	-do-	NA	NA
4.Horticulture	Mango	.06 lakh MT/↑2065ha	NA	.2 lakh MT/2500ha	NA
	Banana	.96 lakh MT/↑2140ha	NA	3.6 lakh MT/4500ha	NA
	Jasmine	.03 lakh MT/↑336ha	↑30%	.24 lakh MT/1650 ha	↑40%
	Flowers	NA	↑30%	NA	↑40%
	Vegetables	↑60-80%	↑30%	-do-	↑40%

	Spices	NA	↑30%/↑.03 lakh ha	NA	↑40%
	Fruits	↑2200 ha	NA	NA	NA
	Cluster dev.	NA	62	-do-	-do-
	Beneficiaries	NA	NA	1985	NA
	Horticulture & Bio-mass	NA	NA	1419.437 ha	-do-
5.Marketing and post harvest management	Markets	167	-do-	-do-	-do-
	post harvest loss	↓	↓	↓5-10%	↓
	Cold storage	2300MT	-do-	NA	NA
	Price of commodity	↑25%	-do-	-do-	-do-
6.Animal husbandry	Milk production	9 lakh litres/annum	43 lakh litre/annum	-do-	↑
	Fodder production	1 to1.5lakh MT	1.25 lakh MT	63.69 ha/annum	↑
	Mortality	↓	↓	↓	↓
	Buffalo calves treated	2000	820	NA	Rs.4.47crore/ annum
	Piglets	2400/annum	NA	NA	↑
	Eggs	8000 /day	NA	NA	↑
	Chick	15.6 lakh nos/annum	NA	NA	↑
	Meat production	↑	↑	↑	↑
7.Dairy development:	Milk product samples	3231	-do-	-do-	-do-
	Milk production	↑	↑	↑	↑
	Trainings	NA	5513	NA	NA
	Milk product spoilage	↓	↓	↓	↓
	Machineries	99	-do-	-do-	-do-

Source: RKVY, 2013

Note: NA=Not Available, DFA=Drought Affected Farmers, IVS=Improved Variety Seed, Horticulture Crops, DDT= Drought tolerance resistance, PHL= Post harvest los, PHM=Post harvest management.

Appendix Table 6.1: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Horticulture	Area Expansion of Fruits Crops	Dev. of orchards in 1057 ha	NA	Will produce apprx. 3456 MT after 5 years	NA
	Vegetable Crop Area Expansion	, ↑vegetable area by 52.28 for the current years	NA	↑ average income of farmers,	NA
	Spices Development Programme	14751 ha spices crops, ↑ area of spices by 95.26 % for the current years, produce additional 93074 MT spices for the current year.	NA	↑ average income of farmers, availability of employment & fruits & maintaining ecological balance by plantation	NA
	Processing units - Post Harvest Management	Reduce Post Harvest loses by 50%, consumers will get fresh & hygienic fruit & vegetable	NA	↑ average income of the farmers by reducing post harvest losses.	NA
	Flowers Area Expansion Program	Cover 1181 ha under flower, ↑ flower area by 5.58% & produce additional 3568 MT flowers for the current year.	NA	↑ average income of the farmers & availability of employment & flowers	NA
	Establishment of Community Orchards	Will 220 ha under fruit orchard, ↑ fruits orchards area 0.66% & produced additional 1880 MT fruits after completion of gestation period.	NA	Will convert fallow land horticultural land, ↑ average income of farmers, availability of employment	NA
	Promotion of Integrated Pest Management	9 PM applied in 25799 ha, reduce use of chemical pesticides	NA	↓ lost of cultivation due to 9 PM practices, ↑ supply of consumable & healthy food	NA
	Support for Post Harvest Management	Distribute 50000 Nos. plastic crates & establish 3 low cost cashew processing units	NA	↓ Post Harvest losses due to safe handling of horticulture produce	NA
	Processing Unit Additional	NA	Give additional income to raw through processing, ↑self life of the product	Will ↑ average income of farmers & availability of employment & processed produce	-do-
	Extension and	technical up-	-do-	Will Publish 1.5	-do-

	Administration	gradation, Organised for awareness of the farmers about modern technology		lakhs (apprx.) leaflets/pamphlets	
	Mechanization in Horticulture of Nurseries	↑ Production capacity of Fruit plants, Vegetable seedlings &vegetable seeds of Model Farm Banana	NA	↓cost of cultivation	NA
	Lab to Land Programme - Dhamtari	Produce good quality planting material in off season & early planting	Provide 3040 Nos. Sabji Kuti farmers & taken off season Plant propagation program	↑ production of fruit & vegetable	-do-
	Establishment of new nurseries	↑ production capacity of 2 lakhs plants & 2.16 lakhs good quality fruit plants/ annum	NA	Producing good quality plant around the year	NA
	Establishment of Fruit & Vegetable processing centre	Developed human resource	71 nos. trainings across the CG	Improve economic status	Technology disseminated for fruit & vegetable processing
	Hybrid Vegetable Seed Production	HYV production in 5 ha	NA	HYV production in 5 ha	NA
	Vegetable Crops Demonstration	Cover 3500 ha under vegetable crops demonstration, ↑ vegetable area by 9.9 % & produce 38592 MT additional vegetable for the current year	NA	Will convert fallow land horticultural land, ↑ average income of farmers, availability of employment &fruits & maintaining ecological balance by plantation	Cover 1454 ha vegetable crops demonstration , ↑ vegetable area by 0.43% & produce 18000 MT additional vegetable for the current year.
	Vegetable Initiative for Urban Clusters	Cover 6696 ha under Vegetable crops expansion, ↑ vegetable crop area by 90%& produce 87048 MT additional vegetable for the current year	NA	Will convert fallow land horticultural land, ↑ average income of farmers, availability of employment	NA
2. Crop development	Purification, Evaluation, Multiplication and Popularization of scented rice	Saving endangered aromatic landraces of rice	Provide genetically pure seed of all the aromatic land races	Distributed purified endangered scented rice land races	NA

	DNA fingerprinting, Bio-prospecting of genes and allele mining of CG germ plasm	Identification of donor rice land races for specific traits - drought, biotic stress & grain nutritive value	NA	NA	NA
	Enhancing Production & Productivity of Wheat	Dissemination of HYV wheat, ↑ production & productivity by 10%	Reached newly released wheat varieties viz. GW366, HI 1544, HI 1531, HD 2932, GW 322 to three agro-climatic zones , ↑ productivity	↑ productivity	NA
3. Animal husbandry	Distribution of graded jamunapari buck	8000 progeny should come by 2 years, ↑ improved breed goat population by 5 % in next census	Recorded 80300 progeny till report done	↑ meat production by 8% by end of 4 year	↑ beneficiary farmers income
	Distribution of breeding bull	↑ 15% natural service by the breeding bulls	Improved breeding service by Natural Insemination	Contribution breed able animals ↑ by 2.5 %	↑ improved breed progeny
	Performance linked incentive to private artificial insemination workers	Inducted more PAIWs & become sustainable, drop out rate ↓ by 50%.	Actual output will be recordable when calves born out of AI conducted by PAIWs	Contribution coverage of breed able animals ↑ by 2.5 %/annual	↓ dropout rate of PAIWs significantly.
	Animal Breed Improvement Program for Cattle and Buffalo	About 250 calves reared to breedable age, ↑ 15% Natural service by the breeding bulls	Improved breeding service by Natural Insemination	Contribution coverage of breed able animals ↑ by 0.25 %/annual	Will be visible of ↑in milk production
	Production and Productivity enhancement of Improved Breed Cattle Buffalo	↑ survivability of calves born	↓ AI born calf mortality by 60%	↑ survivability of calves born	↑ awareness & interest of farmers for AI
	Strengthening of Central Semen Station	Higher semen production	↑ Semen Production increased from 4.40 Lakhs in 2007-08 (base year) to 1.12 Lakhs (2010-11)	AI will ↑ to 1.8 lakhs/ year	↑ AI conducted & calf born
	Promotion and Support to Charwaha for enhancement of	Recognition &trained registered	Facilities of 1.99 Lakhs (AI + Castration)	Improved animal breed & health	↑ in calf born as a result of AI

	AI for Cattle and Buffaloes		cases by Trained		
	Procurement and rearing of bull calf	Grading & procurement of bull calves lead awareness	Breeding services improved by natural Service	75%of villages have easy access by end of 2013	↑ milk production will be visible after the calves produced
	Distribution of Male goats for Breed Improvement	↑ improved beed progeny for goats	Progeny of goats has started coming	↑ income through goat farming	↑ breeding coverage for goats, started improved breed goat progeny & ↑ income of beneficiaries
	Strengthening of Govt. Poultry farm	Distributed about 2.25 lakhs chicks under AHD scheme	Result will be visible by end of 2012	4000 beneficiary families gets the economic benefit	Result will be visible by end of 2013
	Livestock Service Delivery Expansion Project	↓ animal mortality by 60%	Veterinary Institutions have been shifted from their old places & started functioning	↑ average milk production by 15% by the end of 2014	Improved animal health care service delivery
	Azolla and Vermi-compost Production and Demonstration Units	Production of Azolla & vermin-compost in all 17 govt. farms	Regular production of Azolla & vermin-compost in all 17 govt. farms	↑ awareness for azolla, ↑ in production for rural poultry	-do-
	Mass vaccination and deforming in goat population	Zero PPR disease in sheep & goats	↑ goat population	Contribution to ↑ in meat production by 8% by end of 4 year	↑ meat production
	Strengthening of Block Level Cold Chain Infrastructure	Establish 1 no. Ice Lined Freezer for Vaccine storage in 50 Strategic Blocks	Created effective storage facility for storage of live vaccines & biological	↓ mortality, mitigating a loss of about 15 Cr/ year	No. of vaccination done in 2009-10 was 108.44 lakhs which has ↑ 132.05 Lakhs in 2010-11
	State wide PPR disease control program	100% vaccination coverage to all Sheep and Goats in 3 continuous years	Significant ↓ in PPR disease incidence	Estimated economic losses due to PPR is more than 2700 Lakhs/annum	↓ in PPR disease incidence
	Detecting of Animals in Multipurpose Veterinary Health Camps	Undertaken Veterinary Camp	Use foot operated sprayer pumps in more than 1300 veterinary institutions	Contribute production of milk	Improved animal health &productivity
	Equipment and Instruments for	Strengthen veterinary service	Collected sample of soil,	Prepare area specific mineral	Analysed mineral status

	Veterinary Hospitals	delivery	plant & serum	mixture	of soil, plant & serum
	Strengthening of Training Institutions	Enhance net coverage area on HRD issues & maximize output of expertise available	Improved breeding services by Natural Service	↑ awareness & skill development	Will visible increase in milk production
	Exposure cum study tour for farmers	Training & awareness generation for 425 farmers/PAIWs	↑ awareness in participating farmers & neighbouring farmers	Improve Adoption of various Animal Husbandry technologies	Adaptation of improved technologies in progress
	Training Program for Charwaha	Should improve AI technology dissemination	Contribute towards AI technology	Will visible increase in milk production	-do-
	Capacity Building Program	VAS are trained in veterinary surgery & infertility management	190 VAS trained in surgery & infertility management	Reduce loss of productive animals due to surgical complication	↑ skill for VAS
	Extension and Publicity of Government Schemes Pertaining	Awareness regarding livestock & its benefits as income generating activity	Distribute extension materials have been to veterinary institutions	Awareness regarding livestock & its benefits as income generating activity	↑ awareness & technology transfer
	Strengthening of Mahasamund Training Centre	↑ Output in the form	1593 trainees trained	Enhance the net coverage area on HRD issues	↑ awareness & technology transfer
	Fodder Development Program Establishment of Seed and Fodder Production	105 Acres land made suitable for fodder production	Improvement in animal health & breeding status	Contribution to fodder development , 5 target farms	Higher milk production & Propagation of fodder cultivation
	Strengthening of Milk marketing Network	↑ milk procurement by 6 %	↑ milk procurement	Milk handled by the village milk coop.,↑ their contribution by 15%	Contributed to overall performance of RDS
	Service Crate and Essential Equipments	Strengthen veterinary service delivery	Improved animal health care service delivery	Enhancement of the capability of the staff	Improvement in animal health & production
	Establishment of New Govt. Poultry Farm	Farm able to attain target production level of 2.7 lakhs chicks by 1.5 years	NA	poultry eggs & meat production in rural areas ↑ by 10%	NA
4. Fisheries	Balanced & Integrated Supplement Nutritional Requirement	Produce 500 MT fish additionally	-do-	Benefited 500 Fishermen, produce 500 MT additionally	-do-
	Financial assistance for Nets & Boats	To extend coverage of fishing equipment	-do-	Encourage to earn maximum from fishery & benefited 1290 fishermen	-do-

	Strengthening of Fish Seed Hatcheries and Farms	↑ fish seed production	-do-	Will produced additionally 200 Lakh standard fry	-do-
	Construction of Ponds in Farmers Lands	50 ha water area developed	-do-	Permanent self employment to 50 farmers & Produce additionally 150 MT fish	-do-
	Balanced and Complete feed for Fish	Produce 2000 MT fish additionally	-do-	Benefited 2000 fishermen & Produce 2000 MT additional fish	-do-
	Collection of Fingerlings for Increasing Production of Fish Seed in Ponds	Gradually ↑ fish production by stocking of fish seed fingerlings in ponds	-do-	Income of fishermen would be ↑ by 25 % & fish production by 7500 MT	-do-
	Demonstration Units for Increasing Fish Production in Fish Ponds	Permanent self employment to 40 farmers	-do-	↑ fish production & income of each fish farmers to Rs. 1.50 lakh	-do-
	Balanced and Complete Diet for Fish Rearing	Produce additional 1000 MT fish	-do-	Benefited 1000 Fishermen & produce additionally 1000 MT fish	-do-
	Establishment of Circular Hatchery	Produced additionally 200 Lakh fish seed	-do-	Benefited 2000 fishermen & produce additionally 4000 MT fish	-do-
	Establishment of Cold Chain	Provide self employment through fish marketing	-do-	Will get self employment of members of 5 Cooperative Societies	-do-
	Fish seed rearing in seasonal ponds	100 ha unsuitable seasonal ponds would be used for fish seed rearing	95 ha unsuitable seasonal ponds would be used for fish seed rearing	Benefited 200 Fishermen & gets Rs. 75 thousand by sale of fish seed	Benefited 190 Fishermen & gets Rs. 75 thousand by sale of fish seed
	Development of Extension Services	Initiate useful discussion	-do-	To encourage fishermen to earn maximum from fishery	-do-
	Fish Ponds Construction	Additionally developed 40 ha water	-do-	Produce additionally 120 MT fish, Self employment to 40 person	-do-
	Establishment of Circular Hatcheries Complex	Additionally produced 300 lakh fish seed	-do-	benefited 3000 Fishermen &4200 MT additionally fish produced	-do-
	Fish Seed	Additionally	-do-	Beneficiaries 80,	-do-

	Production - Construction of Fish Seed Rearing Area	developed 40 for seed rearing		↑ Rs. 75 thousand for fish seed sale	
	Cold chain for Fish Marketing	To provide self employment through fish marketing to fishermen	-do-	Members of 1 Cooperative Society will get self employment	-do-
	Strengthening of Training and Research Centre	Extend training & research facilities	-do-	Farmers will get benefits to solved their own tank problems	-do-
	Extension & Training	To initiate useful discussion	-do-	Encourage fishermen to earn maximum from fishery	-do-
	Demonstration Tanks	Additionally developed 100 ha	-do-	Additionally produce 300 MT fish, self employment will to 100 person	-do-
	Construction of Farms for Fish Seed Culture	Generate self employment for long term to fishers by constructing 0.5 ha ponds	-do-	85 Farmers income increase to 1.00 lakh & get 2.50 crore fish seed	-do-
	Cage Culture for Increasing Fish Production in Water Bodies	To increased fish production in medium reservoirs up to 200 kg/ha & 100 kg/ha size in large reservoir	-do-	Fish farmer get Rs. 1.50 lakh through cage culture, benefited 125 members	-do-
5. Seed	Strengthening of Seed Processing Center	↑ 3000 MT storage capacity & 6 TPH Processing Capacity	NA	↑ Certified seed production by 133% over previous year	NA
	Strengthening of Seed Corporation	Strengthen 4 Grading machines & 4 mini truck	-do-	↑ 8 TPH Processing capacity & timely storage of seeds	-do-
	Strengthening of Seed Processing Centers	Strengthen 8 Grading machine,17 Godowns,↑storage capacity by 3000 MT, 6 TPH Processing Capacity & developed mechanization & infrastructure of seed farms	↑certified seed production programme by 161% over previous year	↑certified seed production programme by 173 % over previous year	↑ Seed production by 173% over previous year
	Seed Distribution Subsidy	Provided subsidy on distribution of 1.78 lakh qtls. on Paddy & Wheat	↑ Distribution of Paddy & Wheat seed	Subsidy provided @Rs.300/- per qtls. to the seed growers	↑ Seed distribution up to 138% over previous year
	Incentive to Seed	Provided Subsidy	Provided	↑ Seed Production	Produced

	Growers	on Production of paddy & wheat seed (@ 200/- per qtls.) on 6.71 lakh qtls	Production subsidy @200/- per qtls on Paddy & Wheat, encourage & motivate the seed growers	programme by 127% & area by 161% over previous year	approximately 4.50 lakh qtls. of Paddy & Wheat certified Seed , ↑ Seed droduction
	Seed Production Subsidy	Provided Subsidy on Production of paddy & wheat seed @ 200/- per qtls.	-do-	↑Seed production programme by 118%/ha over previous year	-do-
	Distribution Subsidy (Paddy and Wheat)	Subsidy provided @ 300/- per qtls. on paddy & wheat	-do-	↑ seed distribution	↑ availability of certified seed
	Construction of Seed go downs (1500 M.T.)	Construction of 9 godowns each 1500 MT capacity	-do-	↑ Storage capacity by 15000 MT over previous year.	-do-
	Grading Machines to Seed Corporation	Establish 3 Seed Grading Machines in SPU	-do-	↑ Processing capacity by 6 TPH	↑Processing Capacity by 7 TPH
	Strengthening of State Seed Corporation	Strengthen 4 Seed Grading Machines,1 Godown,4 office/Store Infrastructure development in Seed Farms	↑ Certified seed production programme by 176% over previous year	↑Area of seed production programme by 177% over previous year	↑ Certified seed production programme by 177% over previous year
	Strengthening Seed Certification Institution	↑ seed testing facility to 28000 samples/annum	-do-	Creation of seed testing facilities	-do-
	Distribution of Seed Treatment Drums	NA	100% seed treatment in 5000 villages, additional 5 lakh ha area will covered with treated seeds	NA	Crops will be secured from seed & soil born diseases
	Distribution Subsidy (Arhar, Moong, Urad)	provided subsidy @1000/qtls on pulse crop	-do-	↑availability of certified seed at cheaper rate	-do-
	For Infrastructure development of Seed Certification Agency	NA	Construction of extra infrastructure to accelerate the Seed Certification works	NA	Assurance of seed quality, Easy and timely availability of seeds & Promotion of seed production programme
	Distribution Subsidy (Kodo, Ragi)	Provided subsidy @800/qtls on Kodo & Ragi crop	-do-	↑Minor millet seed distribution	↑availability of certified seed at cheaper rate
6. Extension	Establishment of	NA	Completed	NA	Train farmers

	A new Farmers Training Centre		Building construction		on advanced Agriculture technology
	Strengthening for Faculty at SAMETI	NA	Permanent residential facilities for five officials.	NA	Better supervision & protection of SAMETI campus, ↑ working efficiency of staff
	Construction of Farmers hostel at Ramakrishna Mission Ashram	NA	Facilitate hostel having four dormitory, training hall, kitchen etc	NA	Creation of enthusiasm & Up gradation of knowledge
	Development of Farmers' Information & Facilitation Counter	NA	Allotted Rs. 357.00 lakh to construction of PWD/RES/Mandi	NA	Completed 25 Information Centers
	Training to Farmers	Creation of agricultural revolution in 146 blocks of the state	-do-	Skill development & mass awareness on agri. technology	-do-
	Block level Multipurpose Farmer Centers	NA	advanced 990.00 lakh to PWD/RES, started works of 10 BMFC	NA	Spot solution of farmer's problem on Agril. Horti. Agri. Eng. and Fishery, saving of time & efforts etc.
	Progressive Farmers Clubs	NA	1000 farmers club completed	NA	Timely input availability & Reduce production cost
	Push funding of Premium for Weather Based Agriculture Insurance	Coverage 15000 ha paddy crop & 2500 ha Soybean crop	NA	Protection of crop risk from uncertain weather	NA
	Demonstration of SRI	10,000 farmers will be associated in new innovative programme	-do-	↑ productivity by 10-15 of 10,000 demonstration plot	-do-
	Distribution of Arhar Seed Minikits	Certified Arhar seed to 100000 - 200000 farmers	NA	↑ availability of popular edible pulse & inter cropping	NA
	Farmers Field Visit	NA	Trained 960 farmers in 32 farmers field visit	NA	Skill development of farmers
7. Innovative programmes/ training/	Model Agriculture Village Development	NA	16 villages and 16 districts is	NA	Cumulative approach for overall

capacity building/ others	Programme		under progress		developmet
	Plant conservation Medicine/Testing cost	NA	Plant conservation Medicine/Testing cost	NA	Quality Control of PPC
	Shallow tube wells	Completed 1000 shallow tube wells	NA	↑ crop productivity, Economic growth of farmers	NA
	Adarsh Krishi Gram in 10 villages	NA	18 villages & 18 districts is under progress	NA	Cumulative approach to↑ crop production, productivity & irrigation facility
	Grant to Self Help Groups	NA	Support SHG for value addition	NA	Promotion of Small Scale agriculture production centers
	Management and Strengthening of State Bio production lab	Production of bio control agents like trichoderma, NPV, Pseudomonous testing of bio-fertilizer/ bio agents	-do-	Control seed &soil born diseases	-do-
	Strengthening Farmers Training Center	NA	NA	Training to farmers	NA
8. Agriculture Mechanisation	Agricultural Implements Training	NA	NA	NA	↑ awareness & skills associated with agriculture implements of farmers
	Grant to Agriculture Mechanization Service Centre	NA	Grant made	Promotion of Agriculture Mechanization	NA
	Promotion of Improved Farm Machinery	Timely & appropriate agricultural operations	-do-	Value addition to crop produce, market value, Reduce cost of production & increase income of farmers	-do-
	Strengthening of Farm Mechanization Service Centre	Easy timely & cost effective 5000 hrs. farm operations	NA	A new scheme of farm machinery services for poor farmers	NA

Appendix Table 6.2: Major Sector-Wise Expected Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1.Natural resource management	Machineries for Soil and water conservation	1500	NA	150	NA
	Agricultural production	growth yield increased	NA	15	NA
	Restoration of fertility and productivity	growth yield increased	NA	15	NA
	Checking of Salinity	growth yield increased	NA	15	NA
	Increase crop production	growth yield increased	NA	15	NA
	Reclamation of Saline & Alkaline	enhancement of production productivity, employment and income	NA	field bunding-4228,land leveling-1021 h.a, green manuring-900 h.a, farm pond-177	NA
	Reclamation of Ravine Areas	growth yield increased	NA	15	NA
	Agricultural production	growth yield increased	NA	↑ by 25 per cent	NA
	Integrated Watershed Management	growth yield increased	NA	↑ by 10 per cent	NA
	Rainfed area Development	1500	NA	150	NA
	Enhancing water resources	1500	NA	150	NA
2.Agriculture mechanization	Establishment of Testing and Training centre	established well equipped laboratory	NA	Trained 600 trainee -100% farmers	NA
	Popularizing farm mechanization	growth yield increased	NA	15	NA
	Mechanization of Harvesting	cost of cultivating and harvesting will be reduced	NA	-do-	NA
	Awareness about mechanization	Reduce the expenditure, save time, labor & increase the net profit.	NA	Farmers adopted the technology which reduce cost and increase the net profit	NA
	Popularization of farm mechanization	14719 farmers	NA	NA	NA
	Popularization of farm mechanization	7128 farmers	NA	NA	NA
3.Marketing and post harvest management	Cold storages	growth yield increased	NA	15	NA
	Setting up of cold storages	Benefit of farmers, exporters and processors.	NA	Reduction in storage losses	NA
	Cold chain	1500	NA	150	NA
	Post harvest machinery	Improving basic	NA	Providing	NA

		facility for farmers in market yard		cleaning and grading facility	
	Construction of godown	Support seed production and demand of 8000 qtl. per year.	NA	-do-	NA
	Strengthening of existing godowns	Godown Strengthening work is going on	NA	2% increase in production, 4000 qtl. Per annum.	NA
	Setting up of integrated Pack house	500	NA	500	NA
	Strengthening of Agricultural Marketing Board	Improving basic facility for farmers in market yard	NA	93	NA
	Multi commodity Cleaning & Sorting facility	10	NA	Farmers realize better price for better grade.	NA
	Export facility for fruits & vegetables in APMC	3	NA	Provide grading, ripening and cooling facility	NA
	Advance Facilities in APMCs	Reducing contamination in produce brought to the yard	NA	29	NA
	Farmer centric infrastructure and training center in APMCs	263	NA	Improving facility for farmers in market yard	NA
4.Horticulture	Area expansion	Increase sustainability of farm income	NA	-do-	NA
	Development of technologies	Development of package of practices for high valued fruit crops	NA	Standardize the package of practices of a high valued fruit crops	NA
	Value addition	Production of 40000kg seeds of potato	NA	-do-	NA
	Utilization of underutilized arid fruit crops	Training farmers on underutilized arid horti. crops.	NA	-do-	NA
	Providing of vegetable seedling	Supply 3,00,000 seedlings(15 ha.) 6,00,000 seedlings (30 ha.)	NA	Value addition of the flower crops and spice crops is possible	NA
	Development Programme	Increase the farm income	NA	-do-	NA
	Diversification of	Increase the	NA	-do-	NA

	crops with value addition	farm income			
	Establishment of the elite seed farm	Large scale Production of Quality seed Nuts	NA	50,000 hybrid nuts per year will be produced	NA
	Establishment of model nursery	28 clones of Eucalyptus and 02-species as well as 07 clones of Casuarina and 01-species	NA	Good quality planting material made available to farmers	NA
	Popularization of planting materials	Establishment of nursery	NA	Providing the true type seedling	NA
	Implementation of greenhouse	Growing high tech floriculture	NA	Doubling the income	NA
5.Animal husbandry	Strengthening of Artificial insemination	growth yield increased	NA	15	NA
	Installation of A.I.	growth yield increased	NA	15	NA
	Provide travis refrigerator	growth yield increased	NA	15	NA
	Strengthening infrastructure of A.I.	Genetic upgradation of cattle and buffalo	NA	Additional employment is generated	NA
	A.I. network	A.I., veterinary service to the farmers	NA	Breeding efficiency of animals improved	NA
	Cattle development	1500 upgraded kankrej cows	NA	productivity enhancement	NA
	Supply of TREVIS	growth yield increased	NA	15	NA
	Recycling of animal wastes for promoting organic farming	10% growth yield increased	NA	1	NA
	Strengthening of infrastructure	growth yield increased	NA	Increase wool fibre samples	NA
	Analysis of faecal samples of sheep	growth yield increased	NA	Identifying parasitic infestation in gastro-intestinal tract of sheep	NA
	Molecular Techniques to Reduce Economic Losses	Treatment of mastitis through advance molecular techniques	NA	Low cost of production and cheaper treatment.	NA
	Promoting scientific management pregnant dams	170 calving	NA	Calf morbidity and mortality can be minimized	NA
	Strengthening of clinical services	growth yield increased	NA	15	NA
	Appliances for delivery	growth yield		Veterinary	

	of Veterinary Medicines	increased		medicines to be delivered to 16.00 lakhs sheeps every year	
	Modernization of veterinary dispensaries	growth yield increased	NA	15	NA
	Strengthening of Veterinary services	growth yield increased	NA	15	NA
	Animal disease diagnostic laboratory	growth yield increased	NA	15	NA
	Mastitis Control Programme	growth yield increased	NA	15	NA
	Enhancement of Vaccine production	Quality and quantity will increase.	NA	-do-	NA
	Commissioning Satellite Diagnostic Treatment	70000 cattle,20000 buffaloes and 37000 sheep and goats	NA	Improving livelihood of the people	NA
	Mastitis control programme	Reduction in clinical and subclinical mastitis	NA	More return from the animals	NA
	Mass deworming programme for small ruminant	Improve the health of small ruminant	NA	More return from the animals	NA
	Mineral mixture for AI borne calves	Reduction in clinical and subclinical mastitis	NA	More return from the animals	NA
	Prevention of oxidative stress	Timely diagnosis and effective treatment	NA	-do-	NA
	Mechanized chaff cuter	Decrease feed cost of animals	NA	20 village will get more income	NA
	Cattle feed plant	Highly nutritious & chipper cattle feed	NA	Cost of milk production decrease	NA
	Distribution of improved varieties of fodder seeds	Supply of seed to farmers of730 village co-operative society	NA	increase milk production	NA
	Mass Demonstration of a New Fodder Crop	22000 fodder bit seed kit	NA	-do-	NA
	Establishment of Portable Exhibition Unit	exhibition unit at district level	NA	-do-	NA
	Integrated livestock development	21000 cross bred calves	NA	growth yield increased	NA
	Strengthening of livestock breeding	Breeding efficiency of animal improved	NA	-do-	NA

	Establishment of Animal Hostel	Enhance milk production, hygienic condition for animal	NA	-do-	NA
	Assistance for cattle shed	23726 animals health improvement and increase income 11768 for tribal BPL families	NA	Increase milk production	NA
	Pilot project of Animal Hostel	Reduce diseases and increase clean milk production	NA	clean milk production	NA
6.Crop development	Infrastructural Strengthening	Easy accessibility of the quality seed	NA	-do-	NA
	Application of Biotechnology	Establishment of well equipped biotechnology laboratory	NA	Establishment of well equipped biotechnology laboratory	NA
	Enhancement of maize production	1500,FLD-4000,FFS-40	NA	150	NA
	Developing Transgenic Cotton	output will be available when the research experiments are over	NA	benefit cotton growing farmers	NA
	Development of Cotton	Growing cotton in saline area will be demonstrate	NA	Beneficial to the cotton growers of coastal salt effected area	NA
	Sustainable management of wilt	Identify durable and stable resistance varieties	NA	-do-	NA
	Technology Package Demonstration	Increase seed replacement ratio	NA	Increase in production of gram	NA
	Industrial Enhancement of Cluster bean	Disease resistant varieties of cluster bean	NA	-do-	NA
	Maximization of Crop productivity in saline and water logged area	Improvement in soil fertility & productivity	NA	Yield improvement in problematic soil	NA
	Enhancing productivity of rice	Transfer of rice technology through FLDs	NA	Large scale field demonstrations	NA
	popularization of SRI technology	Increase in production of transplanted rice	NA	202 demonstration on farmers field yield increases 5-	NA

				50% over the existing cultivation practice	
	Enhancement of paddy production	Provide new agro. technology of rice through demonstration	NA	-do-	NA
	Pilot project for enhancing sugarcane productivity	Sugarcane production increase by 25000 tons	NA	15% increase	NA
	Infrastructural Strengthening	growth yield increased	NA	15	NA
7.Dairy development	Integrated dairy development project	Improved practices of milk animal rearing	NA	Sufficient employment of beneficiaries	NA
	Supply of clean milk production Kits	154750 tribal BPLs	NA	Increase the milk production	NA
	Installation of Bulk milk cooler	More return from the animals	NA	More return due to clean milk production	NA
	Clean milk production	Reduce scarcity of green fodder	NA	increase milk production	NA
	Dairy Development project	Increase in income of tribal poor family	NA	-do-	NA
	Milk Chilling Center	Improve milk production and social status	NA	Better price for the milk	NA
8.Innovative programmes/ training/ capacity building/ others	Newer approaches in surgical treatment of Animals	Surgery of milk flow disorders reducing incidence of mastitis	NA	Laparoscopic teat surgery will mitigate the disorder	NA
	Excellence for Agro-meteorological Services	Installing the observatory at 16 diff. center	NA	-do-	NA
	Holistic Development	Increase in yield about 15 per cent	NA	Rise socio-economic condition of farmers.	NA
	Agriculture diversification	yield production of 12-14 quintal per acre.	NA	Double the income of beneficiary	NA
	Smart Farming for increasing agricultural production	Reclamation of sodic Soil in 20 ha coastal area	NA	Monitoring and precisely managing soil and water	NA
	Development of Modules for Precision Dairy Farming	Development of modules for different components of precision dairy farming	NA	-do-	NA

	Biotechnological approach	identify relevant markers to be used for selection purpose	NA	Identifying markers related with better milk production ability.	NA
	Diversified Agriculture	4500 families cultivating vegetables	NA	Doubling the income of tribal farmers	NA
	SUNSHINE-II for diversified agriculture	14-15 quintal average yield per acre	NA	Income doubling	NA
	Sustainable Agricultural Development	Creating rural entrepreneurship	NA	-do-	NA
	Development of Agro Forestry	Plantation 20.00 lakhs ha	NA	-do-	NA
	Development of integrated farming system	Farm income increase by 30 % due to multiple enterprises.	NA	Integration of farm enterprises full utilization of resources	NA

Source: **www.rkvy.nic**.in as on April, 2013

Appendix Table 6.3: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. micro/minor irrigation (50.05% NA)	**Distribution of D &EP**	12000 nos.	12980	-do-	-do-
	Subsidy on sprinkler	6666 farmers	-do-	↑ Irrigation potentiality by 6000 ha	-do-
	Ground water recharge	PT 147 & Micro Minor Tank 56	-do-	Potential Create By PT-882 ha and By MIT -2105 ha	-do-
	Percolation tank	238 nos.	NA	1428 ha	NA
	Micro minor tank	268 nos.	-do-	Potential Created By MIT - 8548 ha	-do-
	Pipe line	3333 nos.	NA	↑Irrigation potentiality By 14000 ha	NA
	Drip irrigation	4000 nos.	NA	↑Irrigation potentiality By 14000 ha	NA
	GWR	288 ha	NA	3059 ha	NA
	Tube wells	25667 nos.	↑	↑	↑
	Irrigated area	↑	↑	↑	↑
2. seed (50.94% NA)	**Seed treatment**	3500000 ha	3263036 ha	3229746 ha ↑germination % as well as disease / pest resistance resulted in ↑ productivity.	3263036 ha ↑germination % as well as disease / pest resistance resulted in ↑ productivity
	Hybrid maize seed	2, 28,844 qtls.	-do-	Expected incremental production by 49.44 qtls./ha	Achieved Incremental productivity of 22.79 qt/ha
	Seed production	320000 qtls.	420000qt	2% SRR Increased	-do-
	Seed distribution	316666 qttls.	-do-	2% SRR Increased	-do-
	HYV Seed distribution	211000 qtls	↑	↑	↑
	Incentive paddy & pulses	200000 qtls	NA	3% SRR Increased	2% SRR Increased ↑
	Soyabean	↑	↑	↑	↑
	Infrastructure facility	↑	-do-	↑ 592.20 qt	-do-
3. animal husbandry (95.35% NA)	**Training institute**	Enhancing the net coverage area on HRD issues & max output of	NA	Enhancing the net coverage area on HRD issues & max output of Expertise available	NA

		Expertise available			
	Veterinary hospitals	↑ in no. of small ruminants by 10% over next 5 yrs in the project area	Stage of construction	↑ in no. of small ruminants by 10% over next 5 yrs in the project area	Cure animals
	Animal Mortality	↓ by 60% in animal mortality	In various stages of construction	↓ by 60% in animal mortality	Help people in cure of animals
	Conception rate	↑10% in conception rate	NA	↑ Breed up gradation & ↑ milk production	NA
	Technical skills	↑Tech Skills of Veterinary Professionals	NA	↑Tech Skills of Veterinary Professionals	NA
	Diagnostic facility	advanced	NA	↑milk , Meat & Wool production	NA
	Milk production	NA	NA	↑	NA
	Meat production	NA	NA	↑	↑
	Wool Production	NA	NA	↑	↑
4. agriculture mechanization (82% NA)	**Land deep plough**	66000 ha	67776 ha. Land Farmers benefited	Farmers motivated	agriculture activities carried out in 67776 ha
	CHC in pulses	1.5 lakh ha	NA	Farmers motivated	NA
	D&CH	2000 ha/annum	NA	Farmers motivated	NA
	Grader & treating drum	20000 qtls.	↑	↑	↑
5. crop development (45.45% NA)	**FD**	133332 ha	NA	133332 farmer benefited	NA
	FFS	10000 ha	Awareness for Farmers	10000 farmer benefited	Transfer Tech
	RAD	12000 ha	6300 ha covered	↑5% in yield	↑5% in yield expected
	Crop insurance	45000 ha	NA	Facilitate farmers to get correct info	NA
	Pulses	↑102000 ha	NA	131000 Farmers Benefited	NA
	PHWCPF	Estimation	NA	area 1116000ha, prod 2405000tones	NA
	Irrigation capacity	↑4500 ha	↑	↑	↑
	Training	10700 nos.	↑	↑	↑
	Awareness campaign	46 lakhs	↑	↑	↑
	Processing unit	20 nos.	↑	↑	↑
6. Extension (56.52% NA)	**Go down capacity**	↑ Go down capacity	NA	30,000 tonnes	NA
	CHBO	28 blocks	NA	Construction of good infra facility	NA
	FD	20000 ha	18327 ha	20000 farmer benefited	18327 farmer benefited

	Kisan call centers	4 nos.	NA	4 nos.	NA
	SIAET	1 no.	NA	NA↑	NA↑
	AET	42750 farmer/annum	NA	NA	NA
	FFS	394 ha	346 Farm Field School	500 Ha	8650 Farmers Benefited
	STF	8448 nos.	-do-	-do-	-do-
	Farmers potentially	↑2000 nos.	-do-	-do-	-do-
7. horticulture (51.52% NA)	**MSO**	830 acre	NA	↑ twice	NA
	Betel-vine cultivation	4498 acre	-do-	4498 farmers increased	-do-
	Drip irrigation	90 acre	↑	↑	↑
	Banana devt.	76.53 ha	NA	76.53 ha	NA
	Nursery dvt.	18 nos.	-do-	Improved	-do-
	Farmers training	2000 nos.	-do-	-do-	-do-
	Study tour	162 farmers	162 study tour	162 Farmers	-do-
	Improver nursery	25 nos.	-do-	Potentiality ↑ by 25	-do-
	HYV seed distribution	5263 qtls.	-do-	5263 farmer benefited	-do-
	ROO	584acre	-do-	↑584 potentially	-do-

Source: RKVY, 2013

Note: NA=Project Information Not Available, D&EP= Diesel & Electric Pump, GWR= Ground Water Recharge, CHC= Custom Hiring Centers, D&CH= Demonstration and Custom Hiring, FD= Field Demonstration, FFS= Farm Field School, RAD =Rainfed Area Development, PHWCPF= Pre- Harvest Wheat Crop Production Forecasting, CHBO= Capacity Enhancement of Block Offices, SIAET= State Institute of Agri. Extension & Training, AET= Agri Extension & Training, STF= Study Tours of Farmers, MSO =Multi Storey Orchard, ROO =Rejuvenation of Old Orchards, PT = Percolation Tank, Tech= Technology, Info= Information

Appendix Table 6.4: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1) Micro/Minor Irrigation	Integrated Development of Pulses Villages in Rainfed Areas Under RKVY	To improve the irrigation source to increase the productivity of Pulses and Post harvesting processing and value addition.	Inputs are supplied to 13648 ha area.	To improve the irrigation source to increase the productivity of Pulses and Post harvesting processing and value addition.	Supply of inputs helps to increase the productivity of the pulses
	Initiative for Nutritional Security through Intensive Millet Promotion	To increase the productivity of Millets Post harvesting processing and value addition and to increase the farmers' income.	28910 Demonstrations,67 T.A. Appointments 150 Trainings with 28910 ha area covered	To increase the productivity of Millets Post harvesting processing and value addition and to increase the farmers' income	28910 Farmers are benefited
	Repairs of water Bodies (Rice field)	providing life saving irrigations.	783 bodies are repaired / renovated	4522 Bodies will give the Protective irrigation at critical stages	1175 ha area comes under protective irrigation
	Completion of ongoing Minor Irrigation Schemes	3665	Completion of 127 ongoing projects	NA	3665 ha irrigation is created
	Repair of field Bodies	NA	1807 bodies are repaired / renovated	It opens the potential for collecting the run off water	2710 ha area
	Cement Nala Bandh (Check Dam)	646 Bunds will give Protective Irrigation for around 3000 ha. Paddy area Jalakund will help to irrigate 2083 ha Mango and Cashew nut Plantation during summer season	493 Cement nala band & 247 Diversion band constructed in Konkan	Increase in productivity of crops upto 20 to 30 %.,Additional area comes under cultivation, Increase in Ground water table level	Cement Nala band is ground recharge structure & Due 247 diversion band area of 2717 ha got benefited
	Farm pond	21500 Farm ponds	21876 farm ponds	Increase in productivity of crops upto 20 to 30 %.,Additional area comes under cultivation,Increase in Ground water table level	26251 ha area
	Repair of Malgujari Tanks	531 Ex Malgujari tank 912 ha.	566 Malgujari Tanks are repaired	757 Ex-Malgujari Tanks are repair from which 8530 hector irrigation area are restored.	6511 ha Irrigation restored
	Water Resource Development project-Construction of Check	Harvesting of rainwater in Check Dam thereby, increase irrigation	Construction of 123 Check Dams	Increase in irrigation facility to approx. 3,000 ha. area.	NA

	Dams				
	Shallow Tube wells	174 Tube wells.	18 Shallow Tube wells are completed	870 ha. Irrigation will be created	74 ha Irrigation created
	Micro Irrigation	Area under micro irrigation will be increase by 43836 ha	1,33,090 sets of Drip & Sprinkler provided	Area under micro irrigation will be increase by 105435 ha. Area under Micro Irrigation will be increased, Saving of 35-40 % of water, Increase in yield by 30-40 %	1,22,672 ha area comes under Sprinkler & Drip irrigation
2) Horticulture	Special Programme on Oil Palm Area Expansion (OPAE)	Area expansion of 200 ha.	125 ha. area Cultivation	It helps to increase the production of edible oil.	NA
	Establishment of fruits and vegetable processing laboratory at Amarawati	To Trained and Encourage farmers, farm women and Rural Youth	50 farmers will be trained/ year (6 Month Training)	This project is innovative and creates opportunity for farm women, rural youth and SHG.	Trained farmer wiil get additional income from processed food.
	Residue monitoring in Grapes, Pomegranate and Vegetables through traceability Net	To promote and support grape/ pomegranate& Vegetables growers for export	Online registration , inspection /Residue testing/Training/Certification/Documentation	Residue monitoring Plan for giving assurance to European Union regarding pesticide residue for export of grapes / pomegranate & Vegetable	Residue monitoring Plan for giving assurance to European Union regarding pesticide residue for export of grapes / pomegranate & Vegetable
	Project On Vegetable Initiatives For Urban Cluster- Mumbai	Area under hi-tech cultivation of vegetables, Post-harvest infrastructure , Marketing infrastructure	Training to 3000 Farmers,85 PHM,1500 ha veg. Cultivation, 600 IPM/INM, 100 ha	Increase in vegetable production & productivity, Strengthening of vegetable supply chain, Assured supply of vegetables to Mumbai	NA
3) Crop Development	Integrated Development of 60,000 Pulses Villages	To improve the irrigation source. To increase the productivity of Pulses . Post harvesting processing and value addition. To increase the farmers' income.	Inputs are supplied to 13648 ha area .	To improve the irrigation source.. To increase the productivity of Pulses Post harvesting processing and value addition. To increase the Farmers' income.	Supply of inputs helps to increase the productivity of the pulses
	Initiative for Nutritional Security through Intensive Millet	To increase the productivity of Millets Post harvesting processing	28910 Demonstrations,67 T.A. Appointments 150 Trainings with 28910 ha area covered under project.	To increase the productivity of Millets. Post harvesting processing and value	28910 Farmers are benefited

	Promotion	and value addition. To increase the farmers' income.		addition. To increase the farmers' income.	
4) Marketing and Post Harvest Management	Onion Storage Structure	2.33Lakh M.T. Onion storage capacity increased and 4610 farmer benefited	2,39478 M.T, Onion storage Capacity created	2.33Lakh M.T. Onion storage capacity increased	10628 Farmers are covered
	Commercial Pre-cooling, Cold Storage And Pack House For Pomegranate And Grape at Atpadi, Dist. Sangli	The Pre-cooling and Cold Storage facilities will be available to the pomegranate & grape growers	Construction of Modern marketing facilities for fruits & vegetable	The Pre-cooling and Cold Storage facilities will be available to the pomegranate & grape growers	NA
	Pre-cooling, Ripening and Cold Storage Facility at Indapur and Yaval for Banana	The Pre-cooling and Cold Storage facilities will be available	Construction of Precooling cold storage facilities for fruits & vegetable	The Pre-cooling and Cold Storage facilities will be available to the banana growers	NA
	Commercial Pre-cooling, Cold Storage And Pack House For Kesar Mango and Other Agricultural Produce at Beed	The Pre-cooling and Cold Storage facilities will be available to the fruit and vegetable growers	Construction of Modern marketing facilities for fruits & vegetable	The Pre-cooling and Cold Storage facilities will be available to the fruit and vegetable growers	NA
	Improving PACS Godowns for Accreditation	1000 PACS Godowns to be repaired.	805 Godowns are repaired.	1000 PACS Godowns will be repaired. And 1,67,400 M.T. storage will be increased.	805 Godowns are repaired and 167400 M. T. capacity is restore
	Export Facility Center for Onion, Pomegranate and Grape at Kalwan, Dist Nashik	The Pre-cooling and Cold Storage facilities will be available to the pomegranate & grape growers,	2043 sq. meter construction work, 5 mt. precooling & 50 mt. cold storage unit	The Pre-cooling and Cold Storage facilities will be available to the pomegranate & grape growers	NA
	Irradiation and Allied Facility for Mango and Other Agro Products at Vashi, New Mumbai	It will enable to export mango to USA. The Pre-cooling and Cold Storage facilities will be available to the fruit and vegetable growers	Construction of Modern marketing facilities for fruits & vegetable	It will enable to export mango to USA. The Pre-cooling and Cold Storage facilities will be available to the fruit and vegetable growers	NA

	Flowers Export Facility project	Establishment of 4 Collection Centers. Establishment of 4 Scientific Transportation system	Construction of Modern marketing facilities for fruits & vegetable	To create infrastructural facilities/ collection centers for scientific Post Harvest Management. To provide logistics	NA
	To provide Modern Marketing facility For Fruits And Vegetables	Establish centre of Modern Marketing facility For Fruits And Vegetables in all district of Maharashtra state.	Construction Work	To minimize post harvest losses .To establish common service centers in the vicinity of Collection cum Distribution Center.To develop collection cum distribution centers.	NA
	Plastic crates subsidy scheme under RKVY Scheme	Due to reduction in post harvest losses farmers can get 10 to 20 % additional income	557 Farmers purchased 31700 plastic crates.	Reduces the post harvest losses of perishable horticultural commodities in harvesting, handling, packaging & transportation.	NA
	Establishment of online trading facilities for 128 MSWC warehousing centres.	Increasing per capita income of farmer by reducing involvement of intermediaries / middlemen in marketing network.2) Accessibility to Farmers for National Market through NCDX / commodity spot.	Consultancy for proper implementation of project	Increasing per capita income of farmer by reducing involvement of intermediaries/middlemen in marketing network. Quality Material Supply to Domestic and Export Market. Through Access to National Market farmers gets competitive prices for their foodgrains	NA
	Cluster based MSWC project for Establishment of centralized ERP system	Establishment of centralized ERP system	Consultancy for proper implementation of project & ERP accommodate.	Increasing per capita income of farmer by reducing involvement of intermediaries. Centralized ERP system would help in proper management of godown storage capacity and monitoring the area wise production of various agricultural produce	NA
5)Animal husbandry	Improving A.I Delivery system	Increased coverage of A.I programme leading to birth of 19.84 lakh additional calves	Purchase of infrastructure for A.I.work	Increase in milk production from 69.78 lakh MT to 85 lakh MT.	NA

	Breed Village scheme for sheep & goat	Breed Village scheme for sheep & goat	Publicity, Propaganda , Supply of medicines to 3024n	Increase in sheep and goat meat production from 2.43 lakh MT to 3.24 lakh MT	NA
	Conservation of Elite Buffalo Germ plasm in and around Mumbai Region	Semen of 10 elite buffalo bull will be available for breeding purpose ,generation of 4000 female buffaloes in and around Mumbai city and Suburban area	Procurement of buffalo calves, creation of 200 buffaloes database	A pilot project aimed in the direction of Conservation of elite buffalo germ plasm and expected to be replicated on larger scale in other parts of the state	Semen of 10 elite bulls will be available for breeding purpose which will help in achiving 4 % growth rate in milk production
	Buffalo Development	5000 elite, genetically superior, male and female calves will be born	10 murrah breeding bulls have been procured for breeding purpose.	Accommodate community based approach of breed development	Genetically superior elite 5000 male and female buffalo calves will be available for breeding purpose
	Strengthening of Breeding Bull Production Programme	1. Supply of 45 pedigreed bulls to frozen semen laboratory. 2. Supply of 62 bulls for natural service. 3.Production and distribution of 35 lac fodder crops and fodder seed	Strengthening the infrastructures at 4 Bull Mother Farms for enhanced production of Bull calves & Fodder	More number of high pedigreed breeding bulls will be available for A.I. and Natural Service, Genetic up-gradation of the livestock thereby improving milk productivity and increasing household income of rural masses and Good quality Fodder seed	NA
	Production of Improved Breeds of Sheep & Goats	Strengthening of infrastructure at 3 farms will lead to Increased carrying capacity of foundation stock at farms and Increase in fodder production capacity of farms	Strengthening of the Farms owned by Sheep & Goat Development Corporation is underway	Quality rams & bucks will be available for up gradation of local sheep & goats, thereby increasing the meat production. And Improvement in financial & social status of sheep & goat breeders.	NA
	Socio-economic Up-liftment of Down Trodden Community through Pig farming & Cross Breeding of Native Pigs	A modern piggery farm, a well equipped Chilled Semen Centre for Pig semen and an advanced Farmers training centre will be established at KNP College of Veterinary Science, Shirval, Dist.	Construction of pig farm shed is completed, 12 farmers were trained	It will make available the scientific knowledge of modern Pig farming with optimum utilization of resources to farmers	NA

		Satara.			
	Goat Development Scheme under (NMPS)	Direct self-employment to 139 persons of BPL/SC/ST category	Establishment of 139 Goat unit	A project for goat development will create awareness amongst the targeted beneficiaries to take up goat rearing activity as a useful and economically	NA
	Strengthening/ Modernization of Regional Disease Investigation Laboratories	It will help in preventing economical losses to livestock and poultry owners with adoption of advanced and timely disease diagnostic services and Timely diagnosis	Construction works & Instruments have been provided for 7 RDIL(Regional Diagnostic labs)	The Regional Disease Investigation Laboratories will function more efficiently and will be able to process large number of samples in relatively short period. , Advanced diagnostic facilities will be available at the regional level itself. And Effective	NA
	Strengthening and Modernization of Viral Vaccine Laboratories of Institute of Veterinary Biological Products, Aundh, Pune	Constructional changes & installation of equipments as per FDA & GMP norms will be done.	Strengthening of Viral vaccine production Lab at Aundh Pune-7	Protection from major viral diseases ,The state will establish a centre of excellence in vaccine Production, Research and Development	NA
	Strengthening and Modernization of Poultry Vaccine production Laboratory of Institute of Veterinary Biological Products, Aundh, Pune	Minor constructional changes & of instruments / equipments in order to comply requirements of FDA & GMP and start the poultry vaccine production.	Upgradation of vaccine production lab	The state will establish a centre of excellence in vaccine Production, Research and Development , renovated FDA/GMP compliant vaccine unit will give a new definition to the vaccine production technology in government sector	NA
	Improvement of Diagnostic Skill and Surgical Art of field Veterinarians	One Laparoscopy unit for accurate & rapid diagnosis & treatment of animals and one Laparoscopy training unit for field	Laparoscopy unit established	Improvement in diagnostic & surgical skills of veterinarians will prevent losses of production due to ailments of animals.	NA

		veterinarians and one Laparoscopy training unit for field veterinarians will be established at Bombay Veterinary College			
	Rapid Disease Diagnostic Centre For Small Ruminants	A Rapid Molecular diagnostic centre will be established at College of Veterinary Science, Udgir..	Rapid disease diagnosis of small ruminants and short term refresher courses for field veterinaries started	Rapid Confirmatory Diagnosis of various diseases will be performed within 10 mins to 24 hrs and The livestock owners & the field veterinarians will be benefited with the early diagnostic alarm & will be able to treat their valuable animals at early stage	NA
	Preservation and Enrichment of Fodder & Vegetable Waste	Availability of cost-effective animal feed from agro-sources that are otherwise wasted	Development of 5 Semi-mechanized anaerobic acidification units. 1500 tones silage produced	In consideration of shortage of fodder, the technology evolved through this scheme will make utilization of waste material as well as low quality roughage to be used as cattle feed/fodder	NA
	Grassland Development	1. Improvement of grassland 2) Production of cheaper and good quality biomass 3) Establishment of fodder bank/Depot 4) Training facility for farmers.	Fodder demonstration unit – 1 and training centre established	1.Farmers in the region will be trained about different high yielding varieties of fodder crops & their cultivation methods. 2. This will help in overcoming fodder shortage. 3.Utilization of waste land for cultivation & development of grassland	NA
	Accelerated Fodder Development Programme (AFDP)	Enhancement in Production & productivity of the forage crops, for the development dairy industry for inclusive growth in Rural Maharashtra.	102 project (490 ha/ project) is covered under the project	increase in production of forage crop, waste land development, employment generation in dairy industry, milk availability in rural area.	Supply of inputs will help to increase the fodder production
	Establishment of small ruminant market yards	A new facility of 10 market yards for small	Works of establishment & strengthening of 5 market yards	The system will help to get remunerative price to the	NA

		ruminants will be established.		farmers due to trading on live weight basis	
	Strengthening / Modernization of the Department of Surgery and Radiology	Department of Surgery & Radiology at Udgir Vet college will be strengthened in terms of construction of operation theater & provision of equipment etc and About 5000 field vets & students will be trained in surgery	Training to 100 field veterinarian and 30 students, procurements of 11 equipments	Qualitative enhancement in service to livestock leading to better returns to farmers.	NA
	Establishment of Cytogenetic investigation laboratory	Karyotyping of 400-500 cattle and buffalo bulls for Genetic disorders analysis of 100 HF/HF cross bulls and The association of defective males will be made with phenotypic effects in progeny , if used for breeding.	Cytogenetic investigation laboratory has been established	The cytogenetic investigation laboratory will be established which will serve regularly to provide services of genetic testing to the livestock of MS in future, for genetic disorders viz. BLAD, Citrullenemia and DUMPs	NA
	Building Infrastructure for Cattle Market-APMC at Palghar.	The cattle market will be convenient to the farmers & cattle purchasers. Various high pedigree breeds will be available at one place	cattle market construction	The cattle market will be convenient to the farmers & cattle purchasers. Various high pedigree breeds will be available at one place which will be helpful to the farmers for selection.	The cattle market will be convenient to the farmers & cattle purchasers.
	Establishment of “Turkey Farming Training Centre”	Training facility will be established for the interested turkey farmers, 300 farmers will be trained in Turkey farming as an upcoming alternative business and 300 farmers will actually be trained in Turkey farming.	Analytical lab equipment, dressing plant and models and charts for demonstration were procured	It will encourage farmers to enter into turkey farming ,It will popularize turkey farming activity ,It will help in economic upliftment of small and marginal farmers through turkey farming and Training will initiate turkey farming as subsidiary to agri	NA
	Supply of Mini Hatchery Units to Self help groups	Supply of 300 Mini Hatchery Units of 400 hatching eggs capacity	274 Mini Hatching Units to SHGs	enhance the availability of 0.90 lakhs DOCs /year at the doorsteps of poultry farmers	274 Mini Hatching Units to SHGs
6)Agriculture	Special initiative for	In-situ soil moisture	NA	Increase in productivity of	Implements are being

Mechanization	Pulses and Oil seeds in dry land areas	conservation in Vis- a- Vis increase in productivity of oil seed and pulses in Maharashtra State.		oilseed and Pulses by way of Conservation of moisture in-situ. in-situ.	supplied to groups for providing custom hiring services to nearby villages
	Establishment of Farm Machinery Testing, Training and centre PDKV	To test agriculture machinery except tractor, power tiller and electric motor as per B.I. S. code.	57 equipments required for testing, production and testing have been purchased so far	Due to testing centre following outcome will be there, And Based on performance report, continuous improvement in the products of manufacturers.	NA
	Mechanization of harvesting in sugar cane	Labour problems can be minimize.	Subsidy to 87 sugarcane harvester	Labour problems can be minimizing.	5,50 Lakh Metric Tonnes sugar is harvested by harverster.
	Promotion of Agriculture Mechanization for Individual Farmer	50000 Hectare Area will be covered	Supply of farm Implements to 4000 individual farmer	To perform timely field operation.Encourage farm mechanization Increase production and productivity of crops	Supply of farm Implements to 4000 individual farmer
	Agriculture Mechanization	NA	Supply of 351Rotavetor,1216Power Tiller,10093Plant protection Equipments &10448 Other Implements	NA	Implements are supplied on subsidy to individual farmers to farm mechanization

Source: http://rkvy.nic.in/ as on April, 2013

Appendix Table 6.5: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1)Micro/ Minor Irrigation	Diggies/Plastic lined diggies in canal command area.	5000 Diggies/Plastic lined diggies in canal command areas.	NA	Water resource management and irrigated water effective used.	NA
	Non-conventional energy source (solar power) for efficient use of water through drip in diggi in ganganagar district	Establishment of Solar pumps at Govt/Universities fields so that drip Irrigation System could be used with solar energy.	NA	With the establishment of these 14 pumps, drip systems are running without electricity,farmers of the surrounding will be motivated to establish solar energy pumps to runs drip Irrigation system.	NA
	Farm pond (Khet talai)	To consructed water storage tank at farmer field	NA	1635 Farm ponds constructed	NA
	Construction of 100 community farm ponds on farmers field	100 nos. of water harvesting structure have been created to collect the rain fall runoff water.	NA	The farmer who constructed water harvesting structure are collecting rain fall runoff water and using it.	NA
	Jal hauz (water storage tank) in Bikaner	To construct 200 Water storage tank	200 water Storage tank constructed.	Ensured timely irrigation and ease operation of sprinkler system.	10% yeild Increase.
	Water storage Tanks (pucca) (40x30x6 ft)	To construct Water Storage Tank of atleast 2 lac litre capacity.	780 water Storage Tank constructed.	2800 hac area irrigated.	Increased Irrigated area.each water storage tank capacity atleast 2 lac ltr.
	Minor irrigation schemes,	Providing irrigation facilities in 2,71,185 ha command area, thereby	921 ha area has been provided	Increase in irrigation facilities,	Increased crop production by

	Water Resources Department.	increasing.		improved economic condition	irrigation facility.
	To study the impact of emerging irrigation technology for organic seed production of legumes and arid fruits at Organic farm Khairwadi (ARS Durgapura)	Technology for MIS in Poly house technology and its economic physibility.	NA	Improvement in the availability of Organic Seed. Increase in average yield.	NA
	Laying of main and sub main pipeline for Sprinkler irrigation under Narmada Nahar project	Providing irrigation facilities by Laying of Main and Sub main pipeline for Sprinkler irrigation.	NA	Increase in irrigation facilities,improved economic condition.	NA
	A group demonstration of Vegetables suitable for Baran district,with& without drip & micro sprinkler System in KVK project area.	50 farmers from selected farmer user group will be identified trained at KVK as well as they will be exposed through an inter state tour cum training programme.	NA	Demo at farmers field with drip micro sprinkler system no of farmers 20 @ 1 hac each farmers =20 hac.	NA
2)Horticulture	Area expansion of Jojoba in Bikaner district	To double the cultivated area of Jojoba	NA	11 ha. Jojoba planted	NA
	Solar water pumping units on diggies /WHS during 2011-12	500 Solar water pumping for 2011-12	Solar Water Pumping unit established.	No fuel cost.Long operating life.Saving of electricity.	NA
	Integrated Vegetable production programme in Tribal area	To achieve sustainable improvement in the living standards of the rural poors through vegetable production	NA	To achieve sustainable improvement in the living standards of the rural poors through vegetable	NA

				production	
	Date palm cultivation in western Rajasthan & import of Date Palm planting material along with management.	Plantation and Management of Date palm orchards in public sector at Jaisalmer and Bikaner.	At one farm i.e Sagra Bhjojka,Jaisalmer,Plantation of date palm in 92 hac.	After establishment of two model farms,the plants would start to give yield within 3-4 years.	After establishment of two model farms.
	Horticulture development programmes in Non-NHM districts	Development of Nursary,Establishment of Fruit,Spices and Flower Orchards, Green houses establishment,water harvesting resources,promotions of bee keeping and farmers training.	Fruit, Spices, flowers.	The outcomes is increase in area of horticulture crops viz fruits,Spices,Flowers, New nurseries are being established to produce quality planting material.	development Nursary, establishment of fruit,Spices, Flower, Green House.
	Centre of Excellence at Bassi- Trough Israel collaboration under Indo-Israel Cooperation.(ROCL)	Production of quality vegetables and flowers raised under latest Agro-technology resulting in very high production of vegetables per unit area.	NA	Demonstration of latest modern technology	NA
	Establishment of Hi-tech agro- horti research and Demonstration Centre Bassi project	Transfer of technology	More then 2700 Officials & Farmers have visited the site Center	Enhancement of skill and capacity building of the farmers, entrepreneurs , extension workers etc.	Enhancement of skill and capacity building of the farmers, entrepreneurs , extension workers etc.
	Demonstration Hub for Vegetable at Hi-tech agro-horti research and Demonstration Centre Bassi (Through ROCL)	Transfer of technology	More then 2700 Officials & Farmers have been visited the site for technical up gradation.	Enhancement of skill and capacity building of the farmers, entrepreneurs , extension workers etc.	NA
	Pilot project of Olives on farmers fields (Through ROCL)	Income enhancement of Farmers	2 .0 lacs Olive plants have been raised.	Technology Transfer	NA

	Development of Devdavas Nursery (Tonk)	Land Levelling,Boundry wall construction,Nursery bed,Pot Shed,Mother Plants,Irrigation Source,Electric Connection,drip Irrigation System,Water Storage Structure,Lift Irrigation,Plant Production Facility and Machinery,Implement and Equipment.	NA	The Devravas Nursery is under development stage, after development it will start production of quality plants of fruits within a duration of five years. it will start production of 4-5 lac plants per year.	NA
3) Seed	Enhancing Seed Replacement Rate (SRR) of Oilseed, Pulses and Maize in Rajasthan.	Seed Quality increased.	Support to on going ISOPOM scheme in increasing SRR	Productivity increased.	Productivity will improved.
	Upliftment of Poor and Marginal Farmers	To produce large quantities of pigeon pea in Rajasthan	NA	Farmer will start generate income from their marginal lands through pigeonpea crops and Pigeonpea dal will be available in rural and urban market.	NA
	Development of Pigeonpea Hybrid.	Research on Pigeonpea.	NA	Development of Pigeonpea Hybrid Suitable for Rainfed Areas of Rajasthan.	NA
4)Crop Development	Specific projects for productivity enhancement, quality improvement and area expansion.	To enhance productivity in mustard and soyabean, 150% in barley and pulses	Increased production and quality	99 productivity enhancement programme on different crop	99 productivity enhancement programme on different crop
	Green Fodder Production	85000 hac area	NA	45 lakh tonns green fodder production	NA
	Validation of Important Crop Varieties	Study of genetic diversity through RAPD (Random Amplified	NA	Wide application of DNA finger	NA

	Through DNA Finger Printing.	Polymorphic DNA)		print in plant science & plant production	
	Optimization of Green Forage Production	To produce seed of promising forage crop varities in farmers participatory mode under deficit irrigation situation.	NA	Will improve situation of fodder availability in the region,Better livestock performance. And Improving livelihood of farmer.	NA
	Augmenting the productivity of Major pulses in South and South Estern Rajasthan	Seed production and increase in SRR,Demonstration of technology,Training,Biofertilizers Units.	NA	Replacement of seed,increase in productivity.Income generate fertility increase Nutritional security.	NA
	Genetic enhancement of lentil for earliness, disease resistance and high seed yield	Development of genetic stock for earliness, wilt resistant and high yielding lentil genotypes in macro-sperma group	NA	High yielding, bold seeded, early maturing, wilt resistant lentil varieties.	NA
	Genetic enhancement of legumes like pea, Rajmash, Horse gram and Dhaincha to elevate/accelerate productivity	To develop/identify high yielding varieties of pea, rajmash, horse gram and dhaincha.	NA	Development of high yielding biotic and abiotic resistant/tolerant varieties will be the outcome of the project.	NA
	Maintenance Breeding of Pulses.	Strengthening of physical facilities.	NA	High yielding biotic and abiotic resistant/ tolerant germplasm lines	NA
	Pilot project for promoting Pulses and wheat	1500 Bigha area.	Against the target of 250 we have achieved. 273 families.	Production will be high (20-30%) than conventional crops.	1000 families benefited.
5)	Gypsum	Easy availability of	NA	Availability of	NA

Fertilisers And INM	Distribution	gypsum to farmers at panchayat samiti level.		gypsum at uniform rate throughout the State.	
	Strengthening of soil, fertilizer, pesticides & residue	Pesticide lab will result in increase of yearly analyzing capacity.	Qualitative residues testing facilities started due to RKVY.	3200 to 3800 samples per year.	Heavy metal and mercury testing facility created with latest technology
	Fertigation Support	Adoption of fertigation by farmers for accurate & uniform application of fertilizer	NA	It will Increase yield and fine tune quality of the crop.	NA
	Establishment of fish seed production unit	will ensure quality and purity of seed.	Work under Progress.	Production of additional 300 million fry,will ensure quality & purity of the seed	Work under Progress.
	Popularization of village level soil health cards and village level package of practices	Popularization of Package of Practices on village bases for providing information to indidual household.	Increasing the sustainability of the agriculture system of the area.	Increasing the sustainability of the agriculture system of the area.	Popularizatio n of POPs on village level bases for providing information to individual household/far mers, through a massive campaign.
6)Dairy Developm ent	Establishment of 50 KL milk plant at Nagaur	To create capacity to process 50 KL milk per day	NA	To provide ensured market to local milk suppliers.	NA
	Setting up of milk processing unit at jaisalmer	To create capacity to process 20,000 L of milk per day	Milk processing, storage and chilling process.	It will benefit 7500 milk suppliers through formation of 75 new dairy societies	1 Milk unit establishment .
7) Animal Husbandr y	Programme Battle aganist infertility	To improve knowledge base of animal farmers about good husbandry	Increase in milk production,ad option of good husbandry practices.	Improved health, increased fertility and high milk yield of animals.	TOT to 100 vertenairy doctor has given.
	Establishment of Rathi Cattle Breeding Farm.	10000	Conservation and Improvement of Rathi Germplasm.	Approx. 5% in Rathi Cattle.	Conservation of indigenous breed.improv ement in the economy of

					rural indigenous cattle holdings..
	Breeding Bull Registration &Scrub Bull And Calf Castration Programme	Registration of breeding Bull .Castration of Scrub bulls and calves	NA	The indiscriminate breeding can be prevented, It will strengthen the breed improvement programme.	NA
	Enhancement of Centre for Human Resource	To provide undergraduate and postgraduate instruction in Veterinary and Animal Sciences.	NA	Will provide & specialized efficient animal health facilities by manpower with sufficient scientific knowledge and hands on training.	NA
	Availability of Travis on Gram Panchayat Centre	To available Travis on 1000 gram panchayat at centre	NA	Will helpful in improvement in animal health and artificial breeding	NA
	Strengthening of disease diagnostic facilities & control system	Reduction of mortality and insecurity of farmers.	NA	Higher production and income of farmers	NA
	Cold chain maintenance of vaccines	35 lac livestock breeders will be benefited.	Animal health improvement.	Provide better health and production to animals.	Health and Production increase.
	Treatment for cattle and other animals affected by drought (Rabi Abhiyan)	1000000	NA	Approx. 3% (Provide Better Health and Production)	NA
	Surra Disease control in Camel	It will improve the health status of the camel	NA	Improve the economic status of Camel Breeders.	NA
	Capacity Building for Animal Feed Technology, Quality and Productivity	impart trainings and enhance awareness for fodder enrichment.	NA	Generate trained skilled personals.	NA

	Enhancement				
	Development of fodder and grass farm Khanpur.	500 Quintle seed production	Work order for fencing and construction of implement shed has been placed	Enhance grass and fodder production	Project in Progress.
	Strengthening of Infrastructure, Outdoor, Training and Nutrition Lab Facilities	To develop proper shelters to animals visiting the hospitals for treatment specially during summer and monsoons	NA	Improved health of animals, development of trained HRD and better quality of animal feed.	NA
	Construction of Outdoor Shed on Veterinary Hospital	To construct outdoor shed for availability of better animal health facilities	NA	Improvement in animal health and facilities of artifical breeding.	NA
	Development of backyard Poultry in Rajasthan	To develop poultry farming leading to employment & occupational opportunities in rural sector.	NA	Total No. of beneficiaries– 2000 Family..	NA

Appendix Table 7.1: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Crop Development	Terrace land development	Jungle clearance for land development	499 ha of land development for production of paddy	To bring 499 ha of land under paddy production	To increase Net Sown Area & increase food grain production
	Soyabean	To distribute agril. inputs for production of soya bean seeds	1063 MT of soya bean seeds produced & 866 farmers were benefited	866 ha of land brought under soya bean cultivation & farmers were benefited with inputs	Area under soya bean increased & farmers were benefited & increased their income
	Maize	To distribute maize seeds and provide inputs such as organic manure & bio-fertilizers	1548 farmers utilized this benefit	To increase area under maize production in 16 districts of the state & to bring 1548 ha area under maize production	Increased maize production to 6000MT in the state
	Paddy	Jungle clearance for land development	499 ha of land development for production of paddy	To bring 499 ha of land under paddy production	To increase Net Sown Area & increase food grain production
	Groundnut	To make expenditure on land development & encouraging Jhum cultivation	By supplying necessary agril. inputs such as organic manure & fertilizers and necessary tools & implements	80 no. farmers were benefited	Increased groundnut production for enhancing their income
	Vegetables	To distribute agril. inputs such as seeds, bio-fertilizer, bio-pesticide & organic manure for production	To distribute 114390 gms of seeds, 4612kg of bio-fertilizer, 8487 ml of bio-pesticide & 18450kg of organic manure	To benefit 369 farmers with veg production inputs & to encourage use of these inputs	To increase usage of agro chemicals, bio-fertilizers & pesticides in agril
	Cultivation of sang (Local tea beverage)	Development of nurseries in 3 districts	To increase expenditure on development of these plantations	To generate income & employment for the unemployed youths in the state	-do-
	Mustard Seed	Distribution of Mustard seeds-34500kg, Bio-pesticides-75900ml, Organic manure-172500kg,	34500kg	6900 farmers were benefited	-do-

		Bio-fertilizer-41400kg			
2. Horticulture	Assistance for maintenance of old plantations	To increase production & productivity of old plantations	450 farmers were benefited	To rejuvenate the old plantations	Production & productivity of these plantations increased
	Creation of awareness among farmers regarding new technologies	To create awareness on new technologies in crop development	To increase yield & productivity of orchards	2 demonstrations plots were developed in farmer's fields	Awareness was created in the farmers for better farming practice and to increase production & productivity
	Potato seed production	Expenditure incurred on production of the seeds for both summer & winter season	400ha of land covered under production and benefited 400 farmers	Produced 32240 qntls of seeds	Beneficiary farmers received handsome amount
	Distribution of Vegetable seeds	To increase the off season vegetable production	427 farmers were benefited with this program	Area under off season vegetable production increased	2700MT off season vegetable production increased
	Fruits	NA	↑1.20 lakh (IPM)	NA	NA
	Encouragement to Govt. nurseries	To produce 1,20,000 improved planting materials of fruits	To increase the availability of quality materials to the farmers	Increased the availability for the overall growth in production & productivity of horticultural crops in the state	Increase in yield, production and productivity of fruits & vegetables leading to increase income of the farmers
	GPS Survey Work	1 set of survey was undertaken	For the better planning and implementation of projects	Helped in better planning the projects	NA
	Setting up of permanent vegetable garden	All the necessary inputs were provided to set up the garden	130 SHGs (mainly women farmers) and unemployed were involved & educated	Production of vegetable was increased & 130 women farmers were benefited.	130 SHG & their unemployed women were benefitted which increased vegetable production
3. Fishery	Fish Production	Expenditure on construction of fish ponds for seed production 2 districts	To adopt new techniques of fish production to increase productivity	To bring additional water area under fish culture and to increase fish production	Area under fish production increased to 72 ha, increased fish production
	Magur Production	To encourage local magur fish and carps fish ponds & seeds	To get max benefit from construction of ponds, to create awareness	Enhanced fish productivity	Increased additional income to the farmers

			among farmers by providing inputs & technical support		
	Pork Production	To increase pork production in the state	Increased pork production to 12400 tonnes	Pork production increased	Increase in both production & productivity
	Duck meat Production	Encouraging duck and duck cum fish production	Increase additional duck cum fish production	Yield increased to 4 per cent	Increase in duck meat production
	Egg Production	NA	3 lakh no. of chickens increased	NA	Increase in production of chickens
4. Animal husbandry	Milch Cow	20 Nos. of milch cow were distributed to the beneficiaries.	To increase milk production	Milk production increased by 15per cent	-do-
	Fodder Development	Implemented livestock fodder development scheme. One Fodder seed development center was established.	Development of fodder in the state increased. Distributed seeds to progressive farmers in and around the .	To make self sustain for the farm and the farmers of adjoining areas.	Increase in fodder production which led to income generation and sustain livelihood
	Grass land developed	To develop 40 acres of grass land	40 acre developed,	2-3 tonnes of Fodder seeds & fodder grass increased	Seeds were further distributed
	Farmers trained	800 nos.	Expenditure incurred	800 farmers trained on UMBM&SP	800 farmers trained & aware
	Animals castrated	205 nos.	Expenditure incurred	CFAI & improve meat quality	205 nos. castrated, 500 Nos. getting fresh water
	Self sufficiency of local fodders	For Mithun breeding farm	Expenditure incurred	NA	Distribution of fodder seed
	FSPC	NA	Establish	NA	NA
	Dairy units	31 nos.	Expenditure incurred	Increase farmers participation	NA
	Poultry units	135 nos./9000 no.s poultry birds	Expenditure incurred	Increase farmers participation	50 units utilized, 135 unit poultry farming
	Piggery units	53 nos.	Expenditure incurred on 68 nos.	Increase farmers participation	68 Units.
	Goatery unit	4 nos.	Expenditure incurred	Increase farmers participation	4 nos.
	Implementation of the livestock mithun farming	NA	Expenditure incurred	NA	2 units mitun farming improved, 20

					nos. farmers benefited
	KVSC	7 nos.	Construction incurred	NA	Dispensary service improve
	VAC	1 no.	Construction incurred	NA	Dispensary service improve
	VDB	2 nos.	-do-	NA	Dispensary service improve
	LSAH		Construction incurred	NA	Dispensary service improve
	Dispensary building	2 nos.	Construction incurred	Improve veterinary service (56 villages covered)	39,000 animal and birds treated
	Containment of FMD	During outbreak	Expenditure on LAHC	Improve socio economic status of farmers	Medicines procured for 30.28 lakh to 100 nos. farmers
	Farmers hostel	1 no.	Construction incurred	NA	Increased farmers income
	Security fencing	2 farms	Construction incurred	NA	Safety and security of the farm animals
	RCC Type-IV quarter	1 no.	Construction incurred	NA	NA
	Poultry shed	Construction	Construction incurred	NA	300 farmers benefited
	Boundary walls	2 nos.	Construction incurred	NA	NA
	Supply of clean water	NA	500 nos. villagers	NA	NA
	Self employment opportunity	NA	NA	In animal husbandry sector	NA
5. Sericulture	Mulberry cocoon plantation	22 acres	Expenditure on 1 MT	Increase production	1 MT,2.00 lakh revenue/year
	Som plantation	50 acres	Expenditure incurred	Increase production	NA
	Plantation of Keshru/Castor	342 acres	Expenditure incurred	Increase production	Revenue 9.00 lakh/year
	Oak Tasar cocoon plantation	24 acres	Expenditure on 0.5 MT	Increase production	0.5 MT, 2.00 lakh revenue/year, ↑ 60 units of area
	Eri Cocoon	NA	Expenditure on 3 MT	Increase production	Increased by 60 units of area
	Muga Cocoons	NA	Expenditure on 2 MT	Increase production	2 MT, 10.00 lakh revenue/year, ↑ 60 units of area

Source: Same as Table 1

Note: NA=Not Available; KVSC=Key Village Sub Centre; VAC=Veterinary Aid Centre; VDB=Veterinary dispensary building; LAHC=livestock Animal Health Care; FSPC=Fodder seed production centre; UMBM&SP Urea Molasses Block making and silage preparation; CFAI=castrated facilitating artificial insemination;

Appendix Table7.2: Major Sector-Wise Expected, Actual Output and Outcome

Sector*	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
Micro/Minor irrigation	Irrigation	235018ha	227018ha	35318ha	15498ha
	Copping Intensity	NA	NA	200%	-do-
Extension	Activities	111780 No.	9267 No.		
	Infrastructure	↑	↑	↑	↑
	Use bio-fertilizer	↑	↑	↑	↑
	Beneficiaries	NA	8600 No.	11370 No.	NA
Agriculture mechanization	Machineries	182321 No.	7916 No.	NA	NA
	Cropping Intensity	NA	NA	↑200%	-do-
	Farm power	NA	NA	↑	0.03hp/ph
	Beneficiaries	NA	NA	9200	NA
Animal husbandry	Activities	8377249	NA	NA	NA
	Milk production	NA	NA	Rs.1513.5/animal	NA
	Meat production	↑	↑	↑	↑
	Piglets	13800	NA	NA	NA
	Calf mortality	↓	↓10%	↓	↓
	Animals treated	NA	NA	NA	NA
	Green fodder produced	NA	NA	NA	NA
	Training	10395	7500	NA	NA
	Women employment	NA	2600	NA	NA
	Beneficiaries	NA	NA	NA	41892
Crop development	Paddy Seed	NA	↑	↑	↑
	Mustard Seed	39700MT	↑	↑	↑
	Black gram Seed	NA	↑	↑	↑
	Maize Seed	NA	↑	↑	↑
	Oilseed Seed	NA		97500 farmer	
	Cluster demonstration	NA	4000	NA	NA
	Micro nutrient	NA	141176 ha	176176 ha	136176
	Beneficiaries	NA	NA	NA	272353
Fisheries	Fisheries	2070.4ha	NA	NA	NA
	Fish	↑	583.54	↑4725MT	NA
	Prawn	↑	56ha	↑11.25MT	↑49MT/Rs. 35 crore
	Kuchia	↑	21 unit	NA	NA
	pork	NA	NA	70MT	Rs. 0.34 crore
	Fish seed production	NA	NA	↑1500MT	
	Paddy productivity	NA	NA	↑350MT	Rs. 1.38 crore
	Beneficiaries	1910	9660	NA	NA
Horticulture	Fruit production	↑	↑	↑	↑
	VegeTable production	↑	↑	↑	↑
	Spices production	↑	↑	↑	↑
	Post-Harvest losses	↓	↓	↓	↓

	Disease control on coconut & areca nut	2000ha	NA	NA	NA
	Women training	15800	12500	-do-	-do-
Marketing & PHM	Market for organic commodity				
	Benefited from direct marketing	6500	9000	7800	-do-
	Benefited from auto van	800	1200	-do-	-do-
	Training	11460	-do-	-do-	-do-
	Organic commodity producer	27 district	-do-	-do-	-do-
	Distribution of four wheeler	309	-do-	-do-	-do-
	Distribution of three wheeler	152	-do-	-do-	-do-
	Threshing floor	86	-do-	-do-	-do-
Research– agri, horti, animal husbandry, etc.	Production of organic inputs	↑	↑	↑	↑
	Seed of rice	↑	↑	↑	↑
	Seed of mustard	↑	↑	↑	↑
	Seed of jute	↑	↑	↑	↑
	Seed of Sugar cane	↑	↑	↑	↑
	Fish seed	↑	↑	↑	↑
	Poultry chick	↑	↑	↑	↑
	Area for seed production	12500ha	↑	↑	↑
	Demonstration	20	↑	↑	↑
	Rice fish culture	↑	3	↑	↑

Source: Same as Table 1

Note:*In the parentheses indicate project information are not available; NA: data not available; ↑and ↓ indicate increase and decrease; PHL implies Post-harvest Loss;

Appendix Table 7.3: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Crop development	Seed distribution	3500 qtls	-do-	↑	↑
	Seed minikit	6000 pac	↑	↑	↑
	Seed drill	1200 nos.	↑	↑	↑
	Wheel	1200 nos.	↑	↑	↑
	Sprayer	1200 nos.	↑	↑	↑
	Jute demonstration	1200 nos.	↑	↑	↑
	Jute ratting	300 nos.	↑	↑	↑
	Wheat production	↑	↑	↑	↑
	Rice production	↑	↑	↑	↑
	Maize production	↑	↑	↑	↑
	Pulse production	↑	↑	↑	↑
	Farmers benefited	NA	NA	5378 nos.	-do-
	Farmers income	NA	NA	↑	↑
	Soil nutrient	↑	↑	↑	↑
	Pond construction	NA	NA	470 ha	NA
2.Agriculture mechanization	Manual tools (subsidy)	Rs.2000/each	↑	↑	↑
	Combine harvester (subsidy)	Rs.5lakh/each	↑	↑	↑
	Farmers training (Subsidy)	Rs. 5000/each	↑	↑	↑
	Tractor	Purchase	↑	↑	↑
	Power thresher	Purchase	↑	↑	↑
	TTST (subsidy)	50%, Rs. 40000/unit	↑	↑	↑
	Sugarcane harvesters (subsidy)	Rs. 50 lakh/each, 50%	↑	↑	↑
	Cost of cultivation	NA	Save	-do-	-do-
	Transportation facility	NA	improve	-do-	-do-
3.Organic farming / bio fertilizer	Bio-fertilizer unit	construction	-do-	-do-	-do-
	Seed supply	49250 qtls	↑	↑	↑
	Soil health	improve	-do-	-do-	-do-
	Vermi compost	purchase	-do-	-do-	-do-
	Earthworms	purchase	-do-	-do-	-do-
	Organic pesticides	purchase	-do-	-do-	-do-
	Lab equipment	purchase	-do-	-do-	-do-
	Bio gas plant	purchase	-do-	-do-	-do-
4.Seed	Seed production	3.37 lac qtls	↑	↑	↑
	Seed storage	10000 qtls	↑	↑	↑
	Seed testing lab	1 nos.	↑	↑	↑
	Godown	Rs. 5 lakh	-do-	-do-	-do-
	Fencing	Rs. 16 lakh	-do-	-do-	-do-
	Distribute HYV seed	Paddy, wheat & mustard	-do-	-do-	-do-
	Farm equipment	Purchase	-do-	-do-	-do-
	Infrastructure	Developed	-do-	-do-	-do-
5.Horticulture	Crop seed	Purchase	-do-	-do-	-do-
	Mushroom seed	Purchase	-do-	-do-	-do-
	Mushroom cultivation	Trained	-do-	-do-	-do-
	Organic vegetable	5000 ha	-do-	-do-	-do-
	Poly house	construct	-do-	-do-	-do-
	Hybrid vegetable production	improve↑	-do-	-do-	-do-
	Vegetable production	↑	↑	↑	↑
	Horticulture land	↑	↑	↑	↑

TTST= Tractor trolley for sugarcane transportation, PHM: Post Harvest Management; IT: Information Technology; INM: Integrated Nutrient Management, NRM: Natural Resource Management;
Source: Same as table 1;

Appendix Table 7.4: Major Sector-Wise Expected, Actual Output and Outcome

Sector*	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1.Crop development	Soil sample analyzed	10000 nos.	-do-	NA	NA
	HYV seed available	263.49 MT	242.95 MT	NA	NA
	Goat breed improvement	1 lakh nos.	-do-	NA	NA
	Goat population	↑ 4070 nos.	-do-	NA	NA
	Pig population	↑4440 nos.	-do-	NA	NA
	Training centre	strengthen	-do-	NA	strengthen
	Fish fingerlings	3.25 million/year	-do-	EG to 450 farmers	-do-
	Spawn production	30 crore	-do-	NA	NA
	Fish seed production	NA	NA	increase	increase
	Milch cattle unit	3010 nos.	3000 nos.	NA	NA
	Milch cattle	10 lakh nos.		NA	NA
	Dairy unit	1 nos.	-do-	NA	NA
	Milk production	NA	NA	↑53700 ltr/day	↑46450 ltr/day
	Milk marketing	NA	NA	Facilities provide	-do-
	Heifers	NA	10000 nos.	NA	NA
	Centers	NA	200 nos.	NA	NA
	Seed production	increased	1298 ha	increased	1298 ha
	Seed distribution	increased	NA	NA	NA
	Agri. Implement distribute	NA	17288 nos.	NA	NA
	AWS installed	NA	60 nos.	NA	NA
	Improving Food Security	Improve QPM	3.3 lakh nos. QPM	↑APY	↑APY
	SRR	NA	NA	↑area	-do-
	Beneficiaries	NA	NA	1110 families	-do-
	Saved Labour power	NA	NA	NA	↑8%
	BIC & trained	NA	NA	NA	200 nos.
2. Micro & minor Irrigation	Check dams	20181 ha	NA	20181 ha	NA
	Distribute Lift irrigation	2000 nos.	NA	NA	NA
	Food production	NA	NA	↑	NA
	Food security	NA	NA	Make available	NA
	Irrigation area	NA	NA	↑	NA
3. Extension	Farmers Training	On farm implements	NA	NA	NA
	Labour problem	NA	NA	NA	solved
	Labour efficiency	NA	NA	NA	increased
	Infrastructure dev.	21 KVK's	NA	NA	NA

	Establishment of ATIC	244 blocks	NA	NA	NA
	FMTTC at BAU	1 no.	NA	1 no.	
	SDT	1762 farmers	NA	NA	NA
	Farmers Knowledge	NA	NA	increase	NA
	SD in agriculture	NA	NA	NA	improve
	SD in horticulture	NA	NA	NA	improve
	SD in watershed	NA	NA	NA	improve
	Exposure visit	NA	NA	NA	Outside state
4. Dairy Development	MDDC	10 unit	NA	NA	NA
	MCUPS	2212 nos.	NA	NA	NA
	Mini dairy unit	200 nos.	NA	NA	NA
	MCD	250 nos.	NA	NA	NA
	Heifers	6000 nos.	NA	NA	NA
	JDP	1 dairy	NA	NA	NA
	CD (20 cows)	100 unit	NA	NA	NA
	2 milch cattle unit	4692 nos.	NA	1200 nos.	NA
	5 milch cattle mini dairy	1468 nos.	NA	499 nos.	NA
	10 milch cattle medium dairy	340 nos.	NA	150 nos.	NA
	20 milch cattle commercial dairy	147 nos.	NA	50 nos.	NA
	50 Milch dairy	17 nos.	NA	5 nos.	NA
	MPMP	1 dairy	NA	NA	NA
	Inter calving period	NA	NA	reduce	NA
	Early age of puberty	NA	NA	reduce	NA
	Mortality	NA	NA	reduce	NA
	Milk production	NA	NA	157900 ltr/day	NA
	Door step milk marketing	NA	NA	create	NA
5. Seed	Seed production	increase	NA	NA	NA
	Seed distribution	increase	NA	NA	NA
	HYV Seed available	134.45 MT	NA	NA	NA
	Seed testing lab	4 nos.	NA	NA	NA
	SRR area	NA	NA	increase	NA
	Good quality seed	NA	NA	provide	NA

Source: Same as table 1;

Note: * remarks given in the parentheses information are not available; NA=Project information not available; ↑ denotes increase/enhance & ↓ denotes decrease/reduce; DFA=Drought Affected Farmers; IVS=Improved Variety Seed; Horticulture Crops; DDT= Drought tolerance resistance; PHL= Post Harvest Los; PHM=Post harvest management;QPM=Quality Planting Material; APY=Area, production & productivity; EG= Employment generation; BIC= Breed improvement Centre; Dev=Development; FMTTC= Farm Machinery Training and Testing Centre; SDT=Skill Development Trainings; SD=Skill Development; MDDC=Modern dairy demo centre; MCUPS= Milch cow under prototype scheme; JDP= Jharkhand Dairy Project; MCD=Milch cattle dairy; CD=Commercial dairy; MPMP=Milk Procurement, Marketing & Processing;

Appendix Table 7.5: Major Sector-Wise Expected, Actual Output and Outcome

Sector*	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Horticulture	Promotion of Fruit crops	126 ha	NA	NA	NA
	Promotion of vegetables crops	64 ha	NA	NA	NA
2. Fisheries	Fish Production	NA	NA	NA	NA
3. Extension	CD on Rabi Maize	1560 ha	NA	1560 ha	NA
	CD on Rapeseed & mustard	1350 ha	NA	1350 ha	NA
	CD on Pea	1350 ha	-do-	1350 ha	NA
	FFS on SRI	1700 ha	NA	1700 ha	NA
	FFS on Rapeseed & mustard	1700 ha	NA	1700 ha	NA
	FFS on Rabi maize	1700 ha	NA	1700 ha	NA
	FFS on Pea	1700 ha	NA	1700 ha	NA
	Training on HD	NA	371 nos.	NA	NA
4. Animal husbandry	Piggery development	1 nos.	NA	NA	NA
	Training on LPH	40 nos.	NA	NA	NA
	Training hall	1 Nos.	NA	NA	NA
5. Crop development	Food grains	NA	NA	NA	NA
	Pulses	NA	NA	NA	NA
	Oilseeds	NA	NA	NA	NA
	Cereals	NA	NA	NA	NA

Source: Same as Table 1

Note: * remarks given in the parentheses information are not available;

NA=Not Available; CD=Crop demonstration; FFS=Farmers field School;

HD=Horticulture Development;LPH=Livestock & poultry husbandry;VFATC=Veterinary Field Assistant Training Center;

Appendix Table 7.6: Major Sector-Wise Expected, Actual Output and Outcome

Sector*	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Horticulture	**Roses**	NA	AE 10.024 ha	NA	40,000 stem/day
	Flower production	NA	NA	NA	↑
	Turmeric processing	NA	650 No.	NA	60 MT
	Vegetable Production	NA	NA	NA	↑
	Colour capsicum	NA	18 units	NA	39 units
	Pig Production	NA	NA	NA	45MT/Rs .67 crore
	Veterinary beneficiaries	NA	NA	NA	900 No.
	NRP	NA	NA	↑	↑
	DHH	10000 No. 10130 MT	NA	6500 beneficiary	Rs.50 lakh/hub
2. Fisheries	**Ponds**	892 No.	NA	NA	NA
	Mawpun Fish & seeds	350000 No.	NA	NA	NA
	Spawn production	NA	160000 No.	NA	NA
	Fingerlings	NA	100000 No.	NA	NA
	Fish Production	NA	98 MT/anum	10000 MT	4.5 MT/year
	RFSPC	1	NA	NA	NA
3. Natural resource management	**RWHS**	650 ha (18 unit)	640 ha (18 unit)	244MT(18 unit)	NA
	SWC	1300 ha	4500 ha	2500 MT	↑
	MICD	NA	1200 ha	NA	Irrigate 10ha
	Paddy clusters	NA	374 No.	NA	NA
	Crop production	NA	NA	4800 MT	↑
	Food grain production	NA	NA	NA	↑
4. Animal husbandry	**Expected Calves**	220 calves	NA	NA	NA
	Expected beef production	NA	NA	NA	50 MT
	Pork Production	25 MT	NA	NA	25 MT/annum

Source: Same as Table 1

Note: * Points given in the parentheses of this column indicate that information is not available; ↑and ↓ indicate increase and decrease; PHL implies Post-harvest Loss; NA= Not Available; DHH=Development of horticulture hub; AE=Area expansion; NRP= Nutritional Requirement of people; RFSPC=Regional Fish Seeds production centre; RWHS= Rain Water Harvesting Structures; SWC= Soil and Water Conservation; MICD= Mini irrigation check dam; SWP= Surface Water Pumping;

Appendix Table 7.7: Major Sector-Wise Expected, Actual Output and Outcome

Sector*	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
11. Natural resource management (94.04 % NA)	Control of SBE	190 nos.	100 nos.	NA	NA
	Check dam	120 nos.	NA	NA	NA
	WHS	23 nos.	NA	NA	NA
	Rice area	↑349.82 ha	NA	↑production	NA
	Irrigated area	NA	NA	↑125 ha	NA
	Soil moisture	NA	NA	improved	NA
	Vegetables production	NA	NA	↑98MT	NA
2. Horticulture (86.67 % NA)	Vegetable Cluster	14800 nos.	NA	14800 nos.	NA
	HTGH	8 nos.	NA	NA	NA
	Cultivation on Green house	90 nos.	NA	NA	NA
	Cultivation on Shed house	43 nos.	NA	NA	NA
	Seedling	NA	NA	1 lakh/unit	NA
	Vegetable production	NA	NA	25.80 MT	NA
3. Animal husbandry (95.83% NA)	Poultry farm	101 nos.	NA	↑	NA
	Milk Production	211335ltrs/anum	NA	↑	NA
	Fodder production	7600MT/anum	NA	↑	NA
4. Innovative programmes, training, capacity building & others (75% NA)	Oil palm Area Expansion	5000 ha	NA	NA	NA
5. Fisheries (93.75% NA)	ABPP Fisheries	20 nos.	NA	NA	NA
	Fisheries develop	26.8 ha	NA	NA	NA
	Table size fish	NA	NA	56 MT/anum	NA
	Fish seed	NA	NA	2million/anum	NA

Note: *In the parentheses indicate project information are not available; NA: data not available; ↑and ↓ indicate increase and decrease; SBE= stream bank erosion; WHS= Water Harvesting Structure; HTGH= High Tech Green House; ABPP= Animal based protein production; FFS= Farmers Field School; QSP= quality seed production; AIG= Agriculture Inputs Go down; AAI= Assistance to Agriculture Inputs;
Source: Same as Table 1;

Appendix Table 7.8: Major Sector-Wise Expected, Actual Output and Outcome

Sector*	Components	Out put		Outcome	
		Expected	**Actual**	**Expected**	**Actual**
1. Animal husbandry	Meat Value	Rs. 300 crore	NA	↑Rs. 3.1 cr	↑180 ton
	Meat production	350 tonnes	NA	97200 kg	↑
	Piglets	15750 nos.	NA	Earn Rs. 3.1 crores	NA
	Milk Production	NA	NA	↑	↑
	Protein availability	NA	NA	↑	↑
	Fodder production	800 MT	1000 MT	↑	↑
	Vaccine Campaigns	1300 animals	NA	↑	↑
	SGP	5000 nos.	2000 nos.	↑	↑
	Animal treated	NA	3200 nos.	↑	↑
	Beneficiaries	NA	300 nos.	↑	↑
	House hold income	NA	NA	↑Rs. 42.7 lakh	↑
	Employment generation	NA	NA	↑	↑
2. Natural resource management	Crop AYP	↑	↑	↑420 ha	↑
	Double Cropping	↑	↑	↑	↑
	Dry terracing	420 ha	4200 mandays	↑	↑
	WHP	800 units	↑50%	↑	↑
	FWM	2135 ha	NA	↑	↑
3. Horticulture	Go-downs & market shed	84 nos.	NA	↑	NA
	Market equipments	1011 nos.	NA	↑	NA
	Mushroom	26 unit	NA	↑	NA
	Organic food	↑	NA	5000 MT	NA
	Power tiller	150 nos.	NA	6750 man days saved	NA
	Bio-fertilizer	50 MT	NA	2000 ha	NA
	Assured water	1900 ha	NA	↑	NA
	WHP	200 unit	NA	↑	NA
	Food grain	40800 MT	NA	26520 MT	NA
	Meat value	Rs. 4.518 Crore	NA	↑	NA
	Beneficiaries	3000 farmers	NA	↑	NA
	Employment generation	NA	NA	↑	NA
4. Fisheries	EFP	5 streams	150 km	↑	NA
	Magur Production	6ponds, 6ha	NA	6 MT	NA
	Study tour	280 farmers	NA	↑	NA
	Fingerlings	24500 nos.	12500 no.	NA	NA
	MLR	↑	↑	↑	↑
	Pond renovation	35 fishery	↑	↑	↑
	Power tiller distribution	NA	60 no.	NA	NA
	Additional income	NA	NA	Rs. 26.95 lakhs	Rs. 13 lakhs
	Man days saved	NA	NA	NA	375 days

5. Crop development	Food grain production	59820 MT	20400 MT	32583 MT	13260 MT
6. Marketing and post harvest management	Crop area	↑420 ha	NA	↑420 ha	NA
	Orchards	400 nos/11 dists	NA	NA	NA
	Fruit production	NA	NA	↑	NA
	Vegetable production	NA	NA	↑	NA
	Double cropping	NA	NA	↑	NA
	Meat production	↑350 tonnes	NA	NA	NA
	Storage houses	20 nos/11 dists	NA	NA	NA
	Market sheds	NA	25 nos.	NA	NA
	Farmers association	87 no/1740 farmers	NA	NA	NA
	Equipment distribute	NA	510 nos.	NA	NA
	Survey	11 projects	NA	NA	NA
	WHP	220 units	NA	NA	NA
	SGP	5000 nos.	NA	NA	NA
	Mortality	NA	NA	↓	NA
	PHM	NA	NA	improve	NA
	Protein availability	NA	NA	↑	NA
	Malnourished	NA	NA	↓	NA

Source: Same as Table 1

Note: * Points given in the parentheses of this column indicate that information is not available; NA=Not Available; AYP=Area; Production and Yield; SGP= Superior Germplasm of Piglets; DFA=Drought Affected Farmers; WHP=Water Harvesting Pond; FWM =Farm Water Management; IVS=Improved Variety Seed; Horticulture Crops; DDT= Drought tolerance resistance; PHL= Post harvest loss; PHM=Post harvest management; CI=Cropping Intensity; GCA=Gross Cropped Area; NIA=Net Irrigated Area;

Appendix Table 7.9: Major Sector-Wise Expected, Actual Output and Outcome

Sectors*	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Crop Development	Hybrid Maize	Yield increase by 45 qtl/ha.	30,000 Ha	Return of Rs. 18000/ha	Income & yield increase 35%/Ha, provide food security
	PTD of hybrid sunflower	NA	11,790 Ha	NA	Increase yield up to 25%/Ha
	PTD of SRI (20 districts)	NA	50 Acres	NA	Production increase by 35%
	Cashew plantation	Conserve soil in 200ha	NA	Good income from 200 ha	NA
	Improving of black pepper plantation	200 ha	NA	Yield enhanced in 200 ha	NA
	Food and nutritional Security	Improve	NA	NA	NA
	Practice of scientific method	For tuber crops	NA	↑Area of tuber crop	NA
	Practice of scientific method	Pineapple cultivation in hilly slope, ↑ yield by 50 tones/Ha	NA	NA	NA
	Seed material	NA	NA	Timely available	NA
	Improved variety turmeric	NA	NA	↑Area	NA
	Pulse Seeds Production	NA	1440 Ha	NA	Production of 7230.85 qtls.
	Rhizobiul culture applied	NA	141837 Kg. in 94558 ha of Pulses & Oil seed crops	NA	↑ yield by 10%
	PSB	NA	94558 Kg. in 94558 ha of Pulses & Oil seed crops	NA	↑ yield by 10%
	Up scaling of Pulse Production	NA	3,00,000 input kits, enhanced yield in 60,000 Ha	NA	Farmers convinced, increase yield
	PTD of Mustard	NA	5,700 Ha	NA	increase yield
	PTD in Hybrid Maize	NA	2000 Ha	NA	Motivate farmers
	Gypsum	NA	32066 Ha treated	NA	8017 MT distributed, 78155 nos.

					beneficiaries
	SRI Practiced (30 districts)	↑production by 40%	45880 nos. PTD in 30 acre	Seed requirement of SRI ↓ by 90%	↑yield by 43%
	Rice intensification (30 districts)	Less incidence of pest & water requirement	2000 nos. PTD in 30 acre	Higher yield	↑yield over 47%
	Hybrid paddy minikits	↑yield of paddy	2516 nos. kits for trial	Popularizing hybrid paddy among farmers	Result convinced farmers
	SRI in Rabi 2009-10 (30 districts)	NA	1852 Ha PTD	NA	Less incidence of pest & water requirement, yield by 35%
	SRI in Rabi 2010-11 (30 districts)	NA	7480 acre PTD	NA	Better utilization of solar energy, ↑yield by 43%
	BD of Paddy Rabi 2011-12	10,000 ha Technology demonstration	NA	↑ in paddy yield	NA
	Hybrid pigeon pea	↑ in area	NA	↑ in farmers income	NA
	Sugarcane Development Package	NA	4000 MT quality seed distribute,50 Ha SRP, 3000 growers get 1.20 lakh MT cane	NA	4000 of MT quality seed distribute
	PTD of sugarcane	NA	600 Ha involve 1500 cane growers	NA	↑ Yield 50%/ Ha, farm income Rs.72,000/ acre, current FRP Rs.1450/tonne
	Oilseed (Rabi/Summer)	Scientific method of cultivation, ↑ production	NA	Financial return of Rs 13000/Ha	NA
2. Agriculture Mechanization	Technology Development Mission on Agriculture	RKVY with IIT Bhubaneswar	NA	NA	NA
	Power Tillers sold on subsidized rate	NA	4600 nos.	NA	↓cost of cultivation,

					Farm power input ↑ by 0.0057 KW/ Ha.
	Popularization of Agri. Implements & Machineries in KBK	↑ yield	4371nos. machineries in subsidized rate	Utilization of mechanization	↓cost of cultivation, Employment generation 3334 nos., Farm power input ↑ by 0.003 KW/ Ha., irrigation potential 2500 Ha
	Popularization of Pump sets	Protected irrigation 10370 ha	9702 Nos. of Pump Sets of 1.5 to 7.5 HP on subsidy	NA	LIP in 3,888 Ha, Farm Power input by 0.012 KW/ Ha
	Popularization of agricultural machineries /implements/equipments.	NA	30280 nos. machineries /implements /equipments supplied at subsidized	NA	↓cost of cultivation, Employment generation 2074 nos., Farm power input ↑ by 0.0018 KW/ Ha.
	Power Tillers (at subsidized rate)	NA	2000 nos.	NA	Farm power input ↑ by 0.0024 KW/ Ha.
	Implement Factory renovated	NA	Work shops, machines & equipments, training centre & class rooms	NA	Development of Research efficiency & training infrastructure
	Popularization of Agriculture Implements	NA	3554 nos. of machinery supply on subsidy rate	NA	Farm power input ↑ by 0.0048 KW/ Ha.
	Popularization of Pump sets (Supply on subsidy rate)	NA	11256 nos. of 1.5 to 10 HP	NA	Farm power input ↑ by 0.0035 KW/ Ha
	Popularization of	NA	4475 nos.	NA	Farm

	Agricultural Machinery/Implements & Equipments		machineries /implements /equipments supplied		power input ↑ by 0.008 KW/ Ha
3. Animal Husbandry	Strengthening of Livestock Breeding Farm	Infrastructure created	Strengthen 2 nos. LBF	↑production capacity of farm	CCP will be utilized
	Development of Chiplima Farm	NA	2000 parent stocks and 300 pedigreed breeding maintained	NA	Supply of 1.5 Lakhs day old chicks & 200 nos. improved goat to farmers
	FASAI by controlled breeding.	1700 nos.	NA	↑improve breed of buffalo & cow	NA
	Implementation of GS under NMPS	6400 nos.	NA	↑meat production	NA
	Green Fodder	30 acre	NA	↑availability	NA
	Installation of Travis	1024 nos.	NA	Improve VHC	NA
	Andrological Laboratory	Establish, frozen semen production	Establish	improved variety of progenies	20-25 nos. semen/day from donor bull
	Creation of Infrastructure	↑storage facility of semen	NA	NA	NA
	Cattle feed plant	↑feed storage capacity	30000 MT/ annum production	Provide adequate quantity to cattle & dairy farm	Quality feed at subsidized rate to cattle & dairy farm
	RDIL	4 regions	-do-	Benefited livestock farmers	300 poultry & livestock samples test and diagnosis/day
	DDL	26 districts	-do-	Benefited livestock farmers	300 poultry & livestock samples test and diagnosis/day
	Mobile Veterinary Unit	40 nos.	NA	↓mortality & ↑productivity	NA
	Installation of Travis	Facilitate vaccine, treatment & artificial insemination	Produced 1024 nos. Travis	Smooth organization of VHC	-do-
	Improvement of poultry farms	8 nos. of govt. poultry & 16 nos.	NA	4000 layer birds in 8 nos. govt. poultry	NA

		hatcheries of SHGY		farm	
4. Marketing and PHM	Onion storage construction	1200 nos.	-do-	Storage capacity of 2400 MT	-do-
	Cold storage	Utilization of 90%/annum	NA	Rent of Rs 10000 per 10 MTs/season	NA
	Onion storage	Can be sold after 4 months of produce	1200 nos. onion storage construct	↑farmers income	Created 2400 MT of Onion storage
	Maize Market Yard	500 MT Godown,1 no shops & 1 no storage & grading	NA	MIF 10350 Sq. ft. area, procurement of 1,20,000 Qtls	NA
	Construction of PZECC	600 nos. cool storage of 100 kg capacity	-do-	Storage capacity of 600 qntls.	-do-
	Establishment of SMM at Umarkote	NA	1 no. godown & 2 nos. auction platform	NA	Marketed of 104268 MT Maize
	Establishment of SMM at Raighar	NA	Scale room, information centre, rest room etc, godown of 50 MT	NA	Marketed of 35315 MT Maize
	Cotton Market yard at Parlakhemundi	NA	1 no. godown, 20 nos. Retails stores, 10 Nos. Shop, 1 No TV Screen, 30 MT Capacity Sorting & Grading facility, 1 No. Weigh Bridge	NA	MIF of 18000 Sq. ft. & procurement of 11500 qtls. of Cotton
	Cotton Market Yard at Barhampur	NA	1 no. godown, 8 nos. shops, 1 no. weigh bridge, 1 MT Capacity sorting & grading facilities & 6 Nos. of retailing stores etc.	NA	MIF of 18992 Sq. ft. & marketed of 2200 qtls. of Cotton
	Cotton infrastructure facility	NA	On processing, moisture	NA	NA

			testing		
	Creation of ginning & pressing infrastructure on cotton	Contamination free lint cotton available	NA	↑additional cotton processing of 1 lakh qtls.	NA
5. Natural Resource Management	Land development	NA	Initiate	NA	OFD 442 ha & additional irrigation in 20 ha
	Development of SCDC/PDC/shelter belt plantation	NA	Land developed, projects for landless labor	NA	Additional irrigation in 836 ha, shelter belt plantation in 601 ha.
	Lift Irrigation Project	↑irrigation area	NA	↑farmers income & CI	NA
	Management of Acid Soils	35,000 ha	NA	NA	NA
	Arhar Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	Maize Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	cotton Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	Groundnut Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	Vegetables Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	Soil health	Improve, ↑pH up to 0.5 units	NA	Improvement	NA
	Supply of PMS	3500 ha	Supply of 8035 MT cover 3214 ha	NA	NA
	Managing acid soils for boosting Agri. Productivity	200000 ha acid soil ameliorated	Supply of 99393 MT of PMS & area treated 397572 Ha	↑yield by 50%	↑yield of non paddy crops by 34% over average yield
	Management of Acid Soils	NA	69200 Ha, applying 17300 MT of PMS	NA	↑yield of non paddy crops by 30% over average yield
	Supply of bagged phosphogypsum	165200 ha covered	NA	↑oilseed yield by 30%	NA

	during 2011-12				
6. Extension	Bore wells (28 KVKS)	NA	12 nos.	NA	NA
	Poultry (28 KVKS)	NA	15 nos.	NA	NA
	Goatery (28 KVKS)	NA	2 nos.	NA	NA
	Dairy (28 KVKS)	NA	1 no.	NA	NA
	Aquaculture (28 KVKS)	NA	2 nos.	NA	NA
	Mushroom spawn units (28 KVKS)	NA	23 nos.	NA	1000 bottles
	Vermi yard (28 KVKS)	NA	21 nos.	NA	10 qtls. Vermin compost & 5 kg vermin culture/annum
	Poly houses (28 KVKS)	NA	27 nos.	NA	NA
	Mini processing plant (28 KVKS)	NA	3 nos.	NA	NA
	threshing floor (28 KVKS)	NA	2 nos. (40m x 30m)	NA	NA
	Irrigation potential	NA	NA	NA	60 ha
	Old chick rearing	NA	NA	NA	Capacity of 500 day
	Fingerling production	NA	NA	NA	5000 nos.
	Seedling & QPM production	NA	NA	NA	5 lakh nos.
	Information wings strengthen	NA	2 nos.	NA	Quality printed materials to 2 farmers
	Facilitate training	More number of personals	NA	More number of training conducted	NA
	Capacity building	NA	NA	Horticulture dept.	NA
	Establishment of FIAC	100 nos. set up	-do-	NA	Training & workshops conducted
	Training of Input Dealers	400 nos.	400 nos. dealer trained	Dealers are efficiently functioning	-do-
	Training on climate change in agriculture	750 nos. officers trained	-do-	Position to access of climate change effect	-do-
	Training of AEFOAAF	1350 nos. trained	-do-	Able to reorient the extension efforts	-do-
	Capacity building of extension personnel	Training of 2820 officials	-do-	↑income, knowledge, skill & attitude	-do-

7. Seed	Seed Storage godowns	NA	10 nos. construct	NA	Seed storage capacity of 52500 qtls.
	Seed Storage Go-down	NA	Constructed 3 nos.	NA	Created 15750 qtls capacity
	Seed testing	40000 samples	NA	Timely seed supply to farmers	NA
	Vegetable Minikits	2 lakh distributed	NA	Covered 10000 ha HY vegetable	NA
	Seed Processing Plants	NA	3 nos. building	NA	24000 qtls.capacity
	Mobile seed processing plant (MSPP)	Immediate processing seed	8 nos. MSPP	Seed utilization increase	Seed processing capacity of 24000 qtls.
	Seed processing plant (SPP) at kuchinda	Seed supply to farmers	1 no. SPP construct	↑availability of certified seed	Seed processing capacity 3000 qtls
	Seeds storage godowns in seven districts	↑availability of certified seed	7 nos. seed storage godown construct	↑SRR	Seed storage capacity of 36750 qtls.
	Dehumidified Refrigerated Seed Storage Unit (DRSSU)	Store seed in good condition	2 nos.DRSSU renovated	Groundnut, potatoes loose the viability due to storage	Ground nut seed storage capacity of 4000 qtls.
	Distribution of Quality planting Materials	NA	94467 nos.	NA	↑production of fruit & vegetable
	Strengthening of infrastructure	NA	NA	For seed testing & certification	NA
	Agriculture farm strengthen	NA	57 nos. farm	NA	Seed production capacity 222.06 MT
	Created infrastructure facility	NA	NA	For model integrated farm	NA

Source: Same as Table 1;

* Points given in the parenthesis are the magnitude of information not available in RKVY official website;

Note: NA implies not available; PTD=Production Technology demonstration; BD=Block demonstration; SRP= Seed Replacement Programme; LIP= Lifesaving Irrigation Potential; LBF=Livestock Breeding Farm; Crossbred calves produced=CCP; FASAI= Frozen Semen Artificial Insemination; GS=Goat Scheme; VHC= Veterinary Health Care; RDIL= Regional Disease Investigation Laboratories; DDL=District Diagnostic Laboratories; MIF=Modern Infrastructural facilities; PZECC=Pusa Zero Energy Cool Chambers; SMM= Specialized Maize Mandi; OFD=On Farm development; CI=Cropping Intensity; SRR=Seed Replacement Ratio; FIAC= Farm Information Advisory Centres,; AEFOA&AF=Agriculture Extension Functionaries on Agriculture & Allied Sector Functionaries;

Appendix Table 7.10: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Natural resource management	Cereal production	8100 qtls	NA	NA	NA
	BT&WHS	Rs1,51,80,000/	NA	NA	NA
	Soil sample analyzed	7000 nos.	7000 nos. by NBSLUP	NA	NA
	Crop production	36-40 tons	NA	NA	NA
	Soil fertility map	NA	NA	preparation	NA
	High acidic soil	NA	NA	Make neutral for crop production	NA
	Water harvesting tanks	NA	NA	200 nos.	NA
	Bench terraced	NA	NA	253 ha	NA
	Minimum irrigation	NA	NA	30-40 ha	NA
	Training provides to	NA	NA	NA	Farmers
2. Horticulture	Seedlings	26,50,000 nos.	NA	NA	NA
	Fruit production	1600 MTS	NA	1.60 crores/annum	NA
	High tech green house	NA	NA	3 nos. 3090 sqm.	NA
	Farmers & planters	NA	NA	Benefited financially	NA
3. Animal husbandry	High pregnancy calf	Achieved	NA	NA	NA
	Milk yield	10ltr/cow	NA	Increase, farmers benefited	NA
	Piglets production	600-700 nos.	NA	7000nos./annum	NA
	Meat production	7200MT/annum	NA	4,90,000 kg/annum	NA
	Health of livestock	Improvement	NA	↑production, improve health	NA
	Mineral mixture provide	1.5kg/cow	NA	NA	NA
	Research report of pilot survey	2000 copies	NA	NA	NA
	Awareness programme	Arranged in project areas	NA	NA	NA
	Nucleus unit (govt. pig farm)	6 nos.	NA	NA	NA
	Satellite units	40 nos.	NA	NA	NA
	HYCBC	NA	NA	Providing	NA
	HBB to IGB	NA	NA	Distribution	NA
	Poultry growers	NA	NA	Benefited	NA
	Reproduction potential	NA	NA	Growth	NA
	Social status of farmers	NA	NA	Improve	NA
4. Dairy development	Cow shed	2 nos.	-do-	NA	NA
	Milk Parlor	1 no.	NA	NA	NA
	Manpower training	NA	Completed	NA	NA

	Procurement of equipment (Through SIMFED/SRF)	NA	For milk parlor	NA	NA
	HPFC to farmers	NA	NA	For sale	NA
	Male calf	NA	NA	For breeding purpose	NA
	Model dairy farm	NA	NA	For trainees	NA
	Automatic milking	NA	NA	Farmers to see	NA
5. Micro & minor irrigation	RCC water harvesting tank	1384 nos., 10,000 ltrs. cubic capacity	NA	NA	NA
6. Non farm activities	Processed ginger	600 MT/annum	NA	Better price	NA
	Canning	Baby corn & sweet corn	NA	Good price support	NA
7. Innovative programmes, tranning, capacity building & others	IFSFSA	2500 nos. farmers benefited	NA	Increase yield	NA
	Different component of Agriculture	NA	NA	Integration	NA
	Canning of Baby corn & sweet corn	2.5 lakh nos. tin	NA	2.68 crores nos. tin	NA
	Model villages	4 nos.	NA	Economic uplift	NA

Source: Same as Table 1;

Note: * remarks given in the parentheses information are not available; NA=Project information Not available; ↑ depicts increase/enhance and ↓ depicts decrease/reduce; BT&WHS=Bench Terracing & Water Harvesting Structures; HYCBC=High Yielding Cross Breed Cow; HBB=High Breeding Boar; IGB=Improve Germplasm Breed; HPFC High progeny female calf; IFSFSA=Integrated farming system for sustainable Agriculture;

Appendix Table 7.11: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Crop Development)	HYV Paddy	popularize	NA	↑	NA
	HYV Maize	popularize	NA	↑	NA
	Jhum Paddy	1200kg/ha	NA	↑	NA
	Pulse Production	↑	NA	↑	NA
	SRI covered	10000 ha	NA	18000 ha	NA
	Food grain Production	NA	NA	↑	NA
	Beneficiaries	37500 nos.	NA	NA	NA
2. Animal husbandry	Piggery	50 nos	NA	↑meat	NA
	Goatery	200 unit, 908 kids/year	NA	6MT meat/anum	NA
	Fodder Development	2000 farmers field	NA	↑1000 ha	NA
	Modern Houses	30 nos.	NA	↑	NA
	Vaccination/ camp	500 nos.	NA	↑	NA
	Egg production	16 lakh/year	NA	↑6 crore/anum	NA
	Meat production	↑	NA	↑	NA
	Chick production	25000/week	NA	↑	NA
	MBS	10 nos.	NA	↑	NA
	MBLBH	15 nos	NA	↑	NA
	Chaff cutter distribute	300 farmers	NA	300 farmers	NA
	Farmers Income	NA	NA	↑600 families	NA
	Nutritional security	NA	NA	.54 lakh people/50 eggs per head/year	NA
3. Horticulture	Pineapple production	1000 ha, ↑ 4000 MT	NA	Rs. 740 lakh/anum	NA
	Orange production	2250 MT/anum	NA	↑	NA
	Vegetable Production	↑506.5 ha, 11019 MT	NA	↑	NA
	Economic Conditions of jhum Cultivators	NA	NA	↑20%	NA
4. Marketing & PHM	Agriculture Marketing	NA	NA	Developed	NA
5. Micro & minor irrigation	Pumps	NA	NA	400 ha	NA

Source: same as table 1;

Appendix Table 7.12: Major Sector-Wise Expected, Actual Output and Outcome

Sector	Components	Out put		Outcome	
		Expected	Actual	Expected	Actual
1. Animal Husbandry	**Training institute**	Enhancing the net coverage area on HRD issues & max output of Expertise available	NA	Enhancing the net coverage area on HRD issues & max output of Expertise available	NA
	Veterinary hospitals	↑ in no. of small ruminants by 10% over next 5 yrs in the project area	Stage of construction	↑ in no. of small ruminants by 10% over next 5 yrs in the project area	Cure animals
	Animal Mortality	↓ by 60% in animal mortality	In various stages of construction	↓ by 60% in animal mortality	Help people in cure of animals
	Conception rate	↑10% in conception rate	NA	↑ Breed up gradation & ↑ milk production	NA
	Technical skills	↑Tech Skills of Veterinary Professionals	NA	↑Tech Skills of Veterinary Professionals	NA
	Diagnostic facility	advanced	NA	↑milk , Meat & Wool production	NA
	Milk production	NA	NA	↑	NA
	Meat production	NA	NA	↑	↑
	Wool Production	NA	NA	↑	↑
2. Natural resource management	**Land development**	NA	Initiate	NA	OFD 442 ha & additional irrigation in 20 ha
	Development of SCDC/PDC/shelter belt plantation	NA	Land developed, projects for landless labor	NA	Additional irrigation in 836 ha, shelter belt plantation in 601 ha.
	Lift Irrigation Project	↑irrigation area	NA	↑farmers income & CI	NA
	Management of Acid Soils	35,000 ha	NA	NA	NA
	Arhar Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	Maize Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	cotton Yield	↑by 50%	NA	↑up to 1ton/ha,	↑25% over average yield

				benefit 1 crore/annum	
	Groundnut Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	Vegetables Yield	↑by 50%	NA	↑up to 1ton/ha, benefit 1 crore/annum	↑25% over average yield
	Soil health	Improve, ↑pH up to 0.5 units	NA	Improvement	NA
	Supply of PMS	3500 ha	Supply of 8035 MT cover 3214 ha	NA	NA
	Managing acid soils for boosting Agri. Productivity	200000 ha acid soil ameliorated	Supply of 99393 MT of PMS & area treated 397572 Ha	↑yield by 50%	↑yield of non paddy crops by 34% over average yield
	Management of Acid Soils	NA	69200 Ha, applying 17300 MT of PMS	NA	↑yield of non paddy crops by 30% over average yield
	Supply of bagged phosphogypsum during 2011-12	165200 ha covered	NA	↑oilseed yield by 30%	NA
3. Fisheries	**Fish production**	500 MT/annum	-do-	-do-	-do-
	Fish culture	100 ha	NA	NA	NA
	Fish seed production	40 ha	↑	↑	↑
	Fish feed	2000 MT	↑	↑	↑
	Fish Ponds	90 ha	↑	↑	↑
	Self employment	40 farmers	↑	↑	↑
	Circular hatchery	500 lakh fish seed	↑	↑	↑
	Beneficiaries	3000fishrman	↑	↑	↑
4. Horticulture	**Govt. orchard and flowers nursery**	Strengthen	Strengthen 6 govt. garden & flower nurseries.	↑ seasonal & graphs	↑ production of quality plants, enhance employment generation & farm income
	Onion Production with the introduction of improved/hybrid varieties	↑ 1760 ha	↑1760 ha, benefiting 6500 farmers	↑APY of onion, employment generation & farm income	↑ Production & farm income
	Production and supply of Mushroom spawn	Strengthen spawn lab	NA	↑ availability of quality spawn	NA
	Development of Nutrient management Option	Development of pond	NA	Germplasm & management component for sub-mergence-prone rice system	NA

	Development of quality planting material, nursery and training programme	Medicinal plantation 30.20 ha, training to 1200 farmer	NA	Additional medicinal plantation 30.20 ha, training to 1200 farmer	NA
	Cultivation of Aromatic plants	↑ income of farm	Strengthen medicinal plant processing unit	↑ aromatic plant cultivation	↑ income of farm
	Development of horticulture sector	Seminar on 71district, 18 division & 5 State, Strengthen 17 nurseries	-do-	Focus on increasing production &productivity	Up gradation Skill & knowledge on marketing linkages & quality planting materials
	Govt. Gardens Flower & Nurseries	Strengthen 17 garden nurseries	NA	NA	NA
	Integrated management of Plaster Moulds of Milky Mushroom	Strengthen Mushroom lab	NA	Validation of integrated management package of Milky Mushroom	NA
	Strengthening of nursery/seed farms/elite gardens	Strengthen 30 nurseries/seed farms & elite gardens	NA	↑ quality planting material production	NA
	Nursery seedling raising	Cover Capsicum 375 ha, Chili 1800 ha, Tomato 2500 ha & Cucurbits 1875 ha	NA	NA	NA
	Strengthening of Govt. nursery/seed farms	Strengthen 14 nursery/farms	↑ quality production of planting material	Available quality planting material	Farmers benefited by using planting material
	Production of high value vegetable crops	Area expansion with improved Horticulture Technology & promoted high value vegetable like capsicum, chilies, Tomato & cucurbits in 6040 ha	cultivation capsicum 1100 ha, chili 1440 ha, tomato 2000 ha & cucurbits-1500 ha	Will ↑ Production of Horticulture crops	↑ 6040 ha of high value vegetable & farmers income
	Participatory Vegetable Quality Seed Production	Produce vegetable foundation seed 600 qtl. 200 ha	Conduct 04 FIGs formed & seed production programme at 35 acre	Skill up gradation & FIG of vegetable seed production, benefiting	produced 185 qt quality seeds of vegetable pea & 15.0 qt Kheera

				3000 farmers	
	Onion Production with the introduction of improved varieties	↑ 1760 ha onion grown area, benefited 6500 farmers	-do-	↑ APY of onion, employment generation & farm income	-do-
	Production of high value vegetable crops	↑11500 ha capsicum, tomato, chili, cucurbits vegetable grown area, benefited 25000 farmers	Extension 6040 ha capsicum, cucurbits, chili in Kharif, rabi & jayad, chili & tomato	↑ APY of vegetables, employment generation & farm income	-do-
5. Marketing & post harvest management	**Strengthening of Marketing Infrastructure**	Minimize losses in open auction plat farm	Minimize losses of grains &admixture during the marketing	Enhance farmers income	-do-
	Provide plastic creates to improve the marketability of fruits and vegetables	↓ PHL of fruits & vegetables by up to 40%,ffrmers will get more income	↓ PHL of fruits & vegetables	Safe handling of horticulture product & ↓ PHL	NA
	Marketing Interventions for Promotion of Potato Cultivation	Improve in potato production & marketability	NA	Improve in area & productivity of potato & improve farmers income	NA
6. seed	**Seed treatment**	3500000 ha	3263036 ha	3229746 ha ↑germination % as well as disease / pest resistance resulted in ↑ productivity.	3263036 ha ↑germination % as well as disease / pest resistance resulted in ↑ productivity
	Hybrid maize seed	2, 28,844 qtls.	-do-	Expected incremental production by 49.44 qtls./ha	Achieved Incremental productivity of 22.79 qt/ha
	Seed production	320000 qtls.	420000qt	2% SRR Increased	-do-
	Seed distribution	316666 qttls.	-do-	2% SRR Increased	-do-
	HYV Seed distribution	211000 qtls	↑	↑	↑
	Incentive paddy & pulses	200000 qtls	NA	3% SRR Increased	2% SRR Increased ↑
	Soya bean	↑	↑	↑	↑
	Infrastructure facility	↑	-do-	↑ 592.20 qt	-do-

Source: RKVY, 2013

Note: NA=Project information/data not available; HYV=High Yield Verities; HGV=high genetic value;

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