

CONCURRENT EVALUATION OF RASHTRIYA KRISHI VIKAS YOJANA (RKVY) FOR 2016-17

[REPORT PART-II: STATE FINDINGS]



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1 ANDHRA PRADESH

Andhra Pradesh is in the south-east coastal part of India, with a total geographical area 162.97 lakh hectares. Agriculture & Allied Sectors is one of the key sectors in Andhra Pradesh economy, supporting about 62% of the population. Net sown area is 6448 thousand hectares in the state. The average size of land holdings in this state is 1.08 hectares which vary from 0.44 hectares for marginal farmers (less than 1 hectare) to 15.50 large farmers (10 hectares and above) (Agriculture Statistics 2016-17). Agriculture in Andhra Pradesh was estimated to have contributed around 27.8% in the total GSVA in 2016-2017 (Socio-economic Survey of Andhra Pradesh 2016-17). The principal crops are rice, jowar, bajra, maize, minor millet, pulses, oil seeds, sugarcane, cotton, chili pepper, mango, nuts, sunflower and tobacco.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Andhra Pradesh. The state was allotted with Rs. 228.35 crore under that scheme in 2016-17 among which Rs. 222.59 crore was released and 100% of it has been spent. In Andhra Pradesh, in 2016-17, highest number of projects is allocated to research among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 38 projects proposed with priority sectors being horticulture. In the medium-size category (cost 5 to 10 crore), highest number of projects are allocated for animal husbandry (5 projects). For large projects with cost 10 to 25 crore, priority areas are Organic Farming/ Bio-fertiliser, Sericulture, Crop development, horticulture and animal husbandry (one each). Agriculture mechanization, Organic Farming/ Bio-fertiliser and animal husbandry are given important sectors in the very large (cost > 25 crore) category¹. So small projects are dominated by research and horticulture and large projects are by animal husbandry, Organic Farming/ Bio-fertilizer and agriculture mechanization in 2016-17. In aggregate, up to the date the data was accessed, 119 projects are pointed out which needs funds from RKVY in 2016-17, among which animal husbandry (89 crore) and horticulture (62 crore)

¹ Projects with cost up to 1 crore are referred to here as very small size projects, projects with cost between 1 crore to 5 crore as small size projects, projects with cost between 5 crore to 10 crore as medium size projects, projects with cost between 10 crore to 25 crore as large projects and projects with cost more than 25 crore as very large projects.

are given highest priority in terms of cost, while in terms of number of projects, research (27) and horticulture (26) are given priority. To sum up, a number of research projects are proposed but they are mainly small-sized projects. Project with highest average cost is proposed for Organic Farming / Bio Fertilizer. Figure 1-1 shows allocation, release and expenditure in RKVY in Andhra Pradesh over the years 2007-08 to 2015-16.

1.1 RESULTS FROM PRIMARY SURVEY

1.1.1 RESULTS FROM HOUSEHOLD SURVEY

This study analyses performance of RKVY for the year 2016-17 in Andhra Pradesh by collecting primary information from households dependent on agriculture and allied activities covering 11 projects under RKVY (Table 1-1). In this study, both beneficiary and non-beneficiary households are surveyed to see the impact of RKVY interventions on farm households. Total 450 sample households were surveyed in Andhra Pradesh, out of which 360 households belong to the beneficiary group. Information was collected on households' characteristics, income and expenditure, interventions of RKVY and their benefits, and problems related to implementation of RKVY and suggestions.

1.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

The households are categorized based on their operated area of land. Among them, the households who do not have any operated area of land are called landless farmers. Households, whose operated area is less than 2.5 acre, are called marginal farmers. Households, whose operated area is between 2.5 to 5 acres, are called small farmers. Households, whose operated area is 5 to 10 acres, are called medium farmers. Households, whose operated area is more than 10 acres, are called large farmers. Majority of farmers in our sample are marginal farmers, as is reflected from Table 1-2.

In our sample, 60% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 31% of them are small farmers (operated area 2.5 to 5 acres), 7% is medium (operated area 5 to 10 acres) and 2% in large farmers (operated area more than 10 acres). In the

non-beneficiary households, 67% are marginal, 30% are small, 2% are medium and 1% are large farmers.

In our sample in Andhra Pradesh, for Kharif 2016-17, the average area of owned land is higher for the marginal category of land-holding among the beneficiary households as compared to non-beneficiary households. For rest of the categories, non-beneficiary has more amount of land. Marginal, small and medium farmers from both beneficiary and non-beneficiary households operate in the leased-in land. For marginal and small farmers, non-beneficiary households operate in more leased in land. In Kharif season, there are many sources of irrigation: canal, tube wells (electric and diesel), tank, wells etc. All of them are used in Kharif season both by beneficiary and non-beneficiary households. But in Rabi season, majority of the farmers depend on tube wells for irrigation. This may be reason for that almost all of the households own tube wells. The details of the land-holding and irrigation facilities are described in Table 1-3A, Table 1-3B, Table 1-3C, and Table 1-3D.

1.1.1.2 DEMOGRAPHY OF SAMPLE HOUSEHOLDS

In our sample in Andhra Pradesh, a total of 360 households are beneficiaries and 90 are non-beneficiaries. Total number of the population covered is 1710, among them, 1368 people belong to beneficiary households and 342 people belong to non-beneficiary households. Among them in beneficiary households, 16% of the population is below 15 age-group, while 12 percent are in above 60 age-group. Rest 72% population in beneficiary households is in working age-group. In non-beneficiary households also, 16% of the population is below 15 age-group, while 12 percent are in above 60 age-group. Taking both the groups into consideration, 72% population is in working-age. In the education front, 2% of the population is illiterate. Around 77% population in both beneficiary and non-beneficiary households have attended school (class 1 to 12); while 18% population in beneficiary households and 19% population in non-beneficiary households have studied beyond class12. Major occupation is cultivation, while some members of the households are engaged in horticulture. (Table 1-4)

1.1.1.3 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

Average earning of the beneficiary households is higher as compared to non-beneficiaries for households. Same is true for households who are engaged in cultivation (Table 1-5). This proves the positive outcome from the intervention of RKVY program for agrarian households in Andhra Pradesh. Beneficiary households also earn a significant amount from horticulture.

In the sample of our study, 38% of the beneficiary households have reported income from farming. For non-beneficiary households, 39% of households have reported farming as an occupation. 8% of beneficiary households have reported income from horticulture while for non-beneficiary households, 9% reported income from them (Table 1-6).

Average annual income of the sample beneficiary households in aggregate is Rs. 114365 in Andhra Pradesh while the same for non-beneficiary households is Rs. 126301 in 2016-17 (Table 1-7). Average annual income for beneficiary households was Rs. 109261 in 2015-16 while it was Rs. 119845 for non-beneficiary households in the same year. This shows that there is an increase in income of beneficiary households in the current year. Major sources of income are farming, horticulture, dairy, poultry, sericulture, agriculture labour work, casual labour work apart from salary. For farming, the average income of non-beneficiary households is higher than beneficiaries; so is the average cost. Average income from horticulture is higher for non-beneficiary households. Average cost on horticulture is also higher for non-beneficiary households.

Table 1-8 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, the average income of beneficiary households is Rs. 127107 which is lower than non-beneficiaries (Rs. 133992); so is the average cost (Rs. 50843 and Rs. 53597 respectively).

In terms of percentage change in income (Table 1-9), average profit for farming has increased and for horticulture, it has decreased in Andhra Pradesh for beneficiary households in 2016-17 over the previous year. Average income has increased by 4% in farming for beneficiary households. However, the average cost has decreased by 22% for beneficiary households in farming.

1.1.1.4 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 1-10 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Expenditure on agriculture is higher for non-beneficiaries in 2016-17 as compared to beneficiaries. It is evident from the Table 1-10 that both for the beneficiary and non-beneficiary households, rent in the leased-in land is the major factor of the annual expenditure. Apart from that most of the households have reported expenditure as rent on agriculture machinery (tractor, harvester etc) (Rs. 34959 in 2016-17 for beneficiary and Rs. 39213 for non-beneficiary) and components that are clubbed in others (i.e. seed fertilizer etc.) (Rs. 24394 in 2016-17 for beneficiary and Rs. 33470 for non-beneficiary). Expenditure on purchased water for irrigation and electricity and diesel are other important components of agriculture expenditure. The component-wise analysis shows that rent on machinery (tractor, harvester etc) is higher for non-beneficiaries and so is the expenditure on purchased water for irrigation and electricity and diesel.

Table 1-11 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. Rent on machinery (tractor, harvester etc) has increased and expenditure on purchased water for irrigation for beneficiary households has decreased over this year.

In our sample, 11% of the beneficiary households, and 13% of non-beneficiary households have kaccha houses. 89% of beneficiary households and 85% of non-beneficiary households have pucca houses (Table 1-12). There is a disparity in ownership of different assets across different households (Table 1-13). Almost 100% of the beneficiary and non-beneficiary households possess TV. In the case of the mobilephone, almost 100% of both beneficiary and non-beneficiary households have reported to have it. Non-beneficiary households also have more two-wheelers and four wheelers. It can be said from the data on asset-ownership that asset-wise non-beneficiary households are more well-off.

1.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that households cultivated paddy, jowar, maize, ragi, tur, gram, sugarcane etc. in the majority of the cultivated area (Table 1-14 & Table 1-15). On an average,

beneficiary households used the more cultivated area for jowar, tur, gram etc. as compared to non-beneficiary households; while the situation is opposite for crops like paddy, maize, ragi etc. Average production of jowar, tur, gram and sugarcane are higher for beneficiary households as compared to non-beneficiaries. Paddy, maize, ragi production are higher for non-beneficiary households as compared to beneficiary households. There is not much difference in price of the marketed quantity of products is received by the beneficiary and non-beneficiary households. Profitability is higher for jowar, maize, ragi, tur, gram for beneficiary households, but it is lower for paddy. The details of crop-wise cultivated area, irrigated area, production, the price received, total paid-out cost and profitability are described in the following table.

A closer look says that average production of paddy is 10% lower for paddy, while paid-out cost is 18% lower for beneficiary households as compared to non-beneficiary households (Table 1-16). As a net result, the profitability of paddy is 8% lower for paddy for beneficiaries. For jowar, tur, gram and sugarcane; cultivated area, irrigated area as well as production and marketed quantity is comparatively higher for beneficiaries. The details of price received by different category of households are provided in Table 1-17 & Table 1-18.

1.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households have income from livestock. RKVY also provides support for the development of animal husbandry and livestock. Households have cow, buffalo, young stock etc. (Table 1-19A & 1-19B).

1.1.1.7 AWARENESS OF RKVY & ITS SOURCES

Regarding the awareness of RKVY, it is found that in our sample, 97% of non-beneficiary households are not aware of RKVY (Table 1-20). 99% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. This can be easily observed from the Table 1-20 that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is a basic requirement for the success of such government scheme.

In our sample in Andhra Pradesh, the majority of the beneficiary households had received information regarding RKVY from Agriculture / Horticulture Department, Friends and neighbours and agriculture exhibition (Table 1-21). For non-beneficiary households, 33% of the households received information from friends and neighbours. It is evident that for such government schemes to succeed, government departments and local bodies need to be active in disseminating the awareness regarding the program.

1.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural mechanization through RKVY. Beneficiaries have received support from RKVY program in buying tractor/ mini tractor, rotavator, tiller and other sowing and planting equipment (Table 1-22). The majority of them have received it through direct benefit transfer (Table 1-23). Beneficiaries have reported that these implements have helped in solving labour problems. 21% of the cost of the tractor/ mini tractor (average) is provided by RKVY in Andhra Pradesh, while for rotavator, it is 41%; for the tiller, it is 46%; for a cultivator, it is 42%, for other sowing and planting equipment, it is 19%.

In Andhra Pradesh, 89% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 1-24). The share is less for marginal farmers, both for the beneficiary and non-beneficiary households. Among them, 87% of the households are provided with soil health card.

1.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Andhra Pradesh. The state was allotted with Rs. 228.35 crore under that scheme in 2016-17 among which Rs. 222.59 crore was released and 100% of it has been spent. In Andhra Pradesh, in 2016-17, highest number of projects are allocated to research among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 38 projects proposed with priority sectors being horticulture. In the medium-size category (cost 5 to 10 crore), highest number of projects are

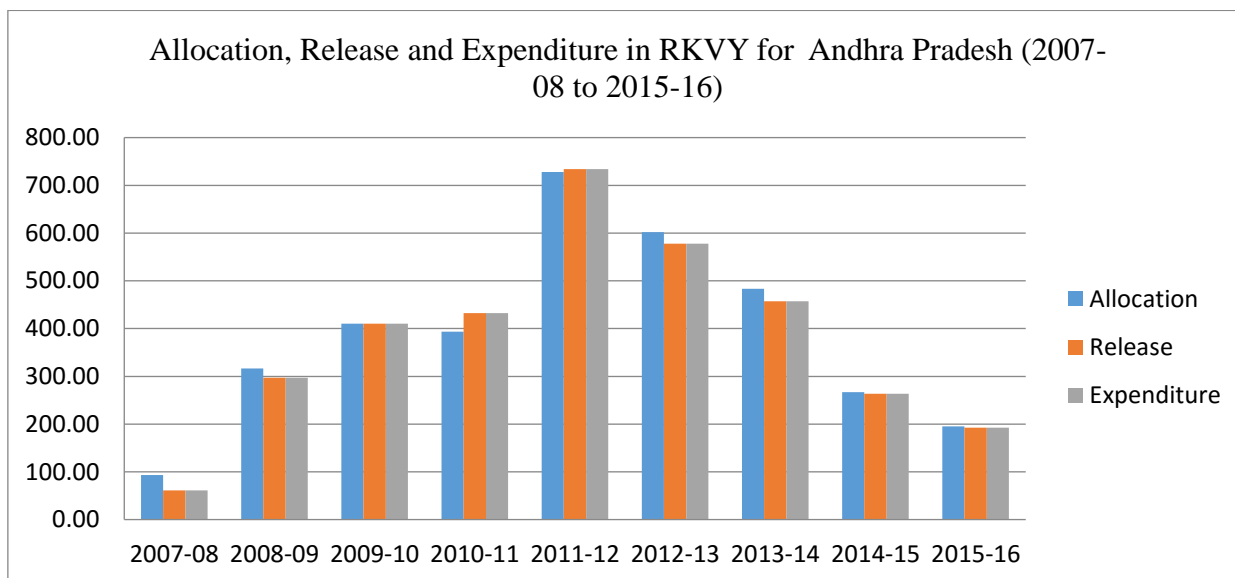
allocated for animal husbandry (5 projects). For large projects with cost 10 to 25 crore, priority areas are Organic Farming/ Bio-fertiliser, Sericulture, Crop development, horticulture and animal husbandry (one each). Agriculture mechanization, Organic Farming/ Bio-fertiliser and animal husbandry are given important sectors in the very large (cost > 25 crore) category. So small projects are dominated by research and horticulture and large projects are by animal husbandry, Organic Farming/ Bio-fertiliser and agriculture mechanization in 2016-17. In aggregate, upto the date the data was accessed, 119 projects are pointed out which needs funds from RKVY in 2016-17, among which animal husbandry (89 crore) and horticulture (62 crore) are given highest priority in terms of cost, while in terms of number of projects, research (27) and horticulture (26) are given priority. To sum up, a number of research projects are proposed but they are mainly small-sized projects. Project with highest average cost is proposed for Organic Farming / Bio Fertilizer.

In this study, both beneficiary and non-beneficiary households are surveyed to see the impact of RKVY interventions on farm households. Total number of the population covered is 1710, among them, 1368 people belong to beneficiary households and 342 people belong to non-beneficiary households. In our sample in Andhra Pradesh, a total of 360 households are beneficiaries and 90 are non-beneficiaries. Total number of the population covered is 1661, among them, 1340 people belong to beneficiary households and 321 people belong to non-beneficiary households. In our sample, 60% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 31% of them are small farmers (operated area 2.5 to 5 acres), 7% is medium (operated area 5 to 10 acres) and 2% in large farmers (operated area more than 10 acres). In the non-beneficiary households, 67% are marginal, 30% are small, 2% are medium and 1% are large farmers.

In our sample in Andhra Pradesh, for Kharif 2016-17, the average area of owned land is higher for the marginal category of land-holding among the beneficiary households as compared to non-beneficiary households. For rest of the categories, non-beneficiary has more amount of land. In the sample of our study, 38% of the beneficiary households have reported income from farming. For non-beneficiary households, 39% of households have reported farming as an occupation. 8% of beneficiary households have reported income from horticulture while for

non-beneficiary households, 9% reported income from that. Average annual income of the sample beneficiary households in aggregate is Rs. 11435 in Andhra Pradesh while the same for non-beneficiary households is Rs. 126301 in 2016-17. Average annual income for beneficiary households was Rs. 109261 in 2015-16 while it was Rs. 119845 for non-beneficiary households in the same year. This shows that there is an increase in income of beneficiary households in the current year. Expenditure on agriculture is higher for non-beneficiaries in 2016-17 as compared to beneficiaries. Households cultivated paddy, jowar, maize, ragi, tur, gram, sugarcane etc. in the majority of the cultivated area. On an average, beneficiary households used the more cultivated area for jowar, tur, gram etc. as compared to non-beneficiary households; while the situation is opposite for crops like paddy, maize, ragi etc. Average production of jowar, tur, gram and sugarcane are higher for beneficiary households as compared to non-beneficiaries. Paddy, maize, ragi production are higher for non-beneficiary households as compared to beneficiary households. There is not much difference in price of the marketed quantity of products is received by the beneficiary and non-beneficiary households. Profitability is higher for jowar, maize, ragi, tur, gram for beneficiary households, but it is lower for paddy. In our sample in Andhra Pradesh, the majority of the beneficiary households had received information regarding RKVY from Agriculture / Horticulture Department, Friends and neighbours and agriculture exhibition. Beneficiaries have received support from RKVY program in buying tractor/ mini tractor, rotavator, tiller and other sowing and planting equipment. The majority of them has received it through direct benefit transfer. Beneficiaries have reported that these implements have helped in solving labour problems. 21% of the cost of the tractor/ mini tractor (average) is provided by RKVY in Andhra Pradesh, while for rotavator, it is 41%; for the tiller, it is 46%; for a cultivator, it is 42%, for other sowing and planting equipment, it is 19%. For DBT in RKVY, number of days taken to receive subsidy varies from 48 days to 967 days. In our study, it is found that beneficiary households have cited the problems that they face most as: availability of information about RKVY programme details, contact details of the department, the number of documents required for availing subsidy are too many, Subsidy paid after purchase while initial payment remains the highest problem.

Figure 1-1: Allocation, Release and Expenditure in RKVY for Andhra Pradesh (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 1-1: List of RKVY projects surveyed in Andhra Pradesh

Project code	Name of the Selected projects
1	Breeder Seed Distribution
2	Rodent Control (Supply of Rodenticide to Farmers)
3	Establishment of Seed Processing and Storage Facilities including machinery and transport facility at field level
4	Sustaining farmer's Income through Integrated farming System
5	Area Expansion First Year
6	Permanent Pandals
7	Shade net House 1000 Sq. m with tubular structure
8	infrastructure Improvement : Construction of rearing sheds to bi-voltine farmers
9	Providing Subsidy for Bivoltine seed
10	Establishment of UHT packing station to pack in aseptic pouches with one month/ three months shelf life at Madanpalli in Chittor District
10	Establishment of BMC for Lavannamei at Bangarmmapeta, Vishakhapattanam District
11	Crop Diversification programme

Table 1-2: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless			
Marginal	215(60)	60(67)	275(61)
Small	112(31)	27(30)	139(31)
Medium	25(7)	2(2)	27(6)
Large	8(2)	1(1)	9(2)
Total	360(100)	90(100)	450(100)

Table 1-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif2016-17)

For Kharif 2016-17			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.73	3.73	6.39	13.44
Leased-in Land/share cropping				1.75	2.1	4.4	7
Leased-out Land/share cropping					2		
Total operated area (owned+LI-LO)				1.73	3.9	7.27	14.31
Irrigated Area by canal				14.5	16.2	17.6	34.1
Irrigated Area by tubewell	Rented	Electric		9.3	13.7	14.5	0
		Diesel		9	12.6	3.1	0
	Owned	Electric		15.5	15.1	18.1	24.8
		Diesel		18.8	12	16.5	0
Irrigated Area by Tanks				15.8	12.9	15.3	0
Irrigated Area by Wells				17.1	13.5	15	41.1
Irrigated Area by others				0	4.1	0	0

Table 1-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.60	4.05	7.50	15.00
Leased-in Land/share cropping				2.50	2.50	2.50	
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.61	4.14	8.75	15.00
Irrigated Area by canal				16.4	17.7	42.9	66.7
Irrigated Area by tubewell	Rented	Electric		6.7	16.4	0.0	0.0
		Diesel		19.1	13.1	0.0	0.0
	Owned	Electric		12.6	20.0	57.1	0.0
		Diesel		21.3	15.6	0.0	33.3
Irrigated Area by Tanks				11.6	0.0	0.0	0.0
Irrigated Area by Wells				12.3	17.2	0.0	0.0
Irrigated Area by others				0.0	0.0	0.0	0.0

Table 1-3C: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.73	3.73	6.39	13.44
Leased-in Land/share cropping				1.75	2.10	4.40	7.00
Leased-out Land/share cropping					2.00		
Total operated area (owned+LI-LO)				1.73	3.90	7.27	14.31
Irrigated Area by canal				0.0	0.0	20.3	24.4
Irrigated Area by tubewell	Rented	Electric		44.4	33.9	26.1	18.0
		Diesel		12.2	11.3	13.5	6.8
	Owned	Electric		43.3	36.7	28.7	36.9
		Diesel		0.0	18.1	11.4	13.9
Irrigated Area by Tanks				0.0	0.0	0.0	0.0
Irrigated Area by Wells				0.0	0.0	0.0	0.0
Irrigated Area by others				0.0	0.0	0.0	0.0

Table 1-3D: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.60	4.05	7.50	15.00
Leased-in Land/share cropping				2.50	2.50	2.50	
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.61	4.14	8.75	15.00
Irrigated Area by canal				0.0	24.8	0.0	0.0
Irrigated Area by tubewell	Rented	Electric		47.5	33.1	17.8	14.7
		Diesel		0.0	8.3	0.0	0.0
	Owned	Electric		52.5	33.8	60.0	38.8
		Diesel		0.0	0.0	22.2	46.5
Irrigated Area by Tanks				0.0	0.0	0.0	0.0
Irrigated Area by Wells				0.0	0.0	0.0	0.0
Irrigated Area by others				0.0	0.0	0.0	0.0

Table 1-4: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	16	16	16
	>15 to 25	17	17	17
	>25 to 40	26	27	26
	>40 to 59	29	28	29
	>59	12	12	12
	All Groups	100	100	100
Education	Illiterate	2	1	2
	Class 1 to 5	30	31	30
	Above Class 5 to 8	14	11	14
	Above Class 8 to 12	32	34	33
	Above Class 12	18	19	18
	Other diploma	1	1	1
	can read and write	0	0	0
	can read only	0	0	0
	can count only	1	0	1
	could not attend class 1	1	2	1
	All Groups	100	100	100

Table 1- 5: Earning from sample households

	Beneficiary	Non-Beneficiary	Total
cultivation	80849	79188	80519
agricultural labour	46667		40000
salaried employment	36000		36000
Horticulture	156990	135172	152197
Student	11544	6604	10644
housewife	26203	27340	26432
others (no separate income)	70000		61250
All Groups	52174	49232	51605

Table 1-6: Percentage distribution of households according to sources of income (2016-17)

	Beneficiary	Non-Beneficiary	Total
cultivation	38	39	38
salaried employment	1	0	1
Horticulture	8	9	8
Student	36	33	35
housewife	14	15	14
non-working	3	3	3
others	1	1	1

Table 1-7: Average income and cost of beneficiaries and non-beneficiaries (2016-17)

Source	Beneficiary			Non- Beneficiary		
	Average income	Average Cost	Average Profit	Average income	Average Cost	Average Profit
Farming	132146	39644	92502	138992	41698	97295
Horticulture	182383	73065	109318	215974	103107	112867
Floriculture		17588			17490	
Dairy	54609	17624	36985	57873	20404	37469
Poultry	55222	33500	21722	65000	70000	-5000
Sericulture	200000	100000	100000			
Agricultural Labour	22000	25000	-3000			
Casual Labour	30000	25000	5000	10000		
Bee-keeping	1250					
Salary	149000					
Other		77797			54786	
Total	114365	41078	73287	126301	47514	78786

Table 1-8: Average income and cost of beneficiaries and non-beneficiaries (2015-16)

Source	Beneficiary			Non- Beneficiary		
	Average income	Average Cost	Average Profit	Average income	Average Cost	Average Profit
Farming	127107	50843	76264	133992	53597	80395
Horticulture	173822	54996	118826	209607	49948	159659
Floriculture	3	19598	-19595	3	21600	-21597
Dairy	35019	9060	25959	40840	12294	28546
Poultry	99750	89667	10083	65000	35500	29500
Sericulture	200000	100000	100000			
Agricultural Labour	30000	2500	27500			
Bee-keeping	2000					
Salary	90000					
Other	45000			70000		
Total	109261	41140	68121	119845	43587	76258

Table 1-9: Change in Average income and cost of beneficiaries (2016-17)

Source	Average income	Average Cost	Average Profit
Farming	4	-22	21
Horticulture	5	33	-8
Floriculture	-100	-10	-100
Dairy	56	95	42
Poultry	-45	-63	115
Sericulture	0	0	0
Agricultural Labour	-27	900	-111
Bee-keeping	-38		
Salary	66		
Other	-100		
Total	5	0	8

Table 1-10: Annual average expenditure for agriculture (Rs.)

<i>items</i>	Average Expenditure on Agriculture			
	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	13188	14500	8750	3000
Total rent on machinery (tractor, harvester etc)	34959	39213	39025	42516
Expenditure on purchased water for irrigation	11467	13851	8936	10241
Expenditure on electricity for irrigation	8475	9486	9548	11137
Expenditure on diesel	9460	10964	11242	12468
Expenditure on other fuels for agriculture	6894	7557	4672	4853
Any other	24394	33470	20362	28867
<i>Total expenditure on agriculture</i>	108837	129042	102535	113082

Table 1-11: % increase in average expenditure on agriculture of beneficiary households in 2016-17 over 2015-16

<i>items</i>	% change in total expenditure from 2015-16
Rent on leased-in land	101
Total rent on machinery (tractor, harvester etc)	-11
Expenditure on purchased water for irrigation	-11
Expenditure on electricity for irrigation	4
Expenditure on diesel	-17
Expenditure on other fuels for agriculture	131
Any other	19
<i>Total expenditure on agriculture</i>	1

Table 1-12: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary
Kachha	11	13
Pucca	89	85
Semi-Pucca	0	1
Others	0	1
Total	100	100

Table 1-13: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes (%)	No (%)	Total (%)	Yes (%)	No (%)	Total (%)
TV	100	0	100	99	1	100
Telephone	2	98	100	5	95	100
Mobile phone	99	1	100	100	0	100
Cycle	40	60	100	43	57	100
Two wheeler	99	1	100	100	0	100
Four wheeler	6	94	100	10	90	100
Refrigerator	93	7	100	93	7	100

Table 1-14: Cropwise Profitability for beneficiaries (2016-17)

Crop	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (QTLs)	Marketed Quantity (QTLs)	Price received (per QTLs)	Total paid-out costs (Rs.)	Profitability
paddy	3.00	3.01	82.82	66.26	1386.44	21533.42	70332.39
jowar	0.77	0.77	6.75	6.07	1500.00	4868.33	4236.67
maize	2.93	2.93	64.82	62.87	1325.00	58658.28	24644.47
ragi	3.88	3.88	31.67	31.04	1100.00	19405.95	14738.05
tur	2.82	2.82	19.14	18.57	5000.00	53169.72	39680.28
gram	5.08	5.08	33.03	32.04	2500.00	10163.81	69936.19
sugarcane	3.58	3.58	1236.38	1112.75	250.00	236149.29	42038.21
fruit 1	1.32	1.32	270.86	261.85	1048.00	115226.00	159192.80
fruit 2	1.83	1.83	119.17	116.78	800.00	20166.67	73257.33
vegetable	2.01	2.03	177.05	159.53	867.31	59473.67	78887.92
spices 1	2.80	2.80	14.08	13.37	39380.95	235776.19	290747.14
flower 1	0.50	0.50	1.00	1.00	40000.00	25000.00	15000.00
others	2.75	2.75	17.29	17.04	5417.02	51252.66	41053.38

Table 1-15: Cropwise Profitability for non- beneficiaries (2016-17)

Crop	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (QTLs)	Marketed Quantity (QTLs)	Price received (per QTLs)	Total paid-out costs (Rs.)	Profitability
paddy	3.21	3.37	92.73	74.19	1383.16	26173.68	76442.80
jowar	0.75	0.75	6.60	5.94	1500.00	5750.00	3160.00
maize	3.19	3.19	70.59	68.47	1325.00	66947.37	23775.38
ragi	4.44	4.44	42.46	41.51	1125.00	30555.56	16143.19
tur	2.75	2.75	18.70	18.14	5000.00	59500.00	31200.00
gram	3.09	3.09	20.10	19.49	2500.00	7231.82	41493.18
sugarcane	3.39	3.39	1169.86	1052.88	250.00	226000.00	37220.00
fruit 1	1.17	1.17	176.00	169.67	1083.33	82000.00	101809.16
fruit 2	1.50	1.50	97.50	95.55	800.00	16500.00	59940.00
vegetable 1-1	1.99	1.99	179.16	161.43	847.22	63804.17	72962.92
spices 1	2.33	2.33	11.67	11.08	40000.00	198666.67	244533.33
flower 1	1.00	1.00	10.00	10.00	8000.00	30000.00	50000.00
others	2.33	2.33	8.73	8.64	6000.00	42555.56	9284.44

Table 1-16: Difference between Beneficiary and Non- Beneficiary (2016-17)

Crop	% Difference between Beneficiary and Non- Beneficiary						
	Cultivated Area	Irrigated Area	Production	Marketed Quantity	Price received	Total paid-out costs	Profitability
paddy	-6.76	-10.69	-10.69	-10.69	0.24	-17.73	-7.99
jowar	2.22	2.22	2.27	2.19	0.00	-15.33	34.07
maize	-8.17	-8.17	-8.17	-8.18	0.00	-12.38	3.66
ragi	-12.67	-12.67	-25.41	-25.22	-2.22	-36.49	-8.70
tur	2.36	2.36	2.35	2.37	0.00	-10.64	27.18
gram	64.37	64.37	64.33	64.39	0.00	40.54	68.55
sugarcane	5.69	5.69	5.69	5.69	0.00	4.49	12.95
fruit 1	13.42	13.42	53.90	54.33	-3.26	40.52	56.36
fruit 2	22.22	22.22	22.23	22.22	0.00	22.22	22.22
vegetable	1.42	2.39	-1.18	-1.18	2.37	-6.79	8.12
spices 1	20.15	20.15	20.65	20.67	-1.55	18.68	18.90
flower 1	-50.00	-50.00	-90.00	-90.00	400.00	-16.67	-70.00
others	17.74	17.74	98.05	97.22	-9.72	20.44	342.17

Table 1-17: Crop-wise price received by beneficiary and non-beneficiary households in 2016-

17

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1382	1390	1390	1390		1374	1390		1390
jowar		1500					1500			
maize		1325	1325	1325	1325		1325	1325	1325	1325
ragi		1100	1100	1100	1100		1100	1138	1100	
tur		5000	5000	5000			5000	5000		
gram		2500	2500	2500	2500		2500	2500		
sugarcane		250	250	250	250		250	250		

Table 1-18: Crop-wise price received by beneficiary and non-beneficiary households in 2015-

16

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1313	1321	1321	1321		1305	1321		1321
jowar		1425					1425			
maize		1259	1259	1259	1259		1259	1259	1259	1259
ragi		1045	1045	1045	1045		1045	1081	1045	
tur		4750	4750	4750			4750	4750		
gram		2375	2375	2375	2375		2375	2375		

Table 1-19A: Livestock ownership by beneficiary households (2016-17)

Livestock	Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0	13	22	32	33	100
Buffalo	0	13	24	29	34	100
Young Stock	0	13	23	33	31	100
Male Draught	0	0	0	0	100	100
Goat	0	40	60	0	0	100
Poultry	0	50	0	50	0	100

Table 1-19B: Livestock ownership by non-beneficiary households (2016-17)

Livestock	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0	19	33	38	10	100
Buffalo	0	8	46	15	31	100
Young Stock	0	17	38	31	14	100
Male Draught	0	100	0	0	0	100
Goat	0	0	100	0	0	100

Table 1-20: Awareness regarding RKVY (2016-17)

	Beneficiary			Non-Beneficiary		
	Yes	No	Total	Yes	No	Total
Have you heard about Rashtriya Krishi Vikas Yojana?	86	14	100	3	97	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	92	8	100	2	33	35
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	1	99	100	0	100	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	1	99	100	0	100	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	0	100	100	0	100	100

Table 1-21: Source of Awareness regarding RKVY (%) (2016-17)

Source	Beneficiary	Non-Beneficiary	Total
Friends & neighbors	16	33	16
News Paper	9	0	9
Agriculture / Horticulture Department	56	67	56
SAU	0	0	0
KVK	0	0	0
Input Suppliers	0	0	0
TV/ Radio	0	0	0
Agri. Exhibitions	15	0	15
ZP/GP	4	0	4
Other sources	0	0	0
Total	100	100	100

Table 1-22: Number of beneficiaries who bought the implements in 2016-17

Implements	Number of Beneficiaries
Tractor/mini tractor	13
Rotavator	63
Tiller	4
Cultivators	12
Other Sowing and Planting equipment	12

Table 1-23: Details of intervention in agriculture mechanization in Andhra Pradesh for beneficiaries

		Tractor/mini tractor	Rotavator	Tiller	Cultivators	Other Sowing and Planting equipment
No of beneficiaries of RKVY		13	63	4	12	12
Average Cost (Rs.)		471039	97092	136590	49931	28350
Average amount financed by loan (Rs.)		373578	57506	41670	28873	5317
Source of Credit (%)						
	Bank	100	100	75	83.3333	58.3333
	MFI	0	0	0	0	0
	Money lender	0	0	0	0	0
	Other	0	0	0	0	0
Average subsidy amount from RKVY (Rs.)		97462	39586	63125	21058	5317
Mode of Subsidy Transfer (%)						
	Price Subsidy	0	0	0	0	8
	DBT	100	100	75	83	92
If DBT, Number of days taken to receive a subsidy?		12	15	12	14	81
Benefits derived from the implement						
1	Solved labor problem	100	13	75	17	42
2	Enabled timely operations	0	3	25	0	58
3	Saved water	0	0	0	0	0
4	Helped in controlling weed	0	0	25	0	0
5	Helped in good plant growth	0	0	25	0	0
6	Reduced Drudgery	0	0	25	0	0
7	Helped in transportation	0	0	0	0	0
8	Reduced cost of Cultivation	0	0	25	0	0
9	Increased cropping intensity	0	0	0	0	0
10	Not useful	0	0	0	0	0

Table 1-24: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Whether the soil is tested in your area?			Soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless			0			0
Marginal	81	19	100	88	12	100
Small	100	0	100	87	13	100
Medium	100	0	100	76	24	100
Large	100	0	100	88	13	100
Total	89	11	100	87	13	100
Non-beneficiary						
Landless			0			0
Marginal	83	17	100	86	14	100
Small	100	0	100	89	11	100
Medium	100	0	100	100	0	100
Large	100	0	100	100	0	100
Total	89	11	100	88	13	100
Overall						
Landless			0			0
Marginal	82	18	100	88	12	100
Small	100	0	100	87	13	100
Medium	100	0	100	78	22	100
Large	100	0	100	89	11	100
Total	89	11	100	87	13	100

2 ARUNACHAL PRADESH

Arunachal Pradesh is situated in the north-eastern tip of India, surrounded by Bhutan, China and Myanmar. Geographic area of the state is 83743 sq. km., of which 67410 sq. km. is under forest cover (Census 2011). Agriculture sector is one of the important sectors in the economy. The share of agriculture is 30% in GSDP in 2015-16 (at 2011-12 constant prices) (CSO 2017). Total Cropped area was 296 thousand hectares while net sown area in Arunachal Pradesh was 225 thousand hectare in 2013-14. Major crops are rice, maize, millet, wheat, pulses, sugarcane, ginger and oilseeds.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Arunachal Pradesh. Under RKVY scheme, Rs. 23.82 Crore was allocated for Arunachal Pradesh during 2016-17, among which Rs. 11.92 Crore has been released until 31 July 2017. MIS report for the year 2016-17 shows that proposals for 16 projects were made in 2016-17 amounting to cost of Rs. 17.4 Crore for Arunachal Pradesh². Crop development has been given the highest priority in terms of number of projects as well as cost. Figure 2-1 shows allocation, release and expenditure in RKVY in AruThis study analyses performance of RKVY for the year 2016-17 in Arunachal Pradesh. We have selected one project for Arunachal Pradesh and analysed the performance of RKVY by collecting primary information. List of selected projects for Arunachal Pradesh is given below (Table 2-1).

2.1 RESULTS FROM PRIMARY SURVEY

2.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also

² MIS report for the year 2016-17 is not uploaded in RKVY website till 20th December, 2017.

asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Arunachal Pradesh, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, the majority of the beneficiary households (73% of beneficiary households) belong to marginal category and 28% are small farmers. In the non-beneficiary households, 100% are marginal farmers (Table 2-2).

2.1.1.1 LAND-HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households (Table 2-3A & Table 2-3B). We have collected separate data for land-holding for Kharif and Rabi season. For Rabi 2016-17 also, the average area of operated land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households (Table 2-4A & Table 2-4B). None of the households leased out land.

In our sample, a total of 40 households are beneficiaries and 10 are non-beneficiaries. A total number of the population covered is 213, among them, 166 people belong to beneficiary households and 47 people belong to non-beneficiary households (Table 2-5). Among them in beneficiary households, 14% of the population is in the below-15 age group, while 1 percent are in above-60 age group. Rest 84% population in beneficiary households is in the working age group. In non-beneficiary households, 23% of the population is in the below-15 age group, and no one above 60. This may be caused by small sample size for the state. Rest 77% population in non-beneficiary households is in the working age group. Taking both groups into consideration, 83% population is working-age. On the education front, 4% of the population in beneficiary group and 2% of non-beneficiary group is illiterate. 84% population in beneficiary households and 87% population in non-beneficiary households have attended school (class 1 to

12); while 13% population in beneficiary households and 9% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour, salaried employed or are self-employed. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 2-6)

2.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 63% of the beneficiary households have reported income from farming. For non-beneficiary households, 48% of households have reported farming as an occupation. Apart from farming, income is reported from dairy, sericulture, casual labour and salary. More households have reported income for non-beneficiary households from casual labour as compared to the beneficiary households (Table 2-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 111778 in Arunachal Pradesh while the same for non-beneficiary households is Rs. 62429 in 2016-17 (Table 2-8). Average annual income for beneficiary households was Rs. 103063 in 2015-16 while it was Rs. 56286 for non-beneficiary households in the same year (Table 2-9). This clearly shows that average income for beneficiary households is higher than non-beneficiary households, and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy apart from casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries in 2016-17; so is the average cost. Average income from salary is higher for non-beneficiary households (Table 2-8).

Table 2-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 103063 which is higher than non-beneficiaries (Rs. 56286); so is the average cost (Rs. 46000 and Rs. 26216 respectively).

In terms of percentage change in income (Table 2-10), average income has increased by 7% in farming for beneficiary and 11% for non-beneficiary households. However, the average cost has increased by same proportion both for beneficiary and non-beneficiary households in

farming (10%). Profitability has also increased for dairy for both beneficiary and non-beneficiary households.

2.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 2-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on electricity for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on Total rent on machinery (tractor, harvester etc) is higher for beneficiaries than non-beneficiaries, and for diesel and other fuels, non-beneficiary households did not report any expenditure.

Table 2-12 shows the percentage increase/ decrease in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in expenditure on diesel and other fuels for beneficiary households.

2.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

Ownership of agricultural implements is significantly low in our sample in Arunachal Pradesh. For beneficiary households, majority of implements like tractor, trolley, sprayers, leveller, fodder choppers are owned by small and medium farmers (Table 2-13A). In non-beneficiary households, only marginal farmers have reported owning equipment like sprayers and fodder chopper (Table 2-13B).

Marginal, small and medium farmers from beneficiary households have livestock, which comprises cow, buffalo, young stock, pig and poultry (Table 2-14A). Majority of livestock is owned by marginal farmers in beneficiary households.

In our sample, 15% of the households for beneficiary and none of non-beneficiary groups have pucca houses (Table 2-15). 83% of beneficiary households and 100% of non-beneficiary households have semi-pucca houses.

It is observed from our sample that 53% of beneficiary households possess TV while for non-beneficiaries, it is 40% (Table 2-16). In the case of mobile phones, 95% of beneficiary and 100% of non-beneficiary households have reported to possess it. Beneficiary households own bicycles, two-wheelers and refrigerators, while non-beneficiary households reported to own cycle, four-wheelers and refrigerators.

2.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, maize, gram, mustard, vegetables and spices in the majority of the cultivated area (Table 2-17). But for non-beneficiary households, the emphasis is on paddy, wheat and vegetables (Table 2-18). Average production of paddy is higher for beneficiary households (47 qtls) as compared to non-beneficiary households (31 qtls). Price of the marketed quantity for paddy are also more for the beneficiary household vis-à-vis non-beneficiary households, but for wheat both type of household received same price in 2016-17.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 2-19). For the crops like maize, for beneficiary households, marginal farmers are getting less prices as compared to small farmers (Table 2-19). For paddy, they are receiving almost same price. In 2015-16 also, it is seen that price received by marginal farmers is same for paddy as compared to farmers with larger land-holdings. For maize, marginal farmers received a higher price than small farmers.

2.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Arunachal Pradesh, it is seen that average income from livestock is lower for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, all income from livestock comes from milk and animal sale for beneficiary households and non-beneficiary households (Table 2-21).

The inter-temporal comparison shows that average income from the production of milk is higher for beneficiaries as compared to non-beneficiaries in both the years of 2016-17 and 2015-16. Income from animal sale is higher for non-beneficiaries in 2016-17 as compared to beneficiaries, but for 2015-16, the situation is opposite. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries (Table 2-22).

2.1.1.7 AWARENESS REGARDING THE RKVY

Regarding the awareness of RKVY, it is found that in our sample, none of non-beneficiary households is aware of RKVY, and 100% of beneficiary households have received benefits from the RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits throughout these years; 90% of beneficiary households and 78% of non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 80% of the beneficiary households and 80% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the last five years excluding 2016-17. This can be easily observed from the Table 2-23 that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Arunachal Pradesh, majority of the beneficiary households had received information regarding RKVY from Friends and neighbours and Agriculture / Horticulture Department and ZP/GP (Table 2-24). For non-beneficiary households, 80% of the households received information from friends and neighbours and 20% from Agriculture / Horticulture Department.

2.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop Development is an important component for overall development of agriculture. This section looks into the aspects of Crop Development through RKVY. Beneficiaries have received support from the RKVY in seed/ planting material in Arunachal Pradesh (Table 2-25). The majority of them have received it through DBT. Beneficiaries have reported that average number of days taken for paying DBT is around 150-170 days (Table 2-25). Under the project

“Brining Green Revolution to Eastern India “, assistance is provided for paddy and vegetables like cabbage, tomato chili, brinjal, capsicum etc. in villages like Tazang Lempiya, Hong, Hija, Nani, Nenchalyang, Hapoli, Reru, Mudang Tage, Thongree, Rupa etc.

In Arunachal Pradesh, 37.5% of the farmers in beneficiary group and 50% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil (Table 2-26A). Among them, 67% of beneficiary households and non-beneficiary households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 2-26B).

Within our sample in Arunachal Pradesh, 58% of beneficiary households had undergone training and demonstration (Table 2-27). 78% of the households found training beneficial and 91% want more training. In our study, 93% of beneficiary households use mobile phones, but only 21% receive agriculture-related text messages (Table 2-28).

2.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of the RKVY: information about it is not easily available, subsidy paid after purchase while initial payment remains the highest problem, delay in transfer, Lack of marketing support, Lack of monitoring etc. among others. For non-beneficiary households, major problems are capacity building/technical advice not provided, long time gap between the purchase and receiving the subsidy amount, information about RKVY not easily available, contact details of the department which pay subsidy not available, subsidy paid after purchase while initial payment remains the highest problem, delay in transfer, restricted choice and lack of marketing support (Table 2-29A & 2-29B).

Feedback from beneficiary respondents on the success of the RKVY suggests that it is successful in increasing production, providing financial assistance, employment generation, building infrastructure and capacity building, but not in post-harvesting storage or procurement (Table 2-30A & 2-30B).

2.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Arunachal Pradesh. Under RKVY scheme, Rs. 23.82 Crore was allocated for Arunachal Pradesh during 2016-17, among which Rs. 11.92 Crore has been released until 31 July 2017. MIS report for the year 2016-17 shows that proposals for 16 projects were made in 2016-17 amounting to cost of Rs. 17.4 Crore for Arunachal Pradesh. Crop development has been given the highest priority in terms of number of projects as well as cost. This study analyses performance of RKVY for the year 2016-17 in Arunachal Pradesh. We have selected one project for Arunachal Pradesh and analysed the performance of RKVY by collecting primary information.

In our sample in Arunachal Pradesh, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. In our sample, the majority of the beneficiary households (73% of beneficiary households) belong to marginal category and 28% are small farmers. In the non-beneficiary households, 100% are marginal farmers. In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households.

A total number of the population covered is 213, among them, 166 people belong to beneficiary households and 47 people belong to non-beneficiary households. Among them, in beneficiary households, 14% of the population is in below 15 age group, while 1 percent are in above 60 age group. Rest 84% population in beneficiary households is in working age group. In non-beneficiary households, 23% of the population is below 15 age groups, while no person is there in above 60 age group. This may be caused by small sample size for the state. Rest 77% population in non-beneficiary households is in working age group. Considering both the groups, 83% population is working age. On the education front, 4% of the population in beneficiary group and 2% of non-beneficiary group is illiterate. 84% population in beneficiary households and 87% population in non-beneficiary households have attended school (class 1 to 12); while 13% population in beneficiary households and 9% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the

households are casual labour, salaried employed or are self-employed. A major part of the population belongs to the category of 'student' or 'housewife'.

In the sample of our study, 63% of the beneficiary households have reported income from farming. For non-beneficiary households, 48% of households have reported farming as an occupation. Apart from farming, income is reported from dairy, sericulture, casual labour and salary. More households have reported income for non-beneficiary households from casual labour as compared to the beneficiary households.

The study shows that average income for beneficiary households in Arunachal Pradesh are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy apart from casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries in 2016-17; so is the average cost. Average income from salary is higher for non-beneficiary households.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on electricity for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under "other" category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on Total rent on machinery (tractor, harvester etc) is higher for beneficiaries than non-beneficiaries, and for diesel and other fuels, non-beneficiary households did not report any expenditure. It is evident that there is significant increase in expenditure on diesel and other fuels for beneficiary households.

Ownership of agricultural implements is significantly low in our sample in Arunachal Pradesh. For beneficiary households, majority of implements like tractor, trolley, sprayers, leveller, fodder choppers are owned by small and medium farmers. In non-beneficiary households, only marginal farmers have reported owning equipment like sprayers and fodder chopper.

Marginal, small and medium farmers from beneficiary households have livestock, which comprises cow, buffalo, young stock, pig and poultry. Majority of livestock is owned by marginal farmers in beneficiary households.

In our sample, 15% of the households for beneficiary and none of non-beneficiary groups have pucca houses. 83% of beneficiary households and 100% of non-beneficiary households have semi-pucca houses. It is observed from our sample that 53% of beneficiary households possess TV while for non-beneficiaries, it is 40%. In the case of mobile phones 95% of beneficiary and 100% of non-beneficiary households have reported to possess it. Beneficiary households own bicycles, two-wheelers and refrigerators, while non-beneficiary households reported owning cycles, four-wheelers and refrigerators.

It is seen from the sample that beneficiary households cultivated paddy, wheat, maize, gram, mustard, vegetables and spices in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy, wheat and vegetables. Average production of paddy is higher for beneficiary households (47 qtls) as compared to non-beneficiary households (31 qtls). Price of the marketed quantity for paddy are also more for the beneficiary household vis-à-vis non-beneficiary households, but for wheat both type of household received same price in 2016-17. For the crops like maize, for beneficiary households, marginal farmers are getting less prices as compared to small farmers. For paddy, they are receiving almost same price.

Apart from cultivation, the households earn income from livestock. In our sample for Arunachal Pradesh, it is seen that average income from livestock is lower for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, all income from livestock comes from milk and animal sale for beneficiary households and non-beneficiary households. The inter-temporal comparison shows that average income from the production of milk is higher for beneficiaries as compared to non-beneficiaries in both the years of 2016-17 and 2015-16. Income from animal sale is higher for non-beneficiaries in 2016-17 as compared to beneficiaries, but for 2015-16, the situation is opposite. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries.

Regarding the awareness of RKVY, it is found that in our sample, none of non-beneficiary households is aware of RKVY. 100% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits throughout these years. 90% of beneficiary households and 78% of non-beneficiary households have received some benefits from Government

Schemes other than RKVY in the year 2016-17. For the last five years, 80% of the beneficiary households and 80% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the last five years excluding 2016-17. Beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Arunachal Pradesh, majority of the beneficiary households had received information regarding RKVY from Friends and neighbours and Agriculture / Horticulture Department and ZP/GP. For non-beneficiary households, 80% of the households received information from friends and neighbours and 20% from Agriculture / Horticulture Department.

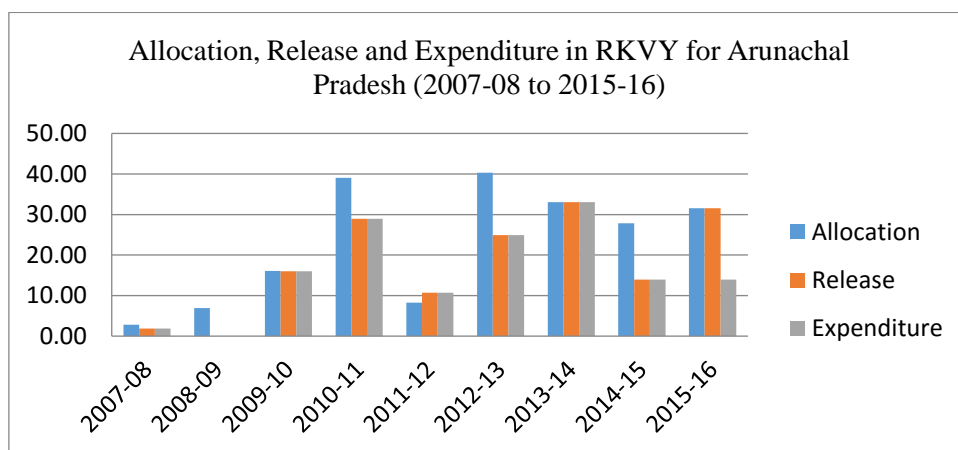
Crop Development is an important component for overall development of agriculture. This section looks into the aspects of Crop Development through RKVY. Beneficiaries have received support from the RKVY in seed/ planting material in Arunachal Pradesh. The majority of them have received it through DBT. Beneficiaries have reported that average number of days taken for paying DBT is around 150-170 days. Under the project “Brining Green Revolution to Eastern India “, assistance is provided for paddy and vegetables like cabbage, tomato chili, brinjal, capsicum etc. in villages like Tazang Lempiya, Hong, Hija, Nani, Nenchalyang, Hapoli, Reru, Mudang Tage, Thongree, Rupa etc.

In Arunachal Pradesh, 37.5% of the farmers in beneficiary group and 50% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil. Among them, 67% of beneficiary households and non-beneficiary households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Arunachal Pradesh, 58% of beneficiary households had undergone training and demonstration. Among them, 78% of the households found training beneficial and 91% want more training.

It is also found in our study that 93% of the beneficiary households have mobile phones. But only 21% of the beneficiary households receive text messages. Only 21% of the beneficiary households have reported to receive agriculture-related text messages.

In our study, it is found that beneficiary households have mentioned major problems related to the implementation of the RKVY: information about it is not easily available, Subsidy paid after purchase while initial payment remains the highest problem, delay in transfer, Lack of marketing support, Lack of monitoring etc. among others. For non-beneficiary households, major problems are: Capacity building/technical advice not provided, Long time gap between the purchase and receiving the subsidy amount, Information about RKVY programme details not easily available, Contact details of the department which pay subsidy not available, Subsidy paid after purchase while initial payment remains the highest problem, delay in transfer, restricted choice, Lack of marketing support etc. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in increasing production, providing financial assistance, employment generation, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in Post-harvesting storage, and procurement.

Figure 2-1: Allocation, Release and Expenditure in RKVY for Arunachal Pradesh (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 2-1: List of selected project name and code

Sl. No.	Name of the Project
1	Off-Season Cultivation Programme

Table 2-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	29(73)	10(100)	39(78)
Small	11(28)	0(0)	11(22)
Medium	0(0)	0(0)	0(0)
Large	0(0)	0(0)	0(0)
Total	40(100)	10(100)	50(100)

Table 2-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>	Beneficiary				
	Landle ss	Margin al	Small	Mediu m	Large
Owned land (acre)	-	1.7	3.3	-	-
Leased-in Land / share cropping (acre)	-	1.0	1.3	-	-
Leased-out Land / share cropping (acre)	-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)	-	1.8	3.7	-	-

Table 2-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>	Non-Beneficiary				
	Landle ss	Margin al	Small	Mediu m	Large
Owned land (acre)	-	1.3	-	-	-
Leased-in Land / share cropping (acre)	-	1.0	-	-	-
Leased-out Land / share cropping (acre)	-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)	-	1.4	-	-	-

Table 2-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>	Beneficiary				
	Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)	-	1.7	3.2	-	-
Leased-in Land / share cropping (acre)	-	1.0	1.3	-	-
Leased-out Land / share cropping (acre)	-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)	-	1.8	3.6	-	-

Table 2-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>	Non-Beneficiary				
	Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)	-	1.3	-	-	-
Leased-in Land / share cropping (acre)	-	1.0	-	-	-
Leased-out Land / share cropping (acre)	-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)	-	1.4	-	-	-

Table 2-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	14	23	16
	>15 to 25	34	32	34
	>25 to 40	26	23	25
	>40 to 59	24	21	23
	>59	1	0	1
	All Groups	100	100	100
Education	Illiterate	4	2	3
	Class 1 to 5	22	21	22
	Above Class 5 to 8	14	17	15
	Above Class 8 to 12	48	49	48
	Above Class 12	13	9	12
	Other diploma	0	0	0
	can read and write	0	2	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	0	0	0
	All Groups	100	100	100

Table 2-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	25	44	13
casual labour	4	17	6
self-employment	2	26	6
salaried employment	4	14	4
Student	37	0	49
housewife	23	0	21
non-working	5	0	0
All Groups	100	100	100

Table 2-7: Percentage distribution of households according to sources of income (2016-17)

Source	Beneficiary	Non-Beneficiary
Farming	63	48
Dairy	14	10
Sericulture	0	5
Casual Labour	11	29
Salary	11	10
Total	100	100

Table 2-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	140100	66650	73450	71200	35300	35900
Dairy	24667	13556	11111	21500	10000	11500
Sericulture	-	-	-	15000	5000	10000
Casual Labour	50571	-	50571	40833	-	40833
Salary	123143	12167	112714	148000	28000	120000
Other	-	41750	-	-	39000	-
Total	111778	50714	61063	62429	30611	31817

Table 2-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	130725	60700	70025	63900	32050	31850
Dairy	21000	11222	9778	19000	8000	11000
Sericulture	-	-	-	12000	4000	8000
Casual Labour	45000	-	45000	36333	-	36333
Salary	108571	11667	98571	137500	27500	110000
Other	-	37375	-	-	25650	-
Total	103063	46000	57063	56286	26216	30070

Table 2-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%)
(2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	7	10	5	11	10	13
Dairy	17	21	14	13	25	5
Sericulture	-	-	-	25	25	25
Casual Labour	12	-	12	12	-	12
Salary	13	4	14	8	2	9
Other	-	12	-	-	52	-

Table 2-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non- Beneficiary	Beneficiary	Non- Beneficiary
<i>Rent on leased-in land</i>	10400	8667	10400	8667
<i>Total rent on machinery (tractor, harvester etc)</i>	11015	6580	11340	6040
<i>Expenditure on diesel</i>	14333	0	13000	0
<i>Expenditure on other fuels for agriculture</i>	3333	0	2333	0
<i>Any other</i>	53055	31070	47048	27730
<i>Total expenditure on agriculture</i>	66695	40250	60838	36370

Table 2-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
<i>Rent on leased-in land</i>	0	0
<i>Total rent on machinery (tractor, harvester etc)</i>	-3	9
<i>Expenditure on diesel</i>	10	-
<i>Expenditure on other fuels for agriculture</i>	43	-
<i>Any other</i>	13	12
<i>Total expenditure on agriculture</i>	10	11

Table 2-13A: Asset ownership by beneficiary households (% of number of implements)
(2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	0	100	0	0
Trolley	0	0	100	0	0
Manual / Power Sprayers	0	70.3	29.7	0.0	0.0
Leveler	0	0.0	100.0	0.0	0.0
Fodder Choppers	0	64.3	35.7	0.0	0.0
Others	0	0.0	100.0	0.0	0.0

Table 2-13B: Asset ownership by non-beneficiary households (% of number of implements)
(2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Manual / Power Sprayers	0.0	100.0	0.0	0.0	0.0
Fodder Choppers	0.0	100.0	0.0	0.0	0.0

Table 2-14A: Livestock ownership by beneficiary households (2016-17)(% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0.0	12.1	87.9	0.0	0.0
Buffalo	0.0	100.0	0.0	0.0	0.0
Young Stock	0.0	66.7	33.3	0.0	0.0
Pig	0.0	60.0	40.0	0.0	0.0
Poultry	0.0	87.5	12.5	0.0	0.0

Table 2-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	3	0	2
Pucca	15	0	12
Semi-Pucca	83	100	86
Others	0	0	0
Total	100	100	100

Table 2-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	53	48	100	40	60	100
Telephone	0	100	100	0	100	100
Mobile phone	95	5	100	100	0	100
Cycle	18	83	100	10	90	100
Two wheeler	23	78	100	0	100	100
Four-wheeler	0	100	100	10	90	100
Refrigerator	3	98	100	10	90	100

Table 2-17: Crop-wise Profitability for Beneficiaries (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	2	0	47	39	1296	21972	28407
wheat	1	0	16	16	1700	12000	15200
maize	1	0	12	12	1143	6143	7082
gram	1	0	2	1	4000	3000	1800
mustard	1	0	2	2	3400	3000	3800
vegetable	1	0	65	65	810	21992	30416
spices	1	0	31	31	1983	22333	38158

Table 2-18: Crop-wise Profitability for Non-beneficiaries (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	1	0	31	22	1138	14188	11264
wheat	1	0	11	10	1700	8167	8267
vegetable	0.6	0.0	44.5	44.3	720.0	14583.3	17276.7

Table 2-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy	-	1296	1297	-	-	-	1138	-	-	-
wheat	-		1700	-	-	-	1700	-	-	-
maize	-	1133	1150	-	-	-	-	-	-	-
gram	-	4000	-	-	-	-	-	-	-	-
mustard	-	3400	-	-	-	-	-	-	-	-

Table 2-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy	-	1259	1259	-	-	-	1104	-	-	-
wheat	-	-	1650	-	-	-	1667	-	-	-
maize	-	1150	1075	-	-	-	-	-	-	-
gram	-	3700	-	-	-	-	-	-	-	-
mustard	-	3300	-	-	-	-	-	-	-	-

Table 2-21: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
<i>Items</i>	% of Total Income	Average Annual income (Rs.)	% of Total Income	Average Annual income (Rs.)
Milk	88	24667	86	21500
Animal Sale	12	6000	14	7000
TOTAL	100	18000	100	16667

Table 2-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	15	11	17	13
Animal Sale	-14	4	15	40
TOTAL	8	28	17	39

Table 2-23: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary		
	Yes	No	overall	Yes	No	overall
Have you heard about Rashtriya Krishi Vikas Yojana?	89	11	100	0	100	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	100	0	100	74	26	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	90	10	100	78	23	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	80	20	100	80	20	100

Table 2-24: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbours	38	80
News Paper	0	0
Agriculture / Horticulture Department	43	20
SAU	0	0
KVK	0	0
Input Suppliers	0	0
TV/ Radio	0	0
Agri. Exhibitions	0	0
ZP/GP	20	0
Other sources	0	0
Total	100	100

Table 2-25: Details of intervention in Crop Development programs in Arunachal Pradesh for beneficiaries

		Seeds / planting materials for crop1	Seeds / planting materials for crop2
No of beneficiary of RKVY		40	40
Average actual cost of these materials (Rs.)		4476	3065
Whether Material or Subsidy received from RKVY (%)			
	Material	0	0
	Subsidy	100	3
If Material, quantity supplied (Kg)		0	0
If subsidy, then	quantity of subsidized input (Kg) (average)	0	0
	Unit price (average)	924	1923
	Price paid by beneficiary (average)	51	34
	Market price (average)	112	154
	Amount of subsidy (average)	61	120
If Subsidy, Nature of subsidy (%)		0	0
	Price Subsidy	0	0
	DBT	100	3
If DBT, the total amount received as DBT (Rs.)		61	120
If DBT, average number of days taken to receive the amount in your bank account?		170	150
Area in acres		3	5

Table 2-26A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Whether soil is tested in your area?			Soil health card issued? (Who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless	-	-	-	-	-	-
Marginal	29.6	70.4	100	75.0	25.0	100
Small	60.0	40.0	100	50.0	50.0	100
Medium			100			100
Large	33.3	66.7	100	100.0	0.0	100
Total	37.5	62.5	100	66.7	33.3	100
Non-beneficiary						
Landless	-	-	-	-	-	-
Marginal	66.7	33.3	100	50.0	50.0	100
Small	42.9	57.1	100	100.0	0.0	100
Medium			100			100
Large			100			-
Total	50.0	50.0	100	66.7	33.3	100

Table 2-26B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless	-	-	-
Marginal	100	0	0
Small	100	0	0
Medium	-	-	-
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless	-	-	-
Marginal	100	0	0
Small	100	0	0
Medium	-	-	-
Large	-	-	-
Total	100	0	0

Table 2-27: Information regarding training and demonstration under RKVY (% of households) (2016-17)

			Type of training					
	Number of Beneficiaries	% of beneficiary households undergone training	Demonstration	Field Visit	Kris hi Mela	Others	% of households found training beneficial	% of households who want more training
Landless	-	-	-	-	-	-	-	-
Marginal	29	48	100	0	0	0	79	86
Small	11	82	100	0	0	0	78	100
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
Total	40	58	100	0	0	0	78	91

Table 2-28: Usage of mobile phone in receiving agriculture-related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	93	21	21	21	0
Marginal	100	82	82	82	0
Small	-	-	-	-	-
Medium	-	-	-	-	-
Large	95	38	38	38	0
Total	93	21	21	21	0

Table 2-29A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY not easily available	-	76	64	-	-	73
Contact details of the department which pay subsidy not available	-	34	0	-	-	25
Eligibility or criteria for availing the subsidy not known	-	10	9	-	-	10
Procedure for the subsidy very tedious	-	14	27	-	-	18
No of documents required for availing subsidy are too many	-	31	45	-	-	35
Subsidy paid after purchase while initial payment remains the highest problem	-	72	73	-	-	73
Delay in transfer	-	66	55	-	-	63
Prescribed machinery/asset not easily available in the market	-	7	0	-	-	5
Institutional financing facility not available	-	0	9	-	-	3
Capacity building/technical advice not provided	-	48	27	-	-	43
Long time gap between the purchase and receiving the subsidy amount	-	45	9	-	-	35
Biased towards large land owners	-	21	18	-	-	20
Poor quality of materials/machinery are supplied	-	31	18	-	-	28
Implementing agencies are located far away	-	31	36	-	-	33
Incidence of bribery	-	31	27	-	-	30
Lack of monitoring	-	52	73	-	-	58
Complementary inputs not available	-	45	55	-	-	48
Restricted Choice	-	59	55	-	-	58
Lack of marketing support	-	66	73	-	-	68
Any other	-	0	0	-	-	0

Table 2-29B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Lan dless	Mar ginal	Sma ll	Med ium	Larg e	Tota l
Information about the RKVY not easily available	-	80	-	-	-	80
Contact details of the department which pay subsidy not available	-	90	-	-	-	90
Eligibility or criteria for availing the subsidy not known	-	40	-	-	-	40
Procedure for the subsidy very tedious	-	50	-	-	-	50
No of documents required for availing subsidy are too many	-	60	-	-	-	60
Subsidy paid after purchase while initial payment remains the highest problem	-	90	-	-	-	90
Delay in transfer	-	70	-	-	-	70
Prescribed machinery/asset not easily available in the market	-	30	-	-	-	30
Institutional financing facility not available	-	20	-	-	-	20
Capacity building/technical advice not provided	-	100	-	-	-	100
Long time gap between the purchase and receiving the subsidy amount	-	80	-	-	-	80
Biased towards large land owners	-	30	-	-	-	30
Poor quality of materials/machinery are supplied	-	40	-	-	-	40
Implementing agencies are located far away	-	60	-	-	-	60
Incidence of bribery	-	60	-	-	-	60
Lack of monitoring	-	50	-	-	-	50
Complementary inputs not available	-	50	-	-	-	50
Restricted Choice	-	90	-	-	-	90
Lack of marketing support	-	70	-	-	-	70
Any other	-	0	-	-	-	0

Table 2-30A: Opinion of beneficiary households about RKVY (%)

	Employment generation		Increase in production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	-	-	-	-	-	-	-	-	-	-
Marginal	54	21	74	0	44	31	38	38	67	10
Small	73	27	100	0	45	55	45	55	100	0
Medium	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-
Total	58	22	80	0	44	36	40	42	74	8

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 2- 30B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	-	-	-	-	-	-	-	-
Marginal	51	23	41	31	46	26	0	0
Small	73	36	82	18	73	18	0	0
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
Total	56	26	50	28	40	24	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

3 ASSAM

Assam is a state in Eastern India with the geographic area of 78,438 Square kilometres (Assam Economic Survey 2016-17). Agriculture is a major source of livelihood in this state, with 98.4 percent of the total geographical area being rural. 70% of its population is directly dependent on agriculture as a source of livelihood. Net sown area is 2827 thousand hectares in the state. Share of agriculture and allied sector in GSDP is 19.37% in 2015-16. During the period 2011-12 to 2015-16, agriculture and allied sectors grew at a compound annual rate (CAGR) of 3.54 percent. The climate of Assam is humid, with a sub-tropical nature. Annual average rainfall is 2297.4 mm. Net irrigated area in Assam is 1.61 lakh hectare in 2010-11. Major agricultural products in Assam include rice, wheat, pulses, oilseeds etc.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Assam. From that year to 2014-15, the central government has provided 100% funding to the selected agro-based projects to improve the agriculture situation in Assam. In 2015-16, the assistance has been reduced to 60:40 percent for centre and state. Under this scheme, the central government has allocated Rs. 279.75 Crore for Assam in 2016-17, from which Rs. 210.45 Crore was released until 31 July 2017. UC received for expenditure of Rs. 115.78 Crore. In Assam, in 2016-17, highest number of projects are proposed for horticulture among the very small-sized projects (cost < 1 crore) (8 projects) and small size category (cost 1 to 5 crore) (11 projects). In the category small size category (cost 1 to 5 crore), there are 30 projects proposed. In the medium-size category (cost 5 to 10 crore), animal husbandry and Innovative Programmes/ Training/ Capacity Building/Others got priorities. For large projects with cost 10 to 25 crore, priority areas are seed and fisheries. Agriculture mechanization, Crop development, Innovative Programmes/ Training/ Capacity Building/Others and Seed are priority sectors in the very large (cost > 25 crore) category. In this category, Paddy development and others in Innovative Programmes/ Training/ Capacity Building/Others are the most important sub-sectors. So small projects are dominated by horticulture and large projects are by crop development and Innovative Programmes/ Training/ Capacity Building/Others in 2016-17. In aggregate, up to the date the data was accessed, 68 projects are pointed out which needs funds from RKVY in 2016-17, among which crop development, specially paddy is given highest priority in terms of cost, while in terms of number

of projects, horticulture are given priority. Figure 3-1 shows allocation, release and expenditure in RKVY in Assam over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Assam. We have selected 10% of the projects i.e. 3 projects for Assam and analysed the performance of RKVY by collecting primary information. List of selected projects for Assam is given in Table 3-1.

3.1 RESULTS FROM PRIMARY SURVEY

3.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of benefits to ultimate consumers and how it is benefitting cultivators.

In our sample in Assam, total 100 households are considered for the survey, among which 80 households are the beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample (Table 3- 2), the majority of the beneficiary households (44% of beneficiary households) are marginal farmers, 41% are small farmers, 10% are medium farmers and 5% belong to large category farmers. In the non-beneficiary households, 50% are marginal, 15% are small, 20% are medium farmers and 15% are large farmers.

3.1.1.1 LAND-HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of owned land is higher for marginal, small and medium categories (not considering landless) among the beneficiary households as compared to non-beneficiary households. Some of the beneficiary households possess leased-in land also while this is not present among non-beneficiaries. The cultivation in kharif season

is mainly done through tube-well, especially owned electric and diesel tube-well. Some farmers in the beneficiary category and some small farmers in non-beneficiary category depend on rented diesel tube-well for irrigation (Table 3-5).

We have collected separate data for land-holding and irrigation for Kharif and Rabi season. For Rabi 2016-17 also, the average area of owned land is higher for marginal, small and medium categories among the non-beneficiary households as compared to beneficiary households (Table 3-6). Cultivated area is more for kharif season as compared to rabi season, for all categories of farmers except medium category. Irrigation in Rabi season is also mainly done by tube-wells.

In our sample, a total of 80 households are beneficiaries and 20 are non-beneficiaries. A total number of the population covered is 513, among them, 404 people belong to beneficiary households and 109 people belong to non-beneficiary households (Table 3-7). Among them in beneficiary households, 30% of the population is below 15 age group, while 7 percent are in above 60 age group. Rest 63% population in beneficiary households is in working age group. In non-beneficiary households, 31% of the population is below 15 age groups, while 9 percent are in above 60 age group. Rest 60% population in beneficiary households is in working age group. Taking both groups into consideration, 61% population is in the working age group. On the education front, 14% of the population in beneficiary group, and 8% of non-beneficiary group is illiterate. 77% population in beneficiary households and 85% population in non-beneficiary households have attended school (class 1 to 12); while 6% population in both the groups (together) have studied beyond school. Major occupation is cultivation, apart from casual labour and salaried employment. A major part of the population belongs to the category of 'student' or 'housewife' or 'non-working' (Table 3- 8).

3.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

Households in our sample for the state generate income from farming, dairy, poultry, agriculture labour, casual labour and salary (Table 3-9). Average income of the beneficiary households is higher as compared to non-beneficiaries for households who are engaged in farming (Table 3-10). In the sample of our study, 59% of the beneficiary households have reported income from farming. For non-beneficiary households, 55% of households have reported farming as an

occupation. Percentage of households, who have reported income from casual labour as occupation, is higher for beneficiary as compared to non-beneficiary households. 5% of beneficiary households have reported income from dairy; while for non-beneficiary households, 15% reported income from them (Table 3-9).

Average annual income of the sample beneficiary households in aggregate is Rs. 157395 in Assam while the same for non-beneficiary households is Rs. 78834 in 2016-17 (Table 3-10). Average annual income for beneficiary households was Rs. 142693 in 2015-16 while it was Rs. 137667 for non-beneficiary households in the same year (Table 3-10). Major sources of income are farming, dairy, agriculture labour work, casual labour work apart from salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. For dairy, non-beneficiary households have to incur more cost.

Table 3-11 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, the average income of beneficiary households is Rs. 215125, which is higher than non-beneficiaries (Rs. 195833); so is the average cost (Rs. 92663 and Rs. 79833 respectively). For dairy, average income and cost both are higher for beneficiary households.

In terms of percentage change in income (Table 3-12), average income has increased by 16% in farming for beneficiary households. However, the average cost has also increased by 9% for beneficiary households in farming. There is a decrease in both income and cost in dairy for beneficiary households in Assam.

3.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 3-3 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. It is evident from the Table 3-13 that the rent on leased-in land is the major factor of the annual expenditure. Apart from that, the major part of the cost of the households consists of expenditure as rent on agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation and expenditure on diesel. The component-wise analysis shows that average expenditure on machinery (tractor, harvester etc)

and electricity for irrigation is higher for non-beneficiaries as compared to beneficiaries; while the situation is opposite for expenditure on purchased water for irrigation and diesel.

Table 3-14 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in all the components of expenditure for agriculture for beneficiary households. On the contrary, there is a decrease in expenditure on purchased water for irrigation, expenditure on diesel and other fuels for non-beneficiary households over this year.

3.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Assam, for beneficiary households, landless, marginal and small farmers own significant amount of agricultural implements like tractor, trolley, weeder, manual/ power sprayers, threshers, electrical pump set, diesel pump set, sprinkler set, fodder chopper, bullock cart etc.(Table 3-15).

Comparison of the beneficiary and non-beneficiary households shows that medium farmers from beneficiary households have more ownership of implements as compared to other categories of farmers in non-beneficiary households in our sample. Ownership of assets is skewed against the marginal farmers for non-beneficiary households (Table 3-16).

Marginal farmers from both beneficiary and non-beneficiary households have a significant proportion of ownership of livestock (Table 3-17 & Table 3-18). Large farmers in both the categories have less livestock.

In our sample, 18% of the households for beneficiary and 15% of non-beneficiary groups have kaccha houses (Table 3-19). It is also observed that 30% of the households have Pucca houses for non-beneficiary households, while only 20% beneficiaries have pucca houses. This may reflect the fact that RKVY beneficiaries mainly belonged to the poorer classes.

It is observed from our sample that 51% of beneficiary households possess TV; while for non-beneficiaries, it is higher (60%). In the case of mobile phones 94% of beneficiary households have reported to possess it, while for non-beneficiaries, it is 95%. Beneficiary households also have more bicycles, but non-beneficiary households have more two-wheelers (Table 3-20).

3.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, maize, gram, masur, mustard, jute & mesta, vegetables etc. in the majority of the cultivated area (Table 3-21). But for non-beneficiary households, the emphasis is on paddy, wheat, maize, mustard, jute & mesta, sugarcane, fruits and vegetables (Table 3-22). But, average production of paddy is higher for non-beneficiary as compared to beneficiary households. Price of the marketed quantity is more for paddy in the beneficiary household vis-à-vis non-beneficiary households. For wheat and mustard, non-beneficiary households are getting better price.

Disaggregated analysis shows that there is a difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 3-23). For the majority of the crops, marginal farmers are getting a higher or similar price as compared to other categories of farmers. This is evident from the Table 3-3 and Table 2-24 which show that higher price is obtained by the marginal farmers for crops like paddy, maize, mustard etc (for beneficiary households and non-beneficiary households) in 2016-17 but it is not true for 2015-16. In a comparison of the beneficiary and non-beneficiary marginal farmers, it can be said the average price received by the former is higher for paddy, and maize.

3.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Assam, it is seen that average income from livestock is lower for beneficiary households as compared to non-beneficiary households. Households, who have livestock, earn from mainly through milk, meat, egg and animal sale (Table 3-25).

Inter-temporal comparison (Table 3-26) shows that average income from the production of milk is higher for beneficiaries in 2016-17 and 2015-16. It can be observed from our sample that income from milk has increased in 2016-17 as compared to 2015-16 for both beneficiaries and non-beneficiaries.

Regarding the awareness of RKVY, it is found that in our sample, 20% of the non-beneficiary households are not aware of RKVY (Table 3-27)). 44% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits throughout these years. 31% of the beneficiary households and 25% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 78% of the beneficiary households and 35% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 3-27 that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Assam, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours and Agriculture / Horticulture Department (Table 3-28). For non-beneficiary households, information regarding RKVY came from friends and neighbours.

3.1.1.7 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

RKVY has contributed in crop development in Assam. It is found that crop seeds, micronutrients, bio-fertilizers and pesticides are made available through RKVY (

Table 3-29). Among the farmers, 50% received subsidy for kharif seed and 50% for Rabi seed. Majority of farmers received material subsidy. Under the project “Bringing Green Revolution to Eastern India”, farmers received subsidy for paddy and under the project “Cultivation of hybrid vegetable”, farmers received subsidy for producing vegetables like tomato, ladyfinger, okra, cucumber etc.

In Assam, 79% of the farmers among beneficiaries of the RKVY have reported that the soil has been tested to know the nature of the soil (Table 3-30). Among them, only 66% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 3-31).

Within our sample in Assam, 91% of beneficiary households had undergone training and 100% had undergone demonstration (Table 3-32). 97% of the households found training beneficial and want more training.

It is also found in our study that 96% of the beneficiary has mobile phones; among them 85% of beneficiary households receive text messages. Only 23% of the beneficiary households and none of the non-beneficiary households have reported to receive agriculture-related text messages (Table 3-33).

3.1.1.8 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that majority of beneficiary households have faced problems as: lack of monitoring, delay in transfer, Prescribed machinery/asset not easily available in the market, incidence of bribery etc. (Table 3-34)

. The problems are more or less similar for marginal and small farmers. Apart from these, non-beneficiary households face the problem in non-availability of complementary inputs, lack of information, too many documents required for availing subsidy, lack of capacity building/technical advice etc. (Table 3-35).

Feedback from beneficiary respondents on the success of the RKVY suggests that it has been successful in increasing production, providing financial assistance, building infrastructure,

capacity building and better price realization (Table 3-36 & Table 3-37), but not in generating employment or procurement.

3.1.2 IMPLEMENTING AGENCY

In Assam Agriculture Mechanization was the focus of inquiry, under which a construction project has been carried out. Although three projects were selected for our study in Assam, only this project belonged to the 'I&A' category. Implementing agency is the Office of the Chief Engineer, Agriculture, Assam. As reflected in Table 3-38, the demand for this project came from the district level. The major problem faced by the project was delayed release of funds (Table 3-39). Table 3-40 highlights the required physical capacity that the project aims to address and the contribution of the project in enhancing that. From the Table it can be seen that the project is ongoing and yet to realize the capacity envisaged. However, the vendors have been identified through tendering process for execution of the works under the project *Agriculture Mechanization*. Although the respondent opined that e-tendering improves the efficiency of the tendering process, e-tendering was not followed here. Both technical and financial criteria were used for evaluating the tenders (Table 3-41). The respondent expressed the view that the main beneficiaries of the project would be FPOs and SHGs. The respondent also suggested that complementary/ supplementary projects, such as development of cooperatives, FPOs and rural electrification, need to be taken up for the ongoing project (Table 3-42). Convergence of the project with mechanization projects related to other programs / schemes was also pointed out by the respondent (Table 3-43).

3.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Assam. From that year to 2014-15, the central government has provided 100% funding to the selected agro-based projects to improve the agriculture situation in Assam. In 2015-16, the assistance has been reduced to 60:40 percent for centre and state. Under this scheme, the central government has allocated Rs. 279.75 Crore for Assam in 2016-17, from which Rs. 210.45 Crore was released until 31 July 2017. UC received for expenditure of Rs. 115.78 Crore. In Assam, in 2016-17, highest number of projects are proposed for horticulture among the very small-sized projects (cost < 1 crore) (8 projects)

and small size category (cost 1 to 5 crore) (11 projects). In the category small size category (cost 1 to 5 crore), there are 30 projects proposed. In the medium-size category (cost 5 to 10 crore), animal husbandry and Innovative Programmes/ Training/ Capacity Building/Others got priorities. For large projects with cost 10 to 25 crore, priority areas are seed and fisheries. Agriculture mechanization, Crop development, Innovative Programmes/ Training/ Capacity Building/Others and Seed are priority sectors in the very large (cost > 25 crore) category. In this category, Paddy development and others in Innovative Programmes/ Training/ Capacity Building/Others are the most important sub-sectors. So small projects are dominated by horticulture and large projects are by crop development and Innovative Programmes/ Training/ Capacity Building/Others in 2016-17. In aggregate, up to the date the data was accessed, 68 projects are pointed out which needs funds from RKVY in 2016-17, among which crop development, specially paddy is given highest priority in terms of cost, while in terms of number of projects, horticulture are given priority.

This study analyses performance of RKVY for the year 2016-17 in Assam. We have selected 10% of the projects i.e. 3 projects for Assam and analysed the performance of RKVY by collecting primary information. The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of benefits to ultimate consumers and how it is benefitting the cultivators.

Majority of the beneficiary households (44% of beneficiary households) are marginal farmers, 41% are small farmers, 10% are medium farmers and 5% belong to large category farmers. In the non-beneficiary households, 50% are marginal, 15% are small, 20% are medium farmers and 15% are large farmers. In our sample, for Kharif 2016-17, the average area of owned land is higher for marginal, small and medium categories (not considering landless) among the beneficiary households as compared to non-beneficiary households. Some of the beneficiary households possess leased-in land also while this is not present among non-beneficiaries. The cultivation in kharif season is mainly done through tube-well, especially owned electric and

diesel tube-well. Some farmers in the beneficiary category and some small farmers in non-beneficiary category depend on rented diesel tube-well for irrigation.

A total number of the population covered is 513, among them, 404 people belong to beneficiary households and 109 people belong to non-beneficiary households. Among them in beneficiary households, 30% of the population is below 15 age group, while 7 percent are in above 60 age group. Rest 63% population in beneficiary households is in working age group. In non-beneficiary households, 31% of the population is below 15 age groups, while 9 percent are in above 60 age group. Rest 60% population in beneficiary households is in working age group. Taking both groups into consideration, 61% population is in the working age group. On the education front, 14% of the population in beneficiary group, and 8% of non-beneficiary group is illiterate. 77% population in beneficiary households and 85% population in non-beneficiary households have attended school (class 1 to 12); while 6% population in both the groups (together) have studied beyond school. Major occupation is cultivation, apart from casual labour and salaried employment. A major part of the population belongs to the category of 'student' or 'housewife' or 'non-working'.

Average income of the beneficiary households is higher as compared to non-beneficiaries for households who are engaged in farming. In the sample of our study, 59% of the beneficiary households have reported income from farming. For non-beneficiary households, 55% of households have reported farming as an occupation. Percentage of households, who have reported income from casual labour as occupation, is higher for beneficiary as compared to non-beneficiary households. 5% of beneficiary households have reported income from dairy, while for non-beneficiary households, 15% reported income from them.

Disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households shows that the rent on leased-in land is the major factor of the annual expenditure. Apart from that, the major part of the cost of the households consists of expenditure as rent on agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation and expenditure on diesel. The component-wise analysis shows that average expenditure on machinery (tractor, harvester etc) and electricity for irrigation is higher for non-

beneficiaries as compared to beneficiaries; while the situation is opposite for expenditure on purchased water for irrigation and diesel.

In our sample in Assam, for beneficiary households, landless, marginal and small farmers own significant amount of agricultural implements like tractor, trolley, weeder, manual/ power sprayers, threshers, electrical pump set, diesel pump set, sprinkler set, fodder chopper, bullock cart etc. Comparison of the beneficiary and non-beneficiary households shows that medium farmers from beneficiary households have more ownership of implements as compared to other categories of farmers in non-beneficiary households in our sample. Marginal farmers from both beneficiary and non-beneficiary households have a significant proportion of ownership of livestock. Large farmers in both the categories have less livestock.

In our sample, 18% of the households for beneficiary and 15% of non-beneficiary groups have kaccha houses. It is also observed that 30% of the households have Pucca houses for non-beneficiary households, while only 20% beneficiaries have pucca houses. This may reflect the fact that RKVY beneficiaries mainly belonged to the poorer classes.

It is observed from our sample that 51% of beneficiary households possess TV; while for non-beneficiaries, it is higher (60%). In the case of mobile phones 94% of beneficiary households have reported to possess it, while for non-beneficiaries, it is 95%. Beneficiary households also have more bicycles, but non-beneficiary households have more two-wheelers.

It is seen from the sample that beneficiary households cultivated paddy, wheat, maize, gram, masur, mustard, jute & mesta, vegetables etc. in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy, wheat, maize, mustard, jute & mesta, sugarcane, fruits and vegetables. But average production of paddy is higher for non-beneficiary as compared to beneficiary households. Price of the marketed quantity is more for paddy in the beneficiary household vis-à-vis non-beneficiary households. For wheat and mustard, non-beneficiary households are getting better price.

Disaggregated analysis shows that there is a difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For the majority of the crops, marginal farmers are getting a higher or similar price as compared to

other categories of farmers. Higher price is obtained by the marginal farmers for crops like paddy, maize, mustard etc (for beneficiary households and non-beneficiary households) in 2016-17 but it is not true for 2015-16. In a comparison of the beneficiary and non-beneficiary marginal farmers, it can be said the average price received by the former is higher for paddy, and maize.

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Assam, it is seen that average income from livestock is lower for beneficiary households as compared to non-beneficiary households. Households, who have livestock, earn from mainly through milk, meat, egg and animal sale.

Regarding the awareness of RKVY, it is found that in our sample, 20% of the non-beneficiary households are not aware of RKVY. 44% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits throughout these years. 31% of the beneficiary households and 25 of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 78% of the beneficiary households and 35% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. This can be easily observed that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Assam, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours and Agriculture / Horticulture Department. For non-beneficiary households, information regarding RKVY came from friends and neighbours.

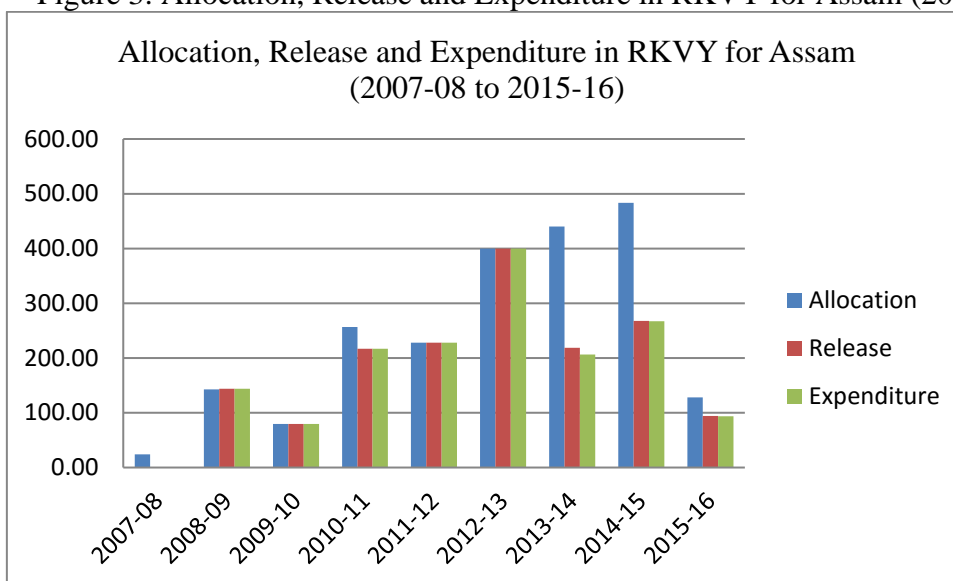
RKVY has contributed in crop development in Assam. It is found that crop seeds, micronutrients, bio-fertilizers and pesticides are made available through RKVY. Among the farmers, 50% received subsidy for kharif seed and 50% for Rabi seed. Majority of farmers received material subsidy. Under the project “Bringing Green Revolution to Eastern India”,

farmers received subsidy for paddy and under the project “Cultivation of hybrid vegetable”, farmers received subsidy for producing vegetables like tomato, ladyfinger, okra, cucumber etc. In Assam, 79% of the farmers among the beneficiaries of the RKVY have reported that the soil has been tested to know the nature of the soil. Among them, only 66% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Assam, 91% of beneficiary households had undergone training and 100% had undergone demonstration. 97% of the households found training beneficial and want more training.

In our study, it is found that majority of beneficiary households have faced problems as: lack of monitoring, delay in transfer, Prescribed machinery/asset not easily available in the market, incidence of bribery etc. The problems are more or less similar for marginal and small farmers. Apart from these, non-beneficiary households face the problem in non-availability of complementary inputs, lack of information, too many documents required for availing subsidy, lack of capacity building/technical advice etc.

According to the feedback from the beneficiary respondents about the success of the RKVY, it has been successful in increasing production, providing financial assistance, building infrastructure, capacity building and better price realization. However, it appears that RKVY has not been very successful in generating employment and procurement.

Figure 3: Allocation, Release and Expenditure in RKVY for Assam (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 3-1: List of selected project name and code

Project Code	Project Name
1	Agriculture Mechanization
2	Bringing Green Revolution to Eastern India
3	Cultivation of hybrid vegetable

Table 3- 2: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17) (No.) (% in parenthesis)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	35(44)	10(50)	45(45)
Small	33(41)	3(15)	36(36)
Medium	8(10)	4(20)	12(12)
Large	4(5)	3(15)	7(7)
Total	80(100)	20(100)	100(100)

Table 3- 3: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acres)			-	1.9	3.9	4.6	9.8
Leased-in Land/share cropping (acres)			-	2.0	3.5	4.4	48.5
Leased-out Land/share cropping (acres)			-	0.0	0.0	0.0	0.0
Operated area (owned+LI-LO) (acres)			-	2.1	4.3	7.4	34.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rented	Electric	-	27.4	26.4	0.0	0.0
		Diesel	-	15.4	23.3	30.0	0.0
	Owned	Electric	-	26.4	32.3	70.0	35.3
		Diesel	-	30.8	18.0	0.0	64.7
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			-	0.0	0.0	0.0	0.0
Total Irrigated Area (%)			-	1.9	3.9	4.6	9.8

Table 3- 4: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landle ss	Marginal	Small	Medium	Large
Owned land (acres)			-	1.7	2.8	5.0	2.0
Leased-in Land/share cropping (acres)			-	2.5	2.0	10.0	15.0
Leased-out Land/share cropping (acres)			-				
Operated area (owned+LI- LO) (acres)			-	2.1	3.5	10.0	17.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rent ed	Electri c	-	0.0	0.0	0.0	0.0
		Diesel	-	33.3	0.0	0.0	0.0
	Ow ned	Electri c	-	33.3	55.6	30.5	100.0
		Diesel	-	0.0	44.4	7.2	0.0
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			-	33.3	0.0	62.3	0.0
Total Irrigated Area (%)			-	1.7	2.8	5.0	2.0

Table 3-5: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land			-	1.6	3.3	3.9	9.8
Leased-in Land/share cropping			-	0.0	1.8	4.4	40.5
Leased-out Land/share cropping			-	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO)			-	1.6	3.3	6.7	30.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rented	Electric	-	16.6	13.6	0.0	0.0
		Diesel	-	19.3	20.3	32.2	0.0
	Owned	Electric	-	26.8	43.2	67.8	35.3
		Diesel	-	37.3	22.9	0.0	64.7
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			-	0.0	0.0	0.0	0.0
Total Irrigated Area (%)			-	1.6	3.3	3.9	9.8

Table 3-6: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land			-	1.3	2.2	3.6	2.0
Leased-in Land/share cropping			-	1.0	2.0	7.0	13.0
Leased-out Land/share cropping			-	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO)			-	1.3	2.8	5.4	15.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rented	Electric	-	0.0	0.0	0.0	0.0
		Diesel	-	35.7	0.0	5.9	0.0
	Owned	Electric	-	64.3	47.8	76.5	100.0
		Diesel	-	0.0	52.2	17.6	0.0
Irrigated Area by Tanks			-	0.0	0.0	0.0	0.0
Irrigated Area by Wells			-	0.0	0.0	0.0	0.0
Irrigated Area by others			-	0.0	0.0	0.0	0.0
Total Irrigated Area (%)			-	1.3	2.2	3.6	2.0

Table 3- 7: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Total Sample Population		404	109	513
%f dependent members		67	70	67
Age group	<=15	30	31	31
	>15 to 25	17	15	17
	>25 to 40	28	30	28
	>40 to 59	17	15	17
	>59	7	9	8
	All Groups	100	100	100
Education	Illiterate	14	8	13
	Class 1 to 5	24	26	24
	Above Class 5 to 8	16	17	16
	Above Class 8 to 12	37	39	38
	Above Class 12	5	8	6
	Other diploma	0	0	0
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	2	3	3
	All Groups	100	100	100

Table 3- 8: Occupational distribution of household members in the sample households (%)

		Beneficiary	Non-Beneficiary	Total
Occupation	1 cultivation	25	82	22
	2 agricultural labour	0	0	0
	3 dairy	0	0	0
	4 casual labour	5	1	2
	5 self-employment	0	3	1
	6 salaried employment	2	14	6
	7 forestry	0	0	0
	8 Horticulture	0	0	0
	9 Floriculture	0	0	0
	10 Sericulture	0	0	0
	11 Fishing	0	0	0
	12 Aquaculture	0	0	0
	13 Poultry	0	0	0
	14 beekeeping	0	0	0
	15 Student	30	0	33
	16 housewife	23	0	24
	17 non-working	13	0	13
	others (no separate income)	0	0	0
	All Groups	100	100	100

Table 3-9: Percentage distribution of households according to sources of income (2016-17)

Source	Beneficiary (%)	Non-Beneficiary (%)
Farming	59	55
Dairy	5	15
Poultry	7	3
Agricultural Labour	1	0
Casual Labour	14	9
Salary	5	15
Other	8	3
Total	100	100

Table 3-10: Average income and cost of beneficiaries and non-beneficiaries (2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)
Farming	236700	103738	132963	214722	88222	126500
Dairy	46429	19429	27000	48000	18600	29400
Poultry	17256	5744	11511	8500	2000	6500
Agricultural Labour	12500		12500			
Casual Labour	44053		44053	26667		26667
Salary	92286	14000	82286	147000	13750	136000
Other	29455	12778	19000	150000	50000	100000
Total	157395	78834	78561	153894	61655	92239

Table 3-11: Average income and cost of beneficiaries and non-beneficiaries (2015-16)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	215125	92663	122463	195833	79833	116000
Dairy	32286	12857	19429	31000	12800	18200
Poultry	13978	4428	9550	8000	1500	6500
Agricultural Labour	9000		9000			
Casual Labour	40000		40000	21667		21667
Salary	80286	13000	72857	132000	11000	123200
Other	21900	10250	13700	130000	40000	90000
Total	142693	71082	71611	137667	54707	82960

Table 3-12: Change in Average income and cost of beneficiaries (2016-17)

<i>Source</i>	Beneficiary		
	Average Income	Cost	Average Profit
Farming	16	9	9
Dairy	-60	-56	39
Poultry	-100	-100	21
Agricultural Labour	-100		39
Casual Labour	-69		10
Salary	-1	-82	13
Other	-81	1	39

Table 3-13: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
<i>items</i>	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.
Rent on leased-in land	30923	39167	30923	39167
Total rent on machinery (tractor, harvester etc)	9110	10428	8457	9894
Expenditure on purchased water for irrigation	3963	1750	3763	2000
Expenditure on electricity for irrigation	6769	7636	6425	7421
Expenditure on diesel	21993	5500	20227	5833
Expenditure on other fuels for agriculture	1821	560	1503	600
Any other	78525	56111	68431	48172
<i>Total expenditure on agriculture</i>	103678	78295	92222	70630

Table 3-14: % increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non Beneficiary
Rent on leased-in land	0	0
Total rent on machinery (tractor, harvester etc)	8	5
Expenditure on purchased water for irrigation	5	-13
Expenditure on electricity for irrigation	5	3
Expenditure on diesel	9	-6
Expenditure on other fuels for agriculture	21	-7
Any other	15	16
<i>Total expenditure on agriculture</i>	12	11

Table 3-15: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary					
	Landle ss	Margi nal	Small	Mediu m	Large	Total
Tractor		0.0	25.0	25.0	50.0	100
Trolley		0.0	33.3	0.0	66.7	100
Weeder		27.3	45.5	18.2	9.1	100
Manual / Power Sprayers		30.2	46.5	14.0	9.3	100
Threshers		0.0	50.0	0.0	50.0	100
Electrical Pump sets		40.0	43.1	10.8	6.2	100
Diesel Pump sets		27.8	50.0	5.6	16.7	100
Sprinkler sets / Drip Irrigation Equipment		0.0	100.0	0.0	0.0	100
Fodder Choppers		40.7	45.8	8.5	5.1	100
Bullock cart		37.5	50.0	12.5	0.0	100
Others		0.0	100.0	0.0	0.0	100

Table 3-16: Asset ownership by non-beneficiary households (206-17)

Assets (% of number of equipment)	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Weeder	-	0.0	33.3	66.7	0.0	100
Manual / Power Sprayers	-	0.0	33.3	66.7	0.0	100
Electrical Pump sets	-	50.0	14.3	28.6	7.1	100
Diesel Pump sets	-	0.0	50.0	50.0	0.0	100
Fodder Choppers	-	46.7	20.0	26.7	6.7	100
Bullock cart	-	0.0	0.0	100.0	0.0	100
Others	-	0.0	0.0	100.0	0.0	100

Table 3-17: Livestock ownership by beneficiary households (2016-17) (% number of livestock)

Livestock	Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	-	43.9	40.4	10.5	5.3	100
Buffalo	-	20.0	80.0	0.0	0.0	100
Young Stock	-	41.7	44.4	8.3	5.6	100
Male Draught	-	25.0	66.7	8.3	0.0	100
Goat	-	37.5	50.0	0.0	12.5	
Pig	-	33.3	66.7	0.0	0.0	100
Poultry	-	66.7	25.0	8.3	0.0	100

Table 3-18: Livestock ownership by non-beneficiary households (2016-17) (% number of equipment)

Livestock	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	-	43.8	18.8	25.0	12.5	100
Buffalo	-	50.0	0.0	50.0	0.0	100
Young Stock	-	66.7	11.1	22.2	0.0	100
Male Draught	-	75.0	0.0	25.0	0.0	100
Poultry	-	100.0	0.0	0.0	0.0	100

Table 3-19: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	18	15	17
Pucca	20	30	22
Semi-Pucca	63	55	61
Others	0	0	0
Total	100	100	100

Table 3-20: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes (%)	No (%)	Total (%)	Yes (%)	No (%)	Total (%)
TV	51	49	100	60	40	100
Telephone	0	100	100	0	100	100
Mobile phone	94	6	100	95	5	100
Cycle	96	4	100	95	5	100
Two wheeler	44	56	100	55	45	100
Four-wheeler	1	99	100	0	100	100
Refrigerator	4	96	100	0	100	100

Table 3-21: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (qtls)	Marketed Quantity (quintals)	Price received (per quintals)	Total paid-out costs (Rs.)	Profitability
paddy	5	4	91	79	1449	41356	72507
wheat	10	10	70	25	1800	60000	-15000
maize	5	5	104	60	1323	41500	37685
gram	1	1	4	4	4500	6000	9750
masur	1	1	6	5	4000	7000	11000
mustard	3	3	15	14	3420	20500	28834
Jute & mesta	1	1	12	12	3075	14750	21381
vegetable	1	1	82	82	896	24291	49212

Table 3-22: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non-beneficiary households (2016-17)

Non-beneficiary							
Crop	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	5	5	94	86	1436	49333	74651
wheat	2	2	13	9	1900	9500	6650
maize	1	1	17	13	1133	5167	9567
mustard	4	4	22	27	3475	30300	62830
Jute & mesta	3	3	32	32	3450	43500	65175
sugarcane	5	5	94	86	1436	49333	74651
Fruits	2	1	128	128	1100	54000	86250
Vegetables	2	2	95	95	1317	25000	100083

Table 3-23: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landle ss	Margin al	Small	Medi um	Large	Landl ess	Margin al	Smal l	Medi um	Large
paddy	-	1459	1447	1413	1448	-	1465	1400	1400	1400
wheat	-	-	-	-	1800	-	-	1800	2000	-
maize	-	1525	1115	1200	1050	-	1200	1100	1100	-
gram	-		4500	-	-	-	-	-	-	-
masur	-	4000	-	-	-	-	-	-	-	-
mustard	-	3429	3400	3450	3400	-	3500		3500	3400
other oilseeds	-	-	-	-	-	-	3300	-	3600	-
Jute & mesta	-	3100	3000	-	-	-	-	-	-	-

Table 3-24: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy	-	712	1265	1330	-	-	865	1470	1300	-
wheat	-	443	854	1475	-	-	1268	1567	1550	-
bajra	-	3000	-	-	-	-	-	-	-	-
maize	-	370	0	1300	-	-	1133	-	-	-
gram	-	4500	0	-	-	-	-	-	-	-
urad	-	1750	0	-	-	-	-	-	-	-
mustard	-	838	800	-	-	-	-	-	-	-

Table 3-25: Distribution of income from livestock

		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average income	% of Total Income	Average income
Milk		56	46429	97	45769
Meat		3	15000	0	15000
Eggs		19	16043	3	15100
Animal sale		23	14778	0	14778
TOTAL		100	7316	100	8638

Table 3-26: Difference in average income of beneficiaries and non-beneficiaries and change in it for beneficiary households over the year 2015-16 to 2016-17

Consumption goods	% difference in average income of beneficiaries over non-beneficiaries		% change in average income Between 2016-17 and 2015-16	
<i>Items</i>	2016-17	2015-16	Ben	Non-Ben
Milk	3	11	44	54
Meat			7	
Eggs	89	55	29	6
Animal sale			48	

Table 3-27: Awareness regarding RKVY (2016-17) (%)

Awareness regarding RKVY	Beneficiary			Non-Beneficiary		
	Yes	No	Over all	Yes	No	Over all
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	20	80	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	44	56	100	0	100	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	31	69	100	25	75	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	78	23	100	35	65	100

Table 3-28: Source of Awareness regarding RKVY (%) (2016-17) (%)

Source of Awareness	Beneficiary	Non-Beneficiary
Friends & neighbours	16.3	100
News Paper	0.0	0
Agriculture / Horticulture Department	75.0	0
SAU	0.0	0
KVK	0.0	0
Input Suppliers	1.3	0
TV/ Radio	0.0	0
Agri. Exhibitions	0.0	0
ZP/GP	7.5	0
Other sources	0.0	0
Total	100	100

Table 3-29: Intervention of RKVY in crop development

		Seeds / planting materials	Micro nutrients	Bio-fertilizers and bio-control agents	Pesticides
No of beneficiary of RKVY (No.)		80	80	80	80
For which season (%)					
	Kharif	50	50	50	50
	Rabi	50	0	0	0
	Summer	0	0	0	0
Actual cost of these materials (Rs.)		3119	13709	3951	11364
Whether Material or Subsidy received from RKVY? (%)					
	Material	50	50	50	50
	Subsidy	50	0	0	0
If Material, quantity supplied (Kg) (Average)		2.1	2.1	43.2	0.4
If subsidy	average quantity of subsidized input (Kg)	0.1	0.0	0.0	0.0
	Unit price	393.4	0.0	0.0	0.0
	Price paid by beneficiary	31.6	0.0	0.0	0.0
	Market price	63.2	0.0	0.0	0.0
	Amount of subsidy	31.6	0.0	0.0	0.0
If Subsidy, Nature of subsidy					
	Price Subsidy	50	0	0	0
	DBT	0	0	0	0

Table 3- 30: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether the soil is tested in your area?			Soil health card issued? (among those who had soil tested)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless			100			100
Marginal	63	37	100	59	41	100
Small	88	12	100	55	45	100
Medium	100	0	100	75	25	100
Large	100	0	100	100	0	100
Total	79	21	100	62	38	100
Non-beneficiary						
Landless			100			100
Marginal	20	80	100	0	100	100
Small	0	100	100			100
Medium	75	25	100	67	33	100
Large	0	100	100			100
Total	25	75	100	40	60	100

Table 3-31: Places of soil testing

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small			
Medium	100	0	0
Large			
Total	100	0	0

Table 3-32: Information regarding training and demonstration under RKVY (% of households)
(2016-17)

Land category	Number of Beneficiaries	% of beneficiary households undergone training	Type of training				% of households found training beneficial	% of households who want more training
			Demonstration	Field Visit	Kris hi Mela	Others		
Landless	-	-	-	-	-	-	-	-
Marginal	35	86	100	0	0	0	97	97
Small	33	94	100	0	0	0	97	97
Medium	8	100	100	0	0	0	100	100
Large	4	100	100	0	0	0	100	100
Total	80	91	100	0	0	0	97	97

Table 3-33: Usage of mobile phone in receiving agriculture-related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless					0
Marginal	97	83	26	6	0
Small	94	82	18	3	0
Medium	100	100	25	0	0
Large	100	100	25	0	0
Total	96	85	23	4	0
Non-Beneficiary					
Landless			0	0	0
Marginal	50	70	0	0	0
Small	50	100	0	0	0
Medium	50	100	0	0	0
Large	50	67	0	0	0
Total	50	80	0	0	0

Table 3- 34: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		43	30	25	0	34
Contact details of the department which pay subsidy not available		37	36	38	25	36
Eligibility or criteria for availing the subsidy not known		43	45	13	25	40
Procedure for the subsidy very tedious		51	52	63	50	53
No of documents required for availing subsidy are too many		60	61	50	50	59
Subsidy paid after purchase while initial payment remains the highest problem		20	24	13	25	21
Delay in transfer		60	67	88	50	65
Prescribed machinery/asset not easily available in the market		54	52	88	25	55
Institutional financing facility not available		20	30	25	75	28
Capacity building/technical advice not provided		31	9	38	0	21
Long time gap between the purchase and receiving the subsidy amount		20	21	13	25	20
Biased towards large land owners		54	36	50	50	46
Poor quality of materials/machinery are supplied		54	48	25	50	49
Implementing agencies are located far away		63	70	38	100	65
Incidence of bribery		57	61	75	50	60
Lack of monitoring		51	82	100	25	68
Complementary inputs not available		71	55	100	25	65
Restricted Choice		49	42	38	75	46
Lack of marketing support		51	52	25	50	49
Any other (specify)		0	0	0	0	0

Table 3-35: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		90	33	50	33	65
Contact details of the department which pay subsidy not available		70	33	50	67	60
Eligibility or criteria for availing the subsidy not known		70	0	25	67	50
Procedure for the subsidy very tedious		40	67	75	67	55
No of documents required for availing subsidy are too many		50	100	75	67	65
Subsidy paid after purchase while initial payment remains the highest problem		60	0	50	67	50
Delay in transfer		90	100	75	100	90
Prescribed machinery/asset not easily available in the market		30	33	50	67	40
Institutional financing facility not available		50	33	50	0	40
Capacity building/technical advice not provided		80	33	50	67	65
Long time gap between the purchase and receiving the subsidy amount		50	33	25	67	45
Biased towards large land owners		20	33	50	0	25
Poor quality of materials/machinery are supplied		50	67	75	67	60
Implementing agencies are located far away		50	67	100	67	65
Incidence of bribery		60	100	75	100	75
Lack of monitoring		50	67	75	33	55
Complementary inputs not available		100	67	25	100	80
Restricted Choice		70	33	50	33	55
Lack of marketing support		60	33	25	33	45
Any other (specify)		0	0	0	0	0

Table 3-36 : Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landless										
Marginal	13	49	62	16	49	29	51	27	53	24
Small	14	53	72	19	64	28	50	42	72	19
Medium	17	50	58	8	50	17	42	25	58	8
Large	0	29	57	0	57	0	14	43	43	14
Total	13	49	65	15	55	25	47	33	60	20

Table 3-37: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landless								
Marginal	58	20	67	11	31	47	0	0
Small	69	22	69	22	42	50	0	0
Medium	33	33	67	0	50	17	0	0
Large	43	14	43	14	14	43	0	0
Total	58	22	66	14	36	44	0	0

Table 3-38 : Details of projects surveyed for implementing agency

Sl no.	Project Name	Implementing agency
02	Bringing Green Revolution to Eastern India (HH)	Director of Agriculture, Assam, Khanapara, Guwahati
03	Cultivation of hybrid vegetable (HH)	Directorate of Horticulture & Food Processing, Assam, Guwahati
01	Agriculture Mechanization (IA)	Chief Engineer, Agriculture, Assam, Khanapara, Guwahati-781022

Table 3-39: General Information regarding the implementing agency

Issues\ Projects	Agriculture Mechanization
Type of construction	(i) Godown (RKVY, 2012-13) & (RKVY, 2014-15) (ii) Vermicompost production unit (RKVY, 2012-13) (iii) Covered Threshing floor (BGREI, 2012-13) (iv) GCM, Ulubari ((RKVY, 2012-13) (v) ETC, Naltoli (RKVY, 2014-15)
New construction/Improvement of an older construction	New as well as improvement
Awareness about DAP	No
Included in DAP	No
Project proposed by	Implementing Agency
Level at which the project was proposed	District

Table 3-40: Physical Capacity of the projects

Issues\ Projects	Agriculture Mechanization
Required physical capacity of the selected work. (in numbers)	Godown = 8 Nos (RKVY, 2012-13), Godown = 10 Nos (RKVY, 2014-15), Covered Threshing floor (BGREI, 2012-13) = 79 Nos, Vermi compost production unit (RKVY, 2012-13)= 90 Nos., ETC, Naltoli (RKVY, 2014-15)= 1 No., GCM, Ulubari ((RKVY, 2012-13) = 1 No.
Existing physical capacity excluding the current project.	0
Realized Capacity of the current project. (numbers)	0
Number of phases in the project	5

Table 3-41: Tendering & Maintenance regarding the project

Issues\ Projects	Agriculture Mechanization
Whether tender was called for execution of the work	Yes
e-tender issued	No
Opinion: e-tendering increases efficiency of tendering	Yes
Opinion: e-tendering increases transparency	Yes
Opinion: e-tendering has increased number and quality of responses from vendors	Yes
Number of days given to respond to tenders	90
Number of vendors responded to the tenders	For Godown, 2014-15 = 65 Nos, Godown, 2012-13 = 62 Nos, GCM, Ulubari ((RKVY, 2012-13) = 3 Nos., ETC, Naltoli (RKVY, 2014-15)= 4 No
Method for evaluating the tenders	Technical criteria and financial criteria
Any re-bidding made	No
Reasons for re-bidding	Less working days in rainy season
Selected vendor a Government / Private Organization	Private
Whether selected vendor worked with the agency before	Yes
Agency responsible for the maintenance of the constructed project in future years	Others
If same agency, whether any financial provision is there in the project for maintenance in future	No

Table 3-42: Benefits and Challenges regarding the projects

Issues\ Projects	Agriculture Mechanization
Beneficiaries from the project other than the farmers	FPO's and SHGs,
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries	Development cooperatives, FPOs and Rural electrification
Project needs enhancement / improvement	
Problems associated with the existing project	Financial
Opinion: the project will complete in stipulated time	Political problems
Reasons for delay in project	Shortage and delay of funds, Training has not been provided, Less working days in rainy season
Whether infrastructure is geo-tagged?	No
Reasons for not being geo-tagged	Lack of internet and other associated services

Table 3-43: Convergence with other projects

Issues\ Projects	Agriculture Mechanization
Whether any convergence with other schemes	Yes
Name of the schemes converged	Projects related to agricultural mechanization under other programs / schemes such as MMA, SMAM.
Ways by which convergence achieved	Both

4 BIHAR

Bihar is situated in Eastern region of India with the geographic area of 9.36 lakh hectares. Since mineral resource rich areas and industrial sector has been a part of Jharkhand after the bifurcation of Bihar in 2000, agriculture sector is now the most important sector in the economy to rely upon. The share of agriculture is 18.1% in GSDP in 2015-16 (at 2011-12 constant prices) (Economic Survey of Bihar 2017). Net sown area in Bihar is 5252.25 thousand hectare in 2013-14. Major crops are paddy, wheat, maize, barley, pulses, oilseeds, jute, mesta and sugarcane. Fruits, vegetables and flowers are also important agricultural products.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Bihar. Under RKVY scheme, Rs. 258.22 Crore was allocated for Bihar during 2016-17, among which Rs. 90.61 Crore has been released and Rs. 75.64 Crore is spent (and UC received for that) till 31st July 2017. MIS report for the year 2015-16 shows that projects were proposed for 16 projects of Rs. 134.6 Crore for Bihar³. Among them, 14 projects were of crop development, 1 project for innovative program/ training/ capacity building/ others and 1 project for seed. Crop development has been given the highest priority in terms of number of projects as well as cost. Figure 4-1 shows allocation, release and expenditure in RKVY in Bihar over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Bihar. We have selected two projects for Bihar and analysed the performance of RKVY by collecting primary information. List of selected projects for Bihar is given below (Table 4-1).

4.1 RESULTS FROM PRIMARY SURVEY

4.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also

³ MIS report for the year 2016-17 is not uploaded in RKVY website till 20th December, 2017.

asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Bihar, total 100 households are considered for the survey, among which 80 households are beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, the majority of the beneficiary households (40% of beneficiary households) belong to marginal category, 40% are small farmers, 19% belongs to medium category and 1% belongs to large category. In the non-beneficiary households, 29% are landless, 47% is marginal, 18% is small and 6% is medium farmers (Table 4-2).

4.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of owned land is higher for marginal and medium farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tube-well (electric and diesel both) for irrigation in Kharif season (Table 4-3A & Table 4-3B).

We have collected separate data for land-holding and irrigation for Kharif and Rabi season. For Rabi 2016-17 also, the average area of owned land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households (Table 4-4A & 4-4B). Sources of irrigation for households are same for Rabi season like Kharif season: electric and diesel tube-wells.

In our sample, a total of 80 households are beneficiaries and 20 are non-beneficiaries. A total number of the population covered is 676, among them, 563 people belong to beneficiary households and 113 people belong to non-beneficiary households (Table 4-5). Among them in beneficiary households, 16% of the population is in below 15 age-group, while 13 percent are in above 60 age-group. Rest 71% population in beneficiary households is in working age-group. In non-beneficiary households, 29% of the population is below 15 age-groups, while 5 percent

are in above 60 age-group. Rest 65% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 70% population is in working-age group. On the education front, 17% of the population in beneficiary group and 12% of non-beneficiary group is illiterate. 69% population in beneficiary households and 67% population in non-beneficiary households have attended school (class 1 to 12); while 11% population in beneficiary households and 18% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour or are self-employed. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 4-6)

4.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 55% of the beneficiary households have reported income from farming. For non-beneficiary households, 32% of households have reported farming as an occupation. Apart from farming, income is reported from dairy, agriculture labour, casual labour and salary. More households have reported income for non-beneficiary households from salary and casual labour as compared to the beneficiary households (Table 4-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 197501 in Bihar while the same for non-beneficiary households is Rs. 164226 in 2016-17 (Table 4-8). Average annual income for beneficiary households was Rs. 174733 in 2015-16 while it was Rs. 147742 for non-beneficiary households in the same year (Table 4-9). This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy apart from agriculture labour, casual labour, salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from salary is higher for non-beneficiary households (Table 4-8).

Table 4-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 221150 which is higher than non-beneficiaries (Rs. 135000); so is the average cost (Rs. 91813 and Rs. 64000 respectively).

In terms of percentage change in income (Table 4-10), average income has increased by 13% in farming for beneficiary and 9% for non-beneficiary households. However, the average cost has increased by same proportion both for beneficiary and non-beneficiary households in farming (10%). Profitability has also increased for dairy both for beneficiary and non-beneficiary households.

4.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 4-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on electricity for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation and Expenditure on diesel are higher for beneficiaries than non-beneficiaries, and for diesel, the difference is quite high.

Table 4-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in Expenditure on electricity for irrigation and purchased water for irrigation for both beneficiary and non-beneficiary households.

4.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Bihar, for beneficiary households, majority of implements like tractor, trolley, weeder, sprayers, threshers, pump sets, fodder choppers are owned by small and medium farmers (Table 4-13A). In non-beneficiary households, marginal farmers have more proportion of equipments (Table 4-13B).

Table 4-13A: Asset ownership by beneficiary households (% of number of implements) (2016-

Marginal, small and medium farmers from beneficiary households have a significant proportion of ownership of livestock (Table 4-14A). Marginal and small farmers have cow, buffalo and young stock.

In our sample, 58% of the households for beneficiary and 60% of non-beneficiary groups have pucca houses (Table 4-15). 14% of beneficiary households and 15% of non-beneficiary households have kachha houses.

It is observed from our sample that 33% of beneficiary households possess TV while for non-beneficiaries, it is 75% (Table 4-16). In the case of mobile phones 98% of beneficiary and 100% of non-beneficiary households have reported to possess it. Both beneficiary and non-beneficiary households own bicycles, two-wheelers, and refrigerator; while 6% of the beneficiary households reported to own four-wheelers.

4.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, gram, pulses (tur masur, moong), groundnut, mustard and vegetables in the majority of the cultivated area (Table 4-17). But for non-beneficiary households, the emphasis is on paddy, maize, moong, groundnut, mustard, fruits, spices and vegetables (Table 4-18). Average production of paddy is higher for beneficiary households (57.2 qtls) as compared to non-beneficiary households (43.9 qtls). Price of the marketed quantity for paddy and moong are also more for the beneficiary household vis-à-vis non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 4-19). For the crops like paddy and moong, both for beneficiary and non-beneficiary households, marginal farmers are getting less prices (Table 4-19).

In 2015-16 also, it is seen that price received by marginal farmers is low for paddy as compared to farmers with larger land-holdings.

4.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Bihar, it is seen that average income from livestock is lower for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, all income from livestock comes from milk for beneficiary households and non-beneficiary households (Table 4-21)

The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries in 2016-17 and 2015-16. Income from milk is higher for beneficiaries for both the years. In total, income from livestock has decreased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries (Table 4-22).

4.1.1.7 AWARENESS REGARDING RKVY PROGRAM

Regarding the awareness of RKVY, it is found that in our sample, 25% of non-beneficiary households are not aware of RKVY. 100% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 33% of the beneficiary households and none of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 33% of the beneficiary households and none of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 4-23 that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Bihar, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours and Agriculture / Horticulture Department, SAU, KVK, input suppliers and ZP/GP (Table 4-24). For non-beneficiary households, 100% of the

4.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop Development has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of Crop Development through RKVY. Beneficiaries have received support from RKVY program in seed/ planting material, micro nutrients, Bio-fertilizer and pesticides in Bihar (Table 4-25A). The majority of them have received it through DBT. Average subsidy amount is Rs. 666 for seed/ planting material, Rs. 625 for micro nutrients, Rs. 261 for bio-fertilizer and Rs. 1117 for pesticides. Beneficiaries have reported that average number of days taken for paying DBT is around 60 days (Table 4-25B). Under the project “Shree Vidhi takniki se dhan ki kheti ka protsahan”, assistance is provided for paddy and under the project “Brining Green Revolution to Eastern India “, assistance is provided for paddy and wheat both.

In Bihar, 68% of the farmers in beneficiary group and 15% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil (Table 4-26A). Among them, 44% of beneficiary households and 33% of non-beneficiary households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 4-26B).

Within our sample in Bihar, 35.6% of beneficiary households had undergone training and demonstration (Table 4-27). All the households found training beneficial and 87% want more training. RKVY program has facilitated training and demonstration in Bihar for all categories of farmers.

It is also found in our study that 98% of the beneficiary households have mobile phones. But only 86% of the beneficiary households receives text messages. Only 54% of the beneficiary households have reported to receive agriculture-related text messages (Table 4-28).

4.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY program as Subsidy paid after purchase while initial payment remains the highest problem , Long time gap between the purchase and receiving the subsidy

amount apart from problems like Implementing agencies are located far away and Capacity building/technical advice not provided etc. (Table 4-29A & 4-29B).

According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in increasing production, providing financial assistance, employment generation, building infrastructure and better price realization. However, it appears that RKVY has not been very successful in Post-harvesting storage, improving marketing facilities and procurement (Table 4-30A & Table 4-30B). Small and marginal farmers specifically benefitted from RKVY program in employment generation, getting financial assistance and increasing production.

4.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Bihar. Under RKVY scheme, Rs. 258.22 Crore was allocated for Bihar during 2016-17, among which Rs. 90.61 Crore has been released and Rs. 75.64 Crore is spent (and UC received for that) till 31st July 2017. MIS report for the year 2015-16 shows that projects were proposed for 16 projects of Rs. 134.6 Crore for Bihar. Among them, 14 projects were of crop development, 1 project for innovative program/training/ capacity building/ others and 1 project for seed. Crop development has been given the highest priority in terms of number of projects as well as cost.

This study analyses performance of RKVY for the year 2016-17 in Bihar. We have selected two projects for Bihar and analysed the performance of RKVY by collecting primary information. In our sample in Bihar, total 100 households are considered for the survey, among which 80 households are beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed. In our sample, the majority of the beneficiary households (40% of beneficiary households) belong to marginal category, 40% are small farmers, 19% belongs to medium category and 1% belongs to large category. In the non-beneficiary households, 29% are landless, 47% is marginal, 18% is small and 6% is medium farmers.

A total number of the population covered is 676, among them, 563 people belong to beneficiary households and 113 people belong to non-beneficiary households. Among them in beneficiary households, 16% of the population is in below 15 age-group, while 13 percent are in above 60 age-group. Rest 71% population in beneficiary households is in working age-group. In non-beneficiary households, 29% of the population is below 15 age-groups, while 5 percent are in above 60 age-group. Rest 65% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 70% population is in working-age group. On the education front, 17% of the population in beneficiary group and 12% of non-beneficiary group is illiterate. 69% population in beneficiary households and 67% population in non-beneficiary households have attended school (class 1 to 12); while 11% population in beneficiary households and 18% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour or are self-employed. A major part of the population belongs to the category of ‘student’ or ‘housewife’. 55% of the beneficiary households have reported income from farming. For non-beneficiary households, 32% of households have reported farming as an occupation. Apart from farming, income is reported from dairy, agriculture labour, casual labour and salary. More households have reported income for non-beneficiary households from salary and casual labour as compared to the beneficiary households. Major sources of income are farming, dairy apart from agriculture labour, casual labour, salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from salary is higher for non-beneficiary households. In terms of percentage change in income, average income has increased by 13% in farming for beneficiary and 9% for non-beneficiary households. However, the average cost has increased by same proportion both for beneficiary and non-beneficiary households in farming (10%). Profitability has also increased for dairy both for beneficiary and non-beneficiary households.

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for beneficiaries than non-beneficiaries, and for diesel, the difference is quite high. It is evident that there is significant increase in Expenditure on electricity for irrigation and purchased water for irrigation for both beneficiary and non-beneficiary households.

In our sample in Bihar, for beneficiary households, majority of implements like tractor, trolley, weeder, sprayers, threshers, pump sets, fodder choppers are owned by small and medium farmers. Marginal, small and medium farmers from beneficiary households have a significant proportion of ownership of livestock. 58% of the households for beneficiary and 60% of non-beneficiary groups have pucca houses. 14% of beneficiary households and 15% of non-beneficiary households have kachha houses. It is observed from our sample that 33% of beneficiary households possess TV while for non-beneficiaries, it is 75%. In the case of mobile phones 98% of beneficiary and 100% of non-beneficiary households have reported to possess it. Both beneficiary and non-beneficiary households own bicycles, two-wheelers, and refrigerator; while 6% of the beneficiary households reported to own four-wheelers.

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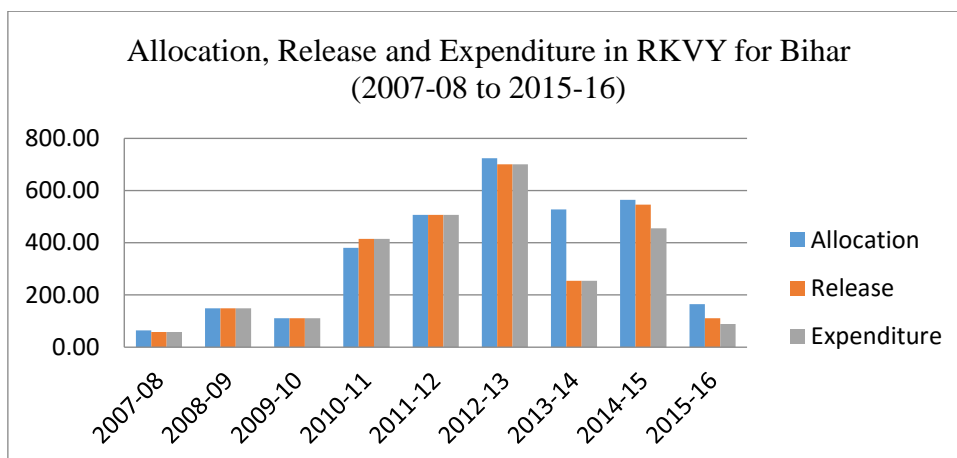
beneficiary households are deprived of any benefits through-out these years. 33% of the beneficiary households and none of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. In our sample in Bihar, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours and Agriculture / Horticulture Department, SAU, KVK, input suppliers and ZP/GP. For non-beneficiary households, 100% of the households received information from friends and neighbours.

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In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY program as Subsidy paid after purchase while initial payment remains the highest problem, Long time gap between the purchase and receiving the subsidy amount apart from problems like Implementing agencies are located far away and Capacity building/technical advice not provided etc. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in

increasing production, providing financial assistance, employment generation, building infrastructure and better price realization. However, it appears that RKVY has not been very successful in Post-harvesting storage, improving marketing facilities and procurement. Small and marginal farmers specifically benefitted from RKVY program in employment generation, getting financial assistance and increasing production.

Figure 4-1: Allocation, Release and Expenditure in RKVY for Bihar (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 4-1: List of selected project name and code

Sl. No.	Name of the Project
1	Brining Green Revolution to Eastern India
2	Shree Vidhi takniki se dhan ki kheti ka protsahan

Table 4-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	5(29)	5(5)
Marginal	32(40)	8(47)	40(41)
Small	32(40)	3(18)	35(36)
Medium	15(19)	1(6)	16(16)
Large	1(1)	0(0)	1(1)
Total	80(100)	17(100)	97(100)

Table 4-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			-	1.7	3.3	5.8	56.0
Leased-in Land / share cropping (acre)			-	1.5	1.5	5.0	0.0
Leased-out Land / share cropping (acre)			-	0.0	0.0	0.0	0.0
Total operated area (owned+ LI-LO) (acre)			-	1.8	3.4	6.7	56.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by tubewell (%)	Rented	Electric	-	22.6	21.6	17.3	0.0
		Diesel	-	26.7	24.3	23.0	0.0
	Owned	Electric	-	24.8	24.4	26.0	64.3
		Diesel	-	25.9	29.7	33.7	35.7
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			-	0.0	0.0	0.0	0.0

Table 4-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			-	1.6	3.7	3.0	-
Leased-in Land / share cropping (acre)			-	1.0	0.0	5.0	-
Leased-out Land / share cropping (acre)			-	0.0	0.0	0.0	-
Total operated area (owned+LI-LO) (acre)			-	1.8	3.7	8.0	-
Irrigated Area by canal (%)			-	0.0	0.0	0.0	-
Irrigated Area by tubewell (%)	Rented	Electric	-	0.0	0.0	0.0	-
		Diesel	-	22.6	0.0	0.0	-
	Owned	Electric	-	38.7	46.2	62.5	-
		Diesel	-	38.7	53.9	37.5	-
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	-
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	-
Irrigated Area by others (%)			-	0.0	0.0	0.0	-

Table 4-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			-	1.8	3.6	5.7	56.0
Leased-in Land / share cropping (acre)			-	1.5	1.5	5.0	0.0
Leased-out Land / share cropping (acre)			-	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO) (acre)			-	1.9	3.7	7.0	56.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by tubewell (%)	Rented	Electric	-	24.9	21.1	21.7	0.0
		Diesel	-	24.2	25.1	19.3	0.0
	Owned	Electric	-	25.6	24.2	25.8	64.3
		Diesel	-	25.4	29.5	33.2	35.7
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			-	0.0	0.0	0.0	0.0

Table 4-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			-	1.6	3.5	3.0	-
Leased-in Land / share cropping (acre)			-	1.0	0.0	5.0	-
Leased-out Land / share cropping (acre)			-	0.0	0.0	0.0	-
Total operated area (owned+LI-LO) (acre)			-	1.8	3.5	8.0	-
Irrigated Area by canal (%)			-	0.0	0.0	0.0	-
Irrigated Area by tubewell (%)	Rented	Electric	-	0.0	0.0	0.0	-
		Diesel	-	22.6	0.0	0.0	-
	Owned	Electric	-	38.7	42.9	62.5	-
		Diesel	-	38.7	57.1	37.5	-
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	-
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	-
Irrigated Area by others (%)			-	0.0	0.0	0.0	-

Table 4-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	16	29	18
	>15 to 25	19	14	18
	>25 to 40	31	33	31
	>40 to 59	21	19	21
	>59	13	5	11
	All Groups	100	100	100
Education	Illiterate	17	12	16
	Class 1 to 5	17	21	18
	Above Class 5 to 8	15	9	14
	Above Class 8 to 12	37	37	37
	Above Class 12	11	18	12
	Other diploma	0	1	0
	can read and write	0	0	0
	can read only	0	0	0
	can count only	1	0	0
	could not attend class 1	2	3	2
	All Groups	100	100	100

Table 4-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	18	12	17
agricultural labour	0	3	0
dairy	0	1	0
casual labour	2	6	3
self-employment (specify)	2	1	2
salaried employment	7	12	8
Student	30	35	31
housewife	25	25	25
non-working	13	5	12
others (no saperate income)	2	1	1
All Groups	100	100	100

Table 4-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	55	32
Dairy	10	10
Agricultural Labour	0	10
Casual Labour	13	19
Salary	21	29
Other	1	0
Total	100	100

Table 4-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	249763	100981	148781	147800	70200	77600
Dairy	69667	30133	39533	98333	35000	63333
Agricultural Labour	-	-	-	18333	-	-
Casual Labour	51737	2750	48987	68833	-	-
Salary	212833	14769	198064	316667	12000	304667
Other	243600	68750	174850	-	120000	-
Total	197501	78303	119197	164226	60167	104059

Table 4-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	221150	91813	129338	135000	64000	71000
Dairy	57600	25267	32333	70000	24333	45667
Agricultural Labour	-	-	-	16667	-	-
Casual Labour	41500	2250	39250	51667	-	-
Salary	196500	12154	184346	295556	9000	286556
Other	230000	58667	171333	-	92500	-
Total	174733	70414	104319	147742	51389	96353

Table 4-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%)
(2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	13	10	15	9	10	9
Dairy	21	19	22	40	44	39
Agricultural Labour	-	-	-	10	-	-
Casual Labour	25	22	25	33	-	-
Salary	8	22	7	7	33	6
Other	6	17	2	-	30	-

Table 4-11: Annual expenditure for agriculture (Rs.)

<i>items</i>	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	22375	24000	22375	24000
Total rent on machinery (tractor, harvester etc)	11955	10867	10968	9875
Expenditure on purchased water for irrigation	5476	4000	4852	3250
Expenditure on electricity for irrigation	5228	4000	4791	3500
Expenditure on diesel	13453	7750	14906	6725
Expenditure on other fuels for agriculture	2507	1875	13751	1250
Any other	73504	42792	65869	39475
<i>Total expenditure on agriculture</i>	98869	40670	96511	37350

Table 4-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	0
Total rent on machinery (tractor, harvester etc)	9	10
Expenditure on purchased water for irrigation	13	23
Expenditure on electricity for irrigation	9	14
Expenditure on diesel	-10	15
Expenditure on other fuels for agriculture	-82	50
Any other	12	8
<i>Total expenditure on agriculture</i>	2	9

Table 4-13B: Asset ownership by beneficiary households (% of number of implements)
(2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	7	47	40	7
Trolley	0	8	46	38	8
Weeder	0	0	100	0	0
Manual / Power Sprayers	0	25	46	27	2
Threshers	0	9	64	18	9
Drier	0	100	0	0	0
Electrical Pump sets	0	16	53	28	3
Diesel Pump sets	0	28	45	25	2
Leveler	0	0	50	33	17
Fodder Choppers	0	31	44	24	2
Others	0	10	40	40	10

Table 4-13B: Asset ownership by non-beneficiary households (% of number of implements)
(2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0.0	50.0	50.0	0.0	0.0
Trolley	0.0	50.0	50.0	0.0	0.0
Weeder	0.0	100.0	0.0	0.0	0.0
Manual / Power Sprayers	0.0	50.0	37.5	12.5	0.0
Threshers	0.0	100.0	0.0	0.0	0.0
Electrical Pump sets	0.0	40.0	40.0	20.0	0.0
Diesel Pump sets	0.0	50.0	37.5	12.5	0.0
Fodder Choppers	10.0	50.0	30.0	0.0	10.0

Table 4-14A: Livestock ownership by beneficiary households (2016-17)(% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0	35.09	43.86	19.30	1.75
Buffalo	0	26.09	47.83	21.74	4.35
Young Stock	0	35.19	44.44	18.52	1.85
Male Draught	0	0.00	0.00	100.00	0.00
Goat	0	50.00	0.00	50.00	0.00

Table 4-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	14	15	14
Pucca	58	60	58
Semi-Pucca	29	25	28
Others	0	0	0
Total	100	100	100

Table 4-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	33	67	100	75	25	100
Telephone	0	100	100	0	100	100
Mobile phone	98	3	100	100	0	100
Cycle	73	28	100	75	25	100
Two wheeler	56	44	100	55	45	100
Four wheeler	6	94	100	5	95	100
Refrigerator	14	86	100	30	70	100

Table 4-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	3.4	3.0	57.2	47.8	1143.8	31683.9	22960.6
gram	1.0	1.0	5.0	5.0	5100.0	10000.0	15500.0
moong	1.6	1.6	4.4	3.9	4468.8	8562.5	8837.7
urad	1.3	1.3	5.0	4.8	3983.3	8000.0	10920.8
groundnut	1.5	1.5	11.2	11.0	3666.7	14666.7	25666.7
mustard	1.4	1.3	7.8	7.1	2816.7	10250.0	9701.4
other oilseeds	0.8	0.8	2.5	2.5	4050.0	4000.0	6125.0
fruit	0.6	0.6	50.0	50.0	2150.0	40000.0	67500.0
vegetable	0.6	0.6	40.9	40.8	966.5	15974.1	23451.2

Table 4-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	2.5	2.1	43.9	34.3	1014.4	24777.8	10051.5
maize	2.0	2.0	40.0	40.0	1100.0	17000.0	27000.0
moong	1.4	1.4	4.5	4.0	3690.0	8700.0	6060.0
groundnut	2.0	2.0	14.0	14.0	3500.0	20000.0	29000.0
mustard	2.0	2.0	12.0	10.0	3200.0	13000.0	19000.0
fruit	1.0	1.0	75.0	75.0	2000.0	60000.0	90000.0
vegetable	2.0	2.0	200.0	200.0	600.0	48000.0	72000.0
spices	3.0	3.0	75.0	75.0	1400.0	42000.0	63000.0

Table 4-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landle ss	Margin al	Sma ll	Mediu m	Larg e	Landle ss	Margin al	Sma ll	Mediu m	Larg e
paddy		1010	1406	1472	1477		848.5	1451		1400
maize								1100		
gram			5100							
moong		4500	4864	4080	2800		3650	3850		
urad		4600	3850	3800	4000					

groundnut				3750	3500			3500		
mustard		3500	1600	3400	3400					3200
other oilseeds			4100	4000						

Table 4-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		954.8	1354	1441	1448		764.6	1412		1380
maize								1000		
gram			5000							
masur		3500								
moong		4753	5027	3900	4750		3513	3700		
urad		4500	3700	3650	3800					
groundnut				3650	3400			3400		
mustard		3200	1500	3300	3300					3100
other oilseeds			4000	3900						

Table 4-21: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
Items	% of Total Income	Average Annual income (Rs.)	% of Total Income	Average Annual income (Rs.)
Milk	100	57600.0	100	70000.0
TOTAL	100	57600.0	100	70000.0

Table 4-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	-18	-29	-17	-29
TOTAL	-18	-29	-17	-29

Table 4-23: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary		
	Yes	No	overall	Yes	No	overall
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	25	75	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	33	68	100	0	100	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	3	98	100	0	100	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	33	68	100	0	100	100

Table 4-25A: Distribution of assistance under Crop Development programs in Bihar for beneficiaries

	Crop	Micro nutrients	Bio-fertilizers and bio-control agents	Pesticides
Landless	0	0	0	0
Marginal	40	43	46	43
Small	40	36	41	36
Medium	19	20	12	20
Large	1	1	0	1
Total	100	100	100	100

Table 4-25B: Details of intervention in Crop Development programs in Bihar for beneficiaries

		Seeds / planting materials (specify)	Micro nutrients	Bio- fertilizers and bio- control agents	Pesticides
No of beneficiary of RKVY		80	80	80	80
For which season					
	Kharif	56	99	100	100
	Rabi	69	1	0	0
	Summer				
Actual cost of these materials (Rs.) (Average)		666	639	261	1233
Whether Material or Subsidy received from RKVY? (%)					
	Material	100	100	98	100
	Subsidy	0	0	0	0
If Material, quantity supplied (Kg) (Average)					
If subsidy, then	quantity of subsidized input (Kg)	17	54	22	5
	Unit price	48	47	12	524
	Price paid by beneficiary	666	625	261	1117
	Market price	666	325	261	1117
	Amount of subsidy	666	625	261	1117
If Subsidy, Nature of subsidy (%)					
	Price Subsidy	0	0	0	0
	DBT	100	100	100	100
If DBT, the total amount received as DBT (Rs.) (Average)		666	625	261	1117
If DBT, average number of days taken to receive the amount in your bank account		59	64	55	58
Area in acres		1	0	12	0

Table 4-26A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Whether soil is tested in your area?			Soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless	-	-	-	-	-	-
Marginal	47	53	100	27	73	100
Small	81	19	100	42	58	100
Medium	80	20	100	67	33	100
Large	100	0	100	100	0	100
Total	68	33	100	44	56	100
Non-beneficiary						
Landless	-	-	-	-	-	-
Marginal	13	88	100	0	100	100
Small	33	67	100	100	0	100
Medium	100	0	100	0	100	100
Large	0	100	100	-	-	-
Total	15	85	100	33	67	100

Table 4-26B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless	-	-	-
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless	-	-	-
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large	-	-	-
Total	100	0	0

Table 4-27: Information regarding training and demonstration under RKVY (% of households) (2016-17)

			Type of training					
	Number of Beneficiaries	% of beneficiary households undergone training	Demonstration	Field Visit	Kris hi Mela	Others	% of households found training beneficial	% of households who want more training
Landless	-	-	-	-	-	-	-	-
Marginal	32	34.4	9.1	0.0	90.9	0.0	100.0	100.0
Small	32	40.6	46.2	7.7	46.2	0.0	100.0	84.6
Medium	15	28.0	42.9	0.0	57.1	0.0	100.0	71.4
Large	1	100.0	0.0	0.0	100.0	0.0	100.0	100.0
Total	80	35.6	31.3	3.1	65.6	0.0	100.0	87.5

Table 4-28: Usage of mobile phone in receiving agriculture related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	-	-	-	-	-
Marginal	97	72	34	34	0
Small	97	94	59	59	0
Medium	100	100	80	80	0
Large	100	100	100	100	0
Total	98	86	54	54	0

Table 4-29A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY program details not easily available	-	22	38	40	100	33
Contact details of the department which pay subsidy not available	-	34	28	33	0	31
Eligibility or criteria for availing the subsidy not known	-	25	16	47	100	26
Procedure for the subsidy very tedious	-	41	31	27	0	34
No of documents required for availing subsidy are too many	-	47	41	20	0	39
Subsidy paid after purchase while initial payment remains the highest problem	-	72	66	80	100	71
Delay in transfer	-	38	53	73	100	51
Prescribed machinery/asset not easily available in the market	-	28	22	20	0	24
Institutional financing facility not available	-	31	28	20	0	28
Capacity building/technical advice not provided	-	56	50	47	0	51
Long time gap between the purchase and receiving the subsidy amount	-	63	59	53	100	60
Biased towards large land owners	-	28	28	27	0	28
Poor quality of materials/machinery are supplied	-	16	25	33	0	23
Implementing agencies are located far away	-	59	63	27	100	55
Incidence of bribery	-	38	22	40	100	33
Lack of monitoring	-	44	66	33	0	50
Complementary inputs not available	-	34	28	60	0	36
Restricted Choice	-	31	38	27	0	33
Lack of marketing support	-	59	44	33	100	49
Any other	-	0	0	0	0	0

Table 4-29B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY program details not easily available	-	63	100	100	67	75
Contact details of the department which pay subsidy not available	-	63	100	100	67	80
Eligibility or criteria for availing the subsidy not known	-	88	67	100	100	90
Procedure for the subsidy very tedious	-	75	67	0	67	70
No of documents required for availing subsidy are too many	-	50	33	100	67	55
Subsidy paid after purchase while initial payment remains the highest problem	-	63	67	100	100	75
Delay in transfer	-	50	100	0	33	60
Prescribed machinery/asset not easily available in the market	-	50	67	100	0	45
Institutional financing facility not available	-	63	33	100	100	60
Capacity building/technical advice not provided	-	75	100	0	33	75
Long time gap between the purchase and receiving the subsidy amount	-	38	100	100	100	70
Biased towards large land owners	-	75	33	0	67	55
Poor quality of materials/machinery are supplied	-	25	100	100	67	55
Implementing agencies are located far away	-	63	100	100	100	80
Incidence of bribery	-	38	33	100	67	40
Lack of monitoring	-	63	33	0	67	55
Complementary inputs not available	-	63	100	0	33	60
Restricted Choice	-	63	100	100	33	65
Lack of marketing support	-	88	100	100	67	85
Any other	-	0	0	0	0	0

Table 4-30A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	0	0	0	0	0	0	0	0	0	0
Marginal	30	50	73	8	25	55	65	15	63	18
Small	51	40	83	9	49	43	60	31	63	29
Medium	63	31	94	0	31	63	75	19	63	31
Large	0	25	25	0	0	25	25	0	0	25
Total	40	40	74	6	32	48	60	20	57	23

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 4- 30B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	0	0	0	0	0	0	0	0
Marginal	35	45	45	35	3	78	0	0
Small	60	31	51	40	3	89	0	0
Medium	56	38	63	31	19	75	0	0
Large	0	25	25	0	0	25	0	0
Total	44	36	47	33	5	75	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

5 CHHATTISGARH

Chhattisgarh occupies a special position in the country because of its natural resource endowments and low population density. With 137,90 (State of Agriculture⁴) thousand hectares of land, this is the 10th biggest state of India. This state was carved out of Madhya Pradesh on 1st November, 2000. It is situated in the central south eastern region of India. Chhattisgarh borders the states of Madhya Pradesh in the northwest, Maharashtra in the south-west, Telangana in the south, Odisha in the south-east, Jharkhand in the north-east and Uttar Pradesh in the north. Currently the state comprises 27 districts. About 2.11% of the country's population live in the state and about 77% of total population of the state live in rural areas (State of Agriculture).

Chhattisgarh has a large share of forest cover (45.95%). Despite that, this state is one of the major producers of paddy, jowar, groundnut, oilseed, and wheat. A sizable section of the total population is engaged in agriculture. Almost 49.45% of the total working population, are cultivators, and another 22% of the working population is engaged in agriculture as agricultural labourer. Of its rural working population, 58.54% is cultivator, and another 25.75% is engaged as agricultural labourer (State of Agriculture, p-4).

In terms of land holding, marginal farmers are the largest size class category in Chhattisgarh. They form 55.40% of the total land holding classes, followed by small farmers (21.96% of the total land owners), medium (21.61%) and large (0.98%) farmers, while 52.26% of the land is owned by medium farmers, followed by small, marginal and large farmers, each holding 20.67%, 16.14% and 10.92% respectively. (State of Agriculture, p-23).

4 Agro-Economic Research Centre For Madhya Pradesh And Chhattisgarh(2015) State Of Agriculture In Chhattisgarh, Study No.113. Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (M.P.)2014

Source: <http://jnkvv.org/PDF/AERC/Study-113.pdf> accessed on 25 July. 2017

Chhattisgarh scores comparatively low in terms of Agricultural GSDP to GSDP ratio. It was 18.57% in 2014-15. Here we will briefly look into some basic agricultural indicators in order to get a profile of Chhattisgarh's Agricultural scenario (Planning Commission)⁵.

Table 5-1 shows trends of major macroeconomic of Chhattisgarh. The first block of the table shows periodic of Agricultural Gross domestic product for the periods of 2004-05 to 2007-08, 2008-09 to 2011-12 and 2012-13 to 2014-15. The third and Fourth column of this block of the table gives the average of pre RKVY period (2004-05) and Post RKVY period (2008-09 to 2014-15). The last column shows the growth rate or pre-RKVY and Post-RKVY periodic average of Agricultural Gross Domestic Product Chhattisgarh. A considerable increase has taken place in the state AGDSP over the same period of RKVY's implementation in Chhattisgarh.

The second block of Table 5-1 further delineates the growth scenario. Here we have compared trend growth rates periods mentioned in the last paragraph. We see that the initial trend growth rate of 2004-05 to 2007-08 was 8.36 %, which become 11.75% during 2008-09 to 2011-12, but again came down drastically to 2.02% during 2012-13 to 2014-15. As a whole, the pre-RKVY and post RKVY trend growth remained same at 8.36%. In last section, of table 1 trends on Value of output has been shown in respective periods.

Table 5-2 shows the major land use statistics details and their changes over the period RKVY in Chhattisgarh. Despite a decline in net sown area, this state has shown an increase in Total cropped area, during the period of RKVY. Apart from that, both Gross and Net Area have grew by 26.39% and 18.79% during this period. It can be observed that Chhattisgarh has undergone considerable improvement in terms of cropping intensity and irrigation facility during this period.

5 Url: http://planningcommission.nic.in/data/datatable/data_2312/DatabookDec2014%2067.pdf
accessed on March 2017

5.1 RKVY IN CHHATTISGARH

Rashtriya Krishi Vikas Yojana, in Chhattisgarh started in 2007-08. Under this scheme, central government has allocated Rs. 337.63 Crore for Chhattisgarh in 2015-16. in 2016-17.

Chhattisgarh proposed 26 projects amounting to Rs. 245.4 Crores in 2016-17. Among different sectors, horticulture was given importance in terms of number of projects among the very small-sized projects (cost < 1 crore) and in the category small size category (cost 1 to 5 crore). In the medium-size category (cost 5 to 10 crore), there is only one project in micro/ minor irrigation sector. For large projects with cost 10 to 25 crore, priority area was micro/ minor irrigation and horticulture. Crop development is given priority in the very large (cost > 25 crore) category. So small projects are dominated by horticulture and large projects are by crop development 2016-17. In aggregate, crop development (165 crore) is given highest priority in terms of cost and while in terms of number of projects, horticulture is the priority area. Project with highest average cost is proposed for crop development. Table 5-3 offers the list of projects along with their codes, during the survey.

5.2 RESULTS FROM PRIMARY SURVEY

5.2.1 RESULTS FROM HOUSEHOLD SURVEY

In our study we have considered 10% of the projects for the state and analyzed the performance of RKVY in Chhattisgarh. The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analyzed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefiting the cultivators.

5.2.1.1 AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

The households are categorised on the basis of their operational holding of lands. Peasantry without any land of their own to cultivate is characterised as landless farmers. Farmers with operational holding of less than 2.5 acres categorised as marginal farmers. Households with

operational holding of 2.5-5 acres are considered as small farmers with 5-10 acres as medium farmers and with 10 acres or more are considered as large farmers.

Table 5-5 gives percentage wise break up of farmer respondents according to their land holding. Second and third columns of this table shows number of household from each size class. The percentage of each size class vis-a-vis beneficiary or non-beneficiary of RKVY is given in the next two columns. The last two columns show the size class wise share of each group. This table shows that for beneficiaries, small farmer was the biggest size class, whereas, for non-beneficiaries, maximum number of respondents belonged to marginal land holding size class (45%). Table 5-6 further breaks up the sample size according to four projects of RKVY.

Ideally, the attempt was to select beneficiaries and non-beneficiaries at 80:20 ratio. The ratio was more or less maintained for small, medium and large farmers. However, in the marginal farmer category the ratio was only 66% for the beneficiaries. No landless farmer was surveyed in this state.

It may be noted that a sizable section of the non-beneficiaries come from the small farm class size.

5.2.1.2 LAND HOLDING AND IRRIGATION

Table 5-7, offers comparison of land holding patterns between beneficiaries and non-beneficiaries. In terms of owning land, the response pattern is slightly haphazard. For small and medium farmers from the non-beneficiaries' cohort reportedly own more land than the beneficiaries. However, when total operated area is taken under consideration, every size class farmers, (other than small farmers) were found to be operating on higher piece of land than their counterparts from non-beneficiaries.

From Table 5-8, we can see that the marginal and small beneficiaries were far better off than the non-beneficiaries in terms of irrigation through canal. But irrigation through electricity driven rented tube well was dominated by the non-beneficiaries our survey. On the other hand, diesel engine tube-wells were found more popular among the larger land holding classes from

the beneficiaries of our survey. It appears that RKVY has provided some incentive to use electricity tube wells that could have been materialized only by the bigger land holding farmers.

5.2.1.3 INCOME: TOTAL AND PROJECT WISE

In this section we will discuss the earning pattern of the respondents of sample survey from Chhattisgarh. Farming households were asked about their earning during last 365 days, and the sources of their earning. Then their responses were sorted according to beneficiaries and non-beneficiaries.

Table 5-9 records the replies of respondents about their source of income. Maximum number of respondents answered others to be their major secondary source of income, followed by salaried jobs agricultural working and dairying, since primary source for all the respondents were farming.

5.2.1.4 AVERAGE INCOME:

Income and profit change are fundamental tools in measuring impact of any programme. Here, the changes in the profit levels of the respondents have been studied in order to study the impact of RKVY. Table 5-10 and Table 5-11 describes pattern and differences between beneficiaries and non-beneficiaries. Table 5-10 shows earning of beneficiaries and non-beneficiaries over 2015-16 and 2016-17. One thing that is ostensible that the beneficiaries reported to be engaged in more number of trades than non-beneficiaries. This table also makes it clear that average profit of the beneficiaries are higher than the non-beneficiaries, in both 2015-16 and 2016-17; and profitability has increased for both beneficiaries and non-beneficiaries over 2015-16 to 2016-17. According to Table 5-11, floriculture is proved to be the most lucrative trade in terms of profit. The beneficiaries, (because of sharp decline in the cost) reportedly enjoyed highest percentage (83%) increase in profit between 2015-16 and 2016-17.

On the other hand, in case of non-beneficiaries, it was farming where they received highest growth in their profit. The profit growth of the non-beneficiaries is higher than that of the beneficiaries; despite the fact that the cost of farming has grown faster for the non-beneficiaries (8%) than that of the beneficiaries (6%).

5.2.1.5 ANNUAL EXPENDITURE ON AGRICULTURE OF THE SAMPLE HOUSEHOLDS (TOTAL AND PROJECT WISE)

Rising agricultural cost has been one of the major causes of concern over last few years. Increasing spirals of expenditure in agriculture often dampen the profit and income of farmers, despite decent production and expected prices. This section attempts to trace the impact on agricultural production on beneficiaries and non-beneficiaries of RKVY.

Table 5-12 depicts the comparison of expenditures over the projects between beneficiaries and the non-beneficiaries over the financial year of 2015-16 and 2016-17. The percentage increase in cost of the non-beneficiaries, in all the projects is found to have superseded the beneficiaries.

Table 5-13 describes the scenario, with slightly more elaboration and nuance. The following five tables describe the percentage increase in expenditure over the years for beneficiaries and non-beneficiaries for different projects. We can observe the following pattern from these tables:

In all the cases (Table 5-12), the expenditure for the non-beneficiaries has grown at a faster rates: the highest growth being recorded in fuel for non-agricultural purposes for the non-beneficiaries (22%). Total rent on machinery and fuel expenditure are two other major heads (in all project), where the expenditure for the non-beneficiaries have increased at a considerable rate.

In the case of project 1, i.e. BGREI (Bringing Green Revolution to Eastern India), the growth rate of expenditure of the beneficiaries are moderately higher than the beneficiaries. Its only expenditure on purchased water for irrigation, where the beneficiaries' expenditure have been more than that of the non-beneficiaries.

In case of project 2, (Subsidy for Farmers for Shallow Tube-wells), in terms of total expenditure the non-beneficiaries have grown at 12% rate, whereas the same figure for the beneficiaries are 9%. In expenditure heads related to irrigation heavy difference between the growths of expenditure have been recorded. The RKVY beneficiaries have enjoyed visible control over expenditure rise on Expenditure on Purchased water for Irrigation or Expenditure on diesel.

Project 3 was distribution of minikits and seed. In this project the overall expenditure growth rate is same for both the beneficiaries and the non-beneficiaries. However, expenditure on agricultural machinery have rose at much faster rate for the non- beneficiaries than that of the beneficiaries. Same has happened in the case for expenditure on diesel.

Distribution of High yielding Seeds for maize was project 4. Here too, the growth of expenditure is much higher for non-beneficiaries than the beneficiaries of RKVY.

5.2.1.6 HOUSEHOLD ROSTER:

Of the two hundred households surveyed, 160 were beneficiaries of the RKVY project and 40 were non beneficiaries. In terms of the total population, it was 996 beneficiaries and 235 non-beneficiaries that were surveyed during the study. The table17 gives a brief description about the main characteristics of the sample size.

5.2.1.7 AGE GROUP WISE CLASSIFICATION

Table 5-18 describes the size Maximum number of people were found to be from the age group of 25 to 40. 25% of the beneficiaries and 27% of the non-beneficiaries were from this age group. At the same time 22% of the beneficiaries and 21% of the non-beneficiaries were fond from the age group of 15-20, 21% beneficiaries and 18% of non-beneficiaries were from the age group of 40-49.

5.2.1.8 CLASSIFICATION ACCORDING TO EDUCATIONAL LEVEL:

Highest number of respondents both in the case of beneficiaries and non-beneficiaries were found to be educated between 8th to 12th standard. Almost 37% of the beneficiaries were from this educational group, whereas 30% of the non-beneficiary respondents are from this category. (See Table 5-18)

5.2.1.9 OCCUPATIONAL CLASSIFICATION:

Maximum number of respondents stated self employment as their major secondary occupation. Almost 13% of beneficiaries responded to be engaged in salaried employment, where no one

from the non-beneficiaries found to be engaged in this. On the contrary, 17% of the non-beneficiaries were reportedly found to be engaged in dairy as secondary occupation, but only 1% of the beneficiaries were found to be engaged with dairy.

5.2.1.10 ASSET OWNERSHIP

Asset creation and capital accumulation in the rural and farm sector was one of the primary stated objective of RKVY. The survey attempted to trace this impact. Tables (Table 5-20, Table 5-21, and Table 5-22) show following findings:

In the study, the farmers were asked whether they own agricultural instruments like tractor, trolley, weeder, power sprayer etc. When compared in terms of numbers, for tractors, the distribution of assets were perfectly in line with the size of land holding.

Of the total number of tractors possessed by the beneficiaries, 4% tractors were found to be with the marginal farmers, 17 % with the small farmers, 31% for the medium farmers, and 33% for the large farmers. Where as in case of the non-beneficiaries only small, medium and large farmers were found in possession of tractors (all with 33% each)

Marginal farmers (from beneficiary segment) were found to be holding 17% of all assets possessed by the beneficiaries. This is the size class of farmers that seems to have benefited from the RKVY, as far as asset creation is concerned. The counterpart of this segment from the cohort of non-beneficiaries is reportedly holding only 1% of the total wealth held by the non-beneficiaries.

Table 5-20 briefly summaries the overall asset distribution among the beneficiaries and non beneficiaries. This is interesting to observe, that the non beneficiaries have reported to posses no agricultural assets (in terms of value) at all.

However, when queried, in terms of numbers of the specific agricultural tools they posses, few of the non beneficiaries responded to have some assets. The response pattern of both beneficiaries and non-beneficiaries have been recorded in Table 5-20. According to this table, for none of the assets the non beneficiaries reported to have possessing more assets than the

non beneficiaries. Even if we standardise the numbers of units possessed, we can see that the beneficiaries to have much more assets than the non beneficiaries.

5.2.1.11 Distribution of Livestock among the farmers:

Table 5-21 describes size class wise cattle possession of the farmers across beneficiaries and non beneficiaries. It may be noted here, it is the small farmers to have possessing maximum numbers of cattle.

5.2.1.12 TYPE OF HOUSE:

Table 5-22 describes the pattern of house of the respondents. As is expected, higher number of beneficiaries reported to have been residing in pucca houses. And on the other hand, higher proportion of non beneficiaries was found to have been staying in kachha houses.

5.2.1.13 OTHER ASSETS:

In almost all the heads, it can be seen, that the beneficiaries are supposed to have own more assets than the non-beneficiaries. It can be interesting topic to investigate causality of relationship between comparative affluence of the beneficiaries over the non-beneficiaries. The survey had collected the data on assets at project wise at disaggregated level too. But since, the trend described in the above table remains unaltered, detailed description of the projects are being avoided for now.

5.2.1.14 CROP DETAILS

Farmer respondents were asked about details of their crop production. Questions were set in order to a sense of the changes of crop production quantity, cultivable land, price, cost and profitability of the crops over periods. Table 5-24 gives the detail of the average profits earned by the beneficiaries and non-beneficiaries over the last financial year, for the major crops they had cultivated.

For cultivated area, the beneficiaries have shown an 18% increase over non beneficiaries in paddy. Similarly, the cultivated area for Gram, other pulses, soyabean and other crops of the

beneficiaries have grown 103%, 23%, 85% and 3% respectively. In wheat the cultivable land has decreased for the beneficiaries by 45%. The increase in quantity of crop production, beneficiaries showed an increase over beneficiaries of 27%, -46%, 107%, 14%, 62% and 2% for paddy, wheat, gram, other pulses, soyabean and other crops respectively. In case of irrigated area, the beneficiaries recorded growth of 18%, -40%, 88% -100%, 85% and 4% for crops of paddy, wheat, gram, other pulses, soyabean and other crops respectively.

5.2.1.15 AWARENESS ABOUT RKVY:

Awareness is one of the key components for generating desired result of any government run programme. Of the beneficiaries, 91% of the respondents replied to be in knowledge of RKVY. All the beneficiaries acknowledged to have faced benefits because of the RKVY. And 27% of them acknowledged that they have been benefiting from this project since last five years. Most importantly, 99% of the all beneficiaries responded that they have NOT been benefited from any other projects or assistance programme.

According to Table 5-26, Agriculture and Horticulture departments have been most consistently informing farmers about the project of RKVY. But, it should be noted that Television/ Radio, Gram Panchayat/ Zila Panchayat had no impact in disseminating information about the project.

5.2.1.16 AGRICULTURAL MECHANIZATION:

Agricultural asset building and asset building has been recognized very important for the overall development of agriculture, in RKVY. This section looks into the aspect of agricultural mechanization through RKVY. Though, question were asked about various agricultural instruments like tractors, rotavator, tiller and so on, responses could be procured for instruments like seed drill, sprayer, pump sets and sparkler. In terms of the numbers of these tools, the beneficiaries are definitely better off than the non- beneficiaries, as none of the non-beneficiaries reported to have any of the tools other than pump sets, asked for in the questionnaire. It is only the beneficiaries to have reported to have received any subsidies. The non-beneficiaries were supposed to depend on loans from the local banks. Table 5-27, describes the replies provided by the respondents. Maximum number of households purchased rotavator with the help of subsidies offered through RKVY. However, only one of these household

confirmed that they would have purchased this rotavator, even if there were no subsidies. Similarly, only one of the six households who purchased a speed drill replied that they would have made the purchase even if there were no subsidy offered to them. Five out of 8 purchasers of sprayers, 7 out of 16 purchasers of cutters and threshers responded that they would have made their purchases irrespective of the subsidies offered to them. In 45 cases where households have purchased some other agricultural machinery, because of subsidy, only seven of them would have purchased same machines even in absence of the subsidies.

The time consumption for direct benefit transfer, for purchasing rotovator and Cutter & Thresher, according to the respondents are excessively high.

5.2.1.17 SOIL TESTING:

Soil testing facility plays an important role. It helps farmers to choose best crops for their given soil condition and advises them to take necessary measures to prepare their soil for best production under given conditions. RKVY emphasizes on strengthening the soil testing facilities in order to increase agricultural productivity. RKVY gives special emphasis to offer easy and accessible soil testing facility. RKVY seems to have benefited the lower land holding farmers to avail this facility. Table 5-28 shows the percentage of farmers, who have availed this facility. It shows that all the small medium and large farmers have tested their soils. 54% of the small farmers from the beneficiaries too availed this facility. However, the percentages drastically drop when we consider the non-beneficiaries.

Table 5-29 provides further details on this. This shows, every respondent to have tested their soil have got the soil health card, and the test were done in Government Laboratories.

5.2.1.18 INFORMATION REGARDING RKVY:

This section collects information about the respondents' perception about accessibility of RKVY scheme. Expectedly, the beneficiaries found it more easily accessible than non-beneficiaries. If we look further, within the beneficiaries, we can find that higher size class farmers having a better edge in accessing information.

50% of the small farmers from non-beneficiary farming households opined that they were never informed about the eligibility criterion to apply for the subsidies, made available through RKVY. In another occasion 45% of the non-beneficiaries suggested that because of delay in reimbursement of subsidy amount, they did not avail the RKVY projects. 44% of the marginal farmers from non-beneficiaries expressed that this project is more biased toward the large farmers.

5.2.1.19 EVALUATION AND FEEDBACK OF RKVY

The respondents were also asked to express their feedback regarding RKVY in a 1-5 scale; 1 being very good and 5 being very poor. The respondents were asked to express their opinion about RKVY's impact on employment generation, expansion in production, improved marketing facilities, price realization, financial assistance, infrastructure building, capacity building, post harvesting storage, procurement and any other factor of their choice.

Table 5-31 gives the percentage wise weight of the evaluations made by the respondents. RKVY's role in increasing production, improving market facilities, better price realization, financial assistance and building infrastructure was appreciated by the respondents of our survey.

5.3 CONCLUSION:

Chhattisgarh had proposed for 26 projects with cost of total 245.4 crore rupees for 2016-17. Maximum number of projects were from horticulture department; however, maximum amount of money was allocated for crop development (165 crore). Four projects were selected for surveying. These were Bringing Green revolution to Eastern India, Subsidy to farmers for Shallow Tube well, Distribution of seed minikit (for pulses) and Distribution of Hybrid Maize Seed minikit.

Beneficiaries are found to be holding greater amount of land than the non-beneficiaries. Non beneficiaries were found engaged in professions like casual and agricultural labourer in higher proportion than the beneficiaries. This pattern is more evident for small farmers. Smaller farmers from the non-beneficiary segment were heavily dependent on the electric tube-wells for irrigation.

Beneficiaries of RKVY reported higher profit rate in agriculture and allied activities. The beneficiaries, who engaged in paddy and wheat cultivation, reported their profits to be 109% and 44%, respectively more than average profits of the non-beneficiaries. The expenditure increase was slightly lesser for the beneficiaries in most of the activities. We studied four projects during our survey. In three of them the yearly expenditure growth rate was lower for the beneficiaries. In the project of minikits for maize the expenditure growth was equal for both beneficiaries and non-beneficiaries.

Beneficiaries reported to have owning more assets than the non beneficiaries, and more frequently using the soil testing facilities offered by the government institutions.

RKVY's role in increasing production, improving market facilities, better price realization, financial assistance and building infrastructure was appreciated by the respondents of our survey.

Table 5-1: State Domestic Product from Agriculture (AGSDP) a of Chhattisgarh during pre and post RKVY periods (Unit Rupees Lakh, and percentage)

2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	Average of PRE RKVY (2004-05 to 2007-08)	Average of POST RKVY (2008-09 TO 2014-15) *	% Increase
1166642	1402190	1832019	1166642	1586403	36
Trend Growth Rates of AGSDP across states during pre and post RKVY periods					
2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	PRE RKVY (2004-05 to 2007-08)	POST RKVY (2008-09 TO 2014-15)	
8.36	11.75	2.02	8.36	8.36	
Value of Output: Agriculture and Allied Sectors (2004-05 prices)					
Average			Growth Rate		
Pre-RKVY (2004-05 to 2007-08)	Post-RKVY (2008-09 to 2014-15)	% increase	Pre-RKVY	Post-RKVY	
1683514	1886110	12.03	7.51	15.66	

Source: Calculations done on data provided by Planning Commission

Table 5-2: Major Land Use Details of Chhattisgarh

	Net area Sown (thousand Hectare)	% increase in Net area Sown	Total Cropped Area (thousand Hectare)	% increase	Gross irrigated area (thousand Hectare)	% increase in Gross irrigated area	Net Irrigated area (thousand Hectare)	% increase in Net Irrigated area
Pre-RKVY	4759.90	-1.52	5626.95	0.61	1286.06	26.39	1170.70	18.79
Post-RKVY	4687		5661		1625		1391	

Source: Land Use Statistics, directorate of Economics and Statistics⁶

6 Source: Url: http://eands.dacnet.nic.in/LUS_1999_2004.htm, accessed on March 2017

Table 5-3: List of selected Projects in Chhattisgarh

CHHATISGARH	Project Code	Name of project
Project 1	1	Bringing Green Revolution in Eastern India (Rice & Wheat)
Project 2	2	Subsidy to Farmer for SHALLOW TUBE WELL
Project 3	3	Distribution of Seed minikits (Pulses 4 kg,-Arhar, Urd, Moong)
Project 4	4	Distribution of Hybrid Maize Seed Minikit

Table 5-4: Distribution of Number of Projects and Total Cost across sectors in proposed fund requirement by Chhattisgarh (2016-17)

Sector	Number of projects					Total Project		Sector-wise share (%)		
	< 1 crore	1-5 crore	5 -10 crore	10-25 crore	>25 crore	Cost	Number	Avg cost	cost	no
Crop Development	0	0	0	0	1	165.5	1	165.5	100	100
Extension	1	0	0	0	0	0.5	1	0.5	100	100
Horticulture	6	7	0	1	0	32.5	14	2.3	100	100
Micro/Minor Irrigation	0	0	1	1	0	31.0	2	15.5	100	100
Organic Farming / Bio Fertiliser	1	0	0	0	0	0.8	1	0.8	100	100
Seed	2	5	0	0	0	15.2	7	2.2	100	100.0

Source: RKVY Division, Ministry of Agriculture and Farmers Welfare, GoI, New Delhi.

Table 5-5: Size class wise Percentage Distribution between Beneficiaries and Non-beneficiaries

	Number		%of each size class benefit wise			% of each size class		
			B ⁷	NB	Total	B	NB	
LL ⁸			--	--				
ML	35	18	66	34	100	22	45	
SL	69	72	85	15	100	43	30	
MD	37	7	84	16	100	23	18	
LA	19	3	86	14	100	12	8	
Total	160	40	80	20	100	100	100	

Table:5-6: Project Wise Number of Household and Percentage Distribution Between Beneficiaries and Non-Beneficiaries

Project1				Project2			Project3			Project4		
	B	NB	Total	B	NB	Total	B	NB	Total	B	NB	Total
LL	0	0	0	0	0	0	0	0	0	0	0	0
ML	7	1	8	6	1	7	11	4	15	5	1	6
SL	9	4	13	6	4	10	12	2	14	14	7	21
MD	15	4	19	12	3	15	9	2	11	13	2	15
LA	9	1	10	16	2	18	8	2	10	8	0	8
Total	40	10	50	40	10	50	40	10	50	40	10	50

7 B and NB are the abbreviations used for beneficiaries and Non-Beneficiaries

8 LL, ML, SL, MD and LA are the abbreviations for Landless, Marginal, Small, Medium and large land holding classes

Table 5-7: Average size of land holding (in hectare)

	Beneficiary					Non-Beneficiary				
	LL	ML	SM	MD	LA	LL	ML	SM	MD	LA
Owned land										
Leased-in Land / share cropping	0	1.75	3.7	6.8	14.1	0	1.5	3.9	6.2	16
Leased-out Land / share cropping	0	0.11	0.2	0.9	2.8	0	0	0.08	1.9	0
Total operated area (owned+LI-LO)	0	0	0	0	0	0	0	0	0	0
	0	1.9	3.9	7.7	16.9	0	1.5	4.0	8.18	16

Table 5-8: Irrigation Statistics between Beneficiaries and Non-beneficiaries (unit %)

Source of Irrigation	Mode of the source		Beneficiaries					Non-Beneficiaries				
			LL	ML	SM	MD	LA	LL	ML	SM	MD	LA
Irrigated Area by canal			--	7.41	5.08	0	0	--	0	2.07	4.44	4.17
Irrigated Area by tube well	Rented	Electric	--	14.4	2.07	0	0	--	69.52	6.22	4.44	4.17
		Diesel	--	8.19	2.92	6.94	7.65	--	1.90	4.15	8.00	7.29
	Owned	Electric	--	58.6	88.61	88.79	88.76	--	22.86	87.56	72.44	73.96
		Diesel	--	0.78	0	4.27	2.50	--	0	0	10.67	10.42
Irrigated Area by Tanks			--	0	0	0	0	--	0	0	0	0
Irrigated Area by Wells			--	0	0	0	0	--	0	0	0	0
Irrigated Area by others			--	10.5	1.32	0	1.09	--	5.71	0	0	0
Total			--	100.	100.	100	100	--	100	100	100	100

Table 5-9: Scheme of income for the Surveyed household

Source	Number of Households		Source	Percentage of Households	
	B	NB		B	NB
Farming	160	38	Farming	100	100
Horticulture	0	0	Horticulture	0	0
Floriculture	0	0	Floriculture	0	0
Dairy	13	0	Dairy	8	0
Poultry	1	0	Poultry	1	0
Sericulture	0	0	Sericulture	0	0
Agricultural Labour	15	9	Agricultural Labour	9	24
Casual Labour	32	16	Casual Labour	20	42
Forestry	0	4	Forestry	0	11
Fishing	0	0	Fishing	0	0
Bee-keeping	0	0	Bee-keeping	0	0
Salary	24	8	Salary	15	21
Other	63	10	Other	39	26

Table 5-10: Comparison Between Average Profit Levels Of The Beneficiaries And Non- Beneficiaries Between 2015-16 And 2016-17 (unit Rupees)

	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Farming	187088	156381	173512	143824
Dairy	22142	--	20570	--
Poultry	249375			
Agricultural Labour	15800			
Casual Labour	42922		41706	
Salary	203268		182947	
Other	117902	83185	40691	--

Table 5-11: Comparison Of Growth rates of Profits Between Beneficiaries And Non- Beneficiaries

	Beneficiary			Non-Beneficiary		
Source	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	7	5	8	9	9	9
Floriculture	--	--	--			
Dairy	8	12	8	--	--	--
Agricultural Labour	-1			-45		
Casual Labour	3	18	3	8		
Salary	11	10	11	10		
Other	137	11	190	--	13	--

Table 5-12: Percentage increase in average expenditure 2016-17 over 2015-16 (in all projects)

<i>Items</i>	Beneficiary	Non Beneficiary
Rent on leased-in land	0	8
Total rent on machinery (tractor, harvester etc)	8	12
Expenditure on purchased water for irrigation	9	6
Expenditure on electricity for irrigation	2	4
Expenditure on diesel	9	14
Expenditure on other fuels for agriculture	0	22
Any other	8	8
<i>Total expenditure on agriculture</i>	6	9

Table 5-13 : Average Annual Expenditure for Agriculture (Rs.)

<i>Year</i>	2016-17		2015-16	
<i>Items</i>	Beneficiary	Non Beneficiary	Beneficiary	Non Beneficiary
Rent on leased-in land	125316	43000	125556	40000
Total rent on machinery (tractor, harvester etc)	21034	17934	19503	15969
Expenditure on purchased water for irrigation	7961	7476	7320	7048
Expenditure on electricity for irrigation	17090	16323	16678	15688
Expenditure on diesel	29500	32353	26958	28353
Expenditure on other fuels for agriculture	4028	3917	4042	3214
Any other	57250	56125	53253	51755
<i>Total expenditure on agriculture</i>	125597	104185	118011	95835

Table 5-14: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project1</i> (BGREI)	Beneficiary	Non Beneficiary
Rent on leased-in land	-8	--
Total rent on machinery (tractor, harvestoretc)	6	1
Expenditure on purchased water for irrigation	7	-4
Expenditure on electricity for irrigation	2	2
Expenditure on diesel	5	2
Expenditure on other fuels for agriculture	--	--
Any other	2	8
<i>Total expenditure on agriculture</i>	3	5

Table 5-15: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project2</i> (Subsidy to farmer for shallow tube-well)	Beneficiary	Non Beneficiary
Rent on leased-in land	63	---
Total rent on machinery (tractor, harvestor etc)	16	25
Expenditure on purchased water for irrigation	5	32
Expenditure on electricity for irrigation	1	1
Expenditure on diesel	6	21
Expenditure on other fuels for agriculture	-2	0
Any other	11	7
<i>Total expenditure on agriculture</i>	9	12

Table 5-16: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project3</i> (Distribution of Seed Minikits)	Beneficiary	Non Beneficiary
Rent on leased-in land	4	0
Total rent on machinery (tractor, harvester etc)	9	20
Expenditure on purchased water for irrigation	8	-2
Expenditure on electricity for irrigation	2	7
Expenditure on diesel	19	22
Expenditure on other fuels for agriculture	1	22
Any other	2	2
<i>Total expenditure on agriculture</i>	6	6

Table 5-17: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project4</i> (Distribution of hybrid Maize Seed Minikit)	Beneficiary	Non Beneficiary
Rent on leased-in land	0	8
Total rent on machinery (tractor, harvester etc)	2	3
Expenditure on purchased water for irrigation	14	6
Expenditure on electricity for irrigation	5	12
Expenditure on diesel	3	57
Expenditure on other fuels for agriculture	0	-10
Any other	19	18
<i>Total expenditure on agriculture</i>	11	13

Table 5-18: Profile of the Sample In Chhattisgarh (Unit number for total Population, percentage for the rest)

% distribution		Beneficiary	Non-Beneficiary	Total
Total Sample Population		996	235	1231
% of dependent members		3	6	6
Age group	<=15	25	27	24
	>15 to 25	22	21	22
	>25 to 40	25	27	25
	>40 to 59	21	18	20
	>59	9	6	9
	All Groups	100	100	100
Education	Illiterate	10	10	10
	Class 1 to 5	21	29	23
	Above Class 5 to 8	20	19	20
	Above Class 8 to 12	37	30	36
	Above Class 12	9	7	8
	Other diploma	1	4	1
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	2	2	2
	All Groups	100	100	100
Occupation	1 cultivation	56	54	55
	2 agricultural labour	1	3	2
	3 dairy	1	17	4
	4 casual labour	8	6	8
	5 self-employment (specify)	13	17	14
	6 salaried employment	13	0	10
	16 housewife	1	0	1
	17 non-working	0	0	0
	888 others (no separate income	7	4	6
	All Groups	100	100	100

Table 5-19: Asset distribution in terms of value across beneficiaries and Non-beneficiaries

	Beneficiaries						Non - Beneficiaries					
	LL ⁹	ML	SL	MD	LA	Total	LL	ML	SL	MD	LA	Total
Percentage share of the value of the total asset holding		0	4	33	34	28	100	0	0	0	0	0

Table 5-20: Asset distribution (number wise, the main agricultural equipment)

		Beneficiary					Non-Beneficiary				
	Assets	LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
1	Tractor		3	25	24	16		0	2	3	3
2	Trolley		3	25	24	16		0	2	3	3
3	Weeder		0	6	15	7		0	1	3	3
4	Manual / Power Sprayers		19	60	36	18		3	10	6	3
5	Threshers		1	16	15	12		0	1	2	2
6	Electrical Pump sets		18	64	37	19		3	9	6	3
7	Diesel Pump sets		2	1	7	7		0	1	2	1
8	Sprinkler sets / Drip Irrigation Equipments		6	22	21	15		1	6	4	3
9	Leveler		1	9	12	11		0	0	1	3
10	Fodder Choppers		15	29	19	17		10	9	4	2
11	Bullock cart		0	4	1	0		0	0	0	0
12	Harvest Combine		0	0	0	2		0	0	0	0
13	Others		4	9	13	8		0	1	1	1

9 LL, ML, SL, MD& LA are the abbreviations for Landless farmers, Small farmers, Medium farmers and Large farmers respectively. These abbreviations are used only for tables.

Table 5-21: Number of Livestock and their Percentage distribution over size class

	Livestock	Beneficiary					Non-Beneficiary				
		LL	ML	SM	MD	LA	LL	ML	SM	MD	LA
2	Cow	0	17	41	25	16	0	29	38	25	8
4	Buffalo	0	24	36	24	15	0	50	25	25	0
6	Young Stock	0	17	41	26	16	0	32	36	24	8
8	Male Draught	0	30	50	18	3	0	73	18	9	0

Table 5-22: Type of Houses

Type	Beneficiary	Non-beneficiary	Total
Kachha	8	30	13
Pucca	51	38	49
Semi-Pucca	41	33	39
Total	100	100	100

Table 5-23: Percentage of Households Possessing Other Assets

	Beneficiary	Non-beneficiary
TV	67	55
Telephone	0	0
Mobile phone	100	95
Cycle	56	60
Two wheeler	38	35
Four wheeler	4	3
Refrigerator	33	35

Table 5-24: Growth of various indicators of beneficiaries over non-beneficiaries in 2016-17 (unit: percentage)

Sl. No.	Crop	Cultivated Area	Irrigated Area	Production	Marketed Quantity	Price received	Total paid-out costs	Profitability
1	Paddy	18	18	27	28	4	31	35
2	Wheat	-45	-40	-46	-57	-51	-35	-110
3	Gram	103	88	107	131	-12	155	75
4	Other Pulses	23	-100	14	23	-16	-11	15
5	Soyabean	85	85	62	62	17	60	121
6	Others	3	4	2	1	4	2	8

Table 5-25: Percentage Distribution of people with Awareness about RKVY

	Beneficiary	Non-Beneficiary
Have you heard about Rashtriya Krishi Vikas Yojana?	91	0
Benefits in 2016-17	100	0
Benefits in last 5 years	27	3
Benefits from any other government scheme in 2016-17	1	8
Benefits from any other government scheme in last 5 years	67	60

Table 5-26: Percentage Distribution of source of awareness

	Beneficiary	Non-Beneficiary	Total
Friends & neighbors	5	75	11
News Paper	1	0	1
Agriculture / Horticulture Department	79	6	72
SAU	1	0	1
KVK	1	0	1
Input Suppliers	4	6	5
TV/ Radio	0	0	0
Agri. Exhibitions	0	0	0
ZP/GP	9	13	9
Other sources	0	0	0
Total	100	100	100

Table 5-27: Intervention regarding Agricultural mechanization (for beneficiaries)

	Rot avator	Culti vators	See d drill	Spr ayers	Cutters & Thresher	Sprinkler	Others (specify)
No of beneficiaries of RKVY	8	1	6	8	16	2	45
Total Cost (Rs.)	910 000	3000 0	229 000	320 00	2643000	382 06	18830 00
Amount financed by loan (Rs.)			160 00		450000	229 24	16100 0
Source of Credit							
Bank					1		
MFI					4		2
Money lender			1		0		4
Other			1		4		3
Subsidy amount from RKVY (Rs.)	280 000	1500 0	900 00	160 00	640000		96000 0
Mode of Subsidy Transfer:							
Price Subsidy			2	8	1		3
DBT	8	1	4		15	2	42
If DBT, Number of days taken to receive subsidy?	103 0	60	935		2200	120	6765
Benefits derived from the implement (Codes Below)							3
Solved labor problem					6		4
Enabled timely operations				1	6		
Saved water			3				
Helped in good plant growth			3	4			29
Reduced Drudgery		1		3	4		9
Subsidy received from any other scheme					16	2	
Subsidy not received from any other scheme	8		6	8			45
If subsidy not received, number of households who have said who would buy this implement	1		1	5	7	2	7
If subsidy not received, number of households who have said who would not buy this implement	7	1	5	3	9		38

Table 5-28: Percentage of Farmers to have Undergone Soil Testing

Size Class	Beneficiary	Non-Beneficiary
LL	--	--
ML	54	27
SL	100	30
MD	100	33
LA	100	37

Table 5-29: Soil Testing

Land-size	Whether soil is tested in your area?	soil health card issued? (who tested soil)	soil health card issued? (Overall)	characteristics of soil	Place of soil test
					Government Institute
Beneficiary					
LL					
ML	11.7	11.7	6.7	6.7	11.7
SL	44.7	44.7	36.7	36.7	44.7
MD	28.2	28.2	33.3	33.3	28.2
LA	15.5	15.5	23.3	23.3	15.5
Total	100.0	100.0	100.0	100.0	100.0
Non-Beneficiaries					
LL					
ML	40.0	40.0	0.0	0.0	40.0
SL	30.0	30.0	50.0	50.0	30.0
MD	20.0	20.0	40.0	40.0	20.0
LA	10.0	10.0	10.0	10.0	10.0
Total	100.0	100.0	100.0	100.0	100.0

Table 5-30: Constrains faced in availing RKVY benefit

	No. Beneficiaries						No. of Non-beneficiaries					
	LL	ML	SL	MD	LA	Total	LL	ML	SL	MD	LA	Total
Information about RKVY programme details not easily available	0	22	21	28	28	100	0	10	45	28	17	100
Contact details of the department which pay subsidy not available	0	15	23	30	31	100	0	16	42	26	16	100
Eligibility or criteria for availing the subsidy not known	0	18	20	32	28	100	0	15	50	25	10	100
Procedure for the subsidy very tedious	0	24	21	26	29	100	0	21	44	30	4	100
No of documents required for availing subsidy are too many	0	18	27	26	29	100	0	26	35	26	13	100
Subsidy paid after purchase while initial payment remains the highest problem	0	18	24	33	24	100	0	17	42	27	12	100
Delay in transfer	0	21	21	33	24	100	0	15	45	27	12	100
Prescribed machinery/asset not easily available in the market	0	21	26	24	29	100	0	5	60	25	10	100
Institutional financing facility not available	0	16	30	32	22	100	0	16	46	21	16	100
Capacity building/technical advice not provided	0	24	22	30	23	100	0	10	37	42	10	100
Long time gap between the purchase and receiving the subsidy amount	0	22	24	33	21	100	0	7	39	36	17	100
Biased towards LA land owners	0	24	21	24	30	100	0	12	44	28	16	100
Poor quality of materials/machinery are supplied	0	20	30	25	25	100	0	27	27	40	7	100
Implementing agencies are located far away	0	14	32	30	24	100	0	14	50	23	14	100
Incidence of bribery	0	22	19	31	27	100	0	17	39	28	17	100
Lack of monitoring	0	21	25	29	25	100	0	18	41	29	12	100
Complementary inputs not available	0	18	24	33	25	100	0	10	48	28	14	100
Restricted Choice	0	21	24	31	23	100	0	14	43	32	11	100
Lack of marketing support	0	21	26	35	18	100	0	17	43	26	14	100
Any other (specify)	--	--	--	--	--	--	--	--	--	--	--	--

Table 5-31: Response of the Beneficiaries regarding RKVY

	Category of farmers	good	Poor
Employment generation			
	Marginal	74	43
	Small	72	6
	Medium	54	2
	Large	53	3
	Total	66	54
Increasing production			
	Marginal	97	39
	Small	99	5
	Medium	95	1
	Large	89	2
	Total	96	47
Improving marketing facilities			
No. Beneficiaries' opinion regarding RKVY			
	Marginal	71	40
	Small	85	6
	Medium	81	2
	Large	84	1
	Total	81	49
Better Price realization			
	Marginal	91	38
	Small	98	7
	Medium	70	3
	Large	63	6
	Total	80	54
Financial Assistance			
	Marginal	100	7
	Small	100	0
	Medium	100	0
	Large	100	0
	Total	100	7

Continued

	Category of farmers	good	Poor
Building Infrastructure			
	Marginal	77	45
	Small	78	6
	Medium	81	4
	Large	68	1
	Total	77	56
Capacity Building			
	Marginal	54	60
	Small	53	10
	Medium	48	4
	Large	42	2
	Total	51	76
Post harvesting storage			
	Marginal	14	78
	Small	26	16
	Medium	30	5
	Large	37	7
	Total	26	106
Procurement			
No. Beneficiaries' opinion regarding RKVY			
	Marginal	71	69
	Small	77	13
	Medium	70	2
	Large	58	4
	Total	72	88

6 GOA

Goa is one of the small states of India with the geographic area of 3,70,200 hectares. Though the state economy is very much influenced by services sector, agriculture still plays a crucial role in the economy. Agriculture sector is one of the key sectors for promotion of inclusive growth, enhancement of rural income and provision of food security. Gross cropped area in Goa is 1,56,462 hectare in 2015-16 (Goa Economic Survey 2016-17). The average size of land-holding is 1.14 hectares in Goa in 2010-11, while it varies from 0.47 hectares for marginal farmers (less than 1 hectare) to 24.15 hectares for large farmers (10 hectares and above). Agriculture contributes to 9.02% of GSDP in the state in 2015-16. Potential crops are Cashew, Coconut, Mango and paddy among others.

RKVY was started in 2007-08 in Goa. Under RKVY scheme, expenditure of Rs. 24.31 crore has been incurred in Goa during 2016-17 till 31st Jan 2017. Major projects completed under RKVY during the year 2016-17 are: Soil & Nutrient Mapping, Modernization of cattle Feed Plant, Hydroponic Green Fodder for eco-friendly & sustainable milk production, Open Sea Cage Culture - Phase – I. Goa proposed 3 projects amounting to Rs. 11 Crores in 2016-17. Fisheries is the priority sector the very small-sized projects (cost < 1 crore), animal husbandry in small size category (cost 1 to 5 crore) and Innovative Programmes/training/Capacity Building/Others in the medium-size category (cost 5 to 10 crore). No project is proposed for large projects with cost 10 to 25 crore, and the very large (cost > 25 crore) category. In aggregate, Innovative Programmes/training/Capacity Building/Others (8.5 crore) are given highest priority in terms of cost. Figure 9-1 shows allocation, release and expenditure in RKVY in Goa over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Goa. Due to small geographical region, number of projects ongoing in Goa is also less as compared to other states of India. So, we have selected one project for Goa and analysed the performance of RKVY by collecting primary information. List of selected projects for Goa is given below (Table 6-1).

6.1 RESULTS FROM PRIMARY SURVEY

6.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Goa, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, the majority of the beneficiary households (43% of beneficiary households) are marginal farmers, 38% are small farmers, 8% belong to medium category and 13% are large farmers. In the non-beneficiary households, 48% are marginal, 30% are small, 6% are medium and 16% are large farmers (Table 6-2).

6.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for kharif 2016-17, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tube well (electric and diesel) for irrigation in kharif season (Table 6-3A & 6-3B)

We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households (Table 6-4A & 6-4B). Households depend on tube well (electric and diesel) for irrigation in kharif season; some of it is rented.

In our sample, a total of 40 households are beneficiaries and 10 are non-beneficiaries. A total number of the population covered is 261, among them, 213 people belong to beneficiary households and 48 people belong to non-beneficiary households (Table 6-5). Among them in beneficiary households, 19% of the population is below 15 age group, while 17% are in above 60 age group. Rest 64% population in beneficiary households is in working-age-group. In non-beneficiary households, 17% of the population is below 15 age-groups, while 19% are in above 60 age group. Rest 65% population in non-beneficiary households is in working-age-group. Taking both the groups into consideration, 64% population is in working-age group. On the education front, 12% of the population in beneficiary group and 21% of non-beneficiary group is illiterate. 68% population in beneficiary households and 67% population in non-beneficiary households have attended school (class 1 to 12); while 17% population in beneficiary households and 10% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are self-employed or salaried employees. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 6-6)

6.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 53% of the beneficiary households have reported income from farming. For non-beneficiary households, 37% of households have reported farming as an occupation. 4% of beneficiary households have reported income from dairy. More households have reported income for non-beneficiary households from salary as compared to the beneficiary households (Table 6-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 406921 in Goa while the same for non-beneficiary households is Rs. 211579 in 2016-17 (Table 6-8). Average annual income for beneficiary households was Rs. 348750 in 2015-16 while it was Rs. 189526 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming and dairy apart from salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is

the average cost. Average income from salary is also higher for beneficiary households (Table 6-8).

Table 6-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 393300 which is higher than non-beneficiaries (Rs. 83857); so is the average cost (Rs. 153388 and Rs. 27714 respectively).

In terms of percentage change in income (Table 6-10), average income has increased by 22% in farming both for beneficiary and non-beneficiary households. However, the average cost has increased more for non-beneficiary households in farming than beneficiary households.

6.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 6-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation is higher for beneficiaries than non-beneficiaries.

Table 6-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in expenditure on electricity for irrigation for both beneficiary and non-beneficiary households, though the latter is higher than the former.

6.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Goa, for beneficiary households, farmers do not own large agricultural implements like tractor, trolley and leveller. Marginal and small farmers have more access to implements like weeder, manual/power sprayers, electrical & diesel pump sets and Sprinkler

sets/Drip Irrigation Equipment (Table 6-13A). In non-beneficiary households, farmers own equipment like weeder and electric pump sets (Table 6-13B).

Marginal, small and medium farmers from beneficiary households have a significant proportion of ownership of livestock (Table 6-14B). Small farmers among the beneficiaries have more livestock as compared to other classes.

In our sample, 90% of the households for beneficiary and 100% of non-beneficiary groups have pucca houses (Table 6-15). 10% households in beneficiary category have semi-pucca houses.

It is observed from our sample that 97.5% of beneficiary households possess TV while for non-beneficiaries, it is 100% (Table 6-16). In the case of mobile phones 100% of households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles, two-wheelers, four-wheelers and refrigerator are very high.

6.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, ragi, pulses, groundnut, fruit, vegetables and spices in the majority of the cultivated area (Table 6-17). But for non-beneficiary households, the emphasis is on paddy and pulses. (Table 6-18). Average production of paddy is much higher for beneficiary households (67.7 qtls) as compared to non-beneficiary households (32.86 qtls). Price of the marketed quantity for paddy is also more for the beneficiary household vis-à-vis non-beneficiary households; while for pulses; average price is higher for non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 6-19). For the majority of the crops, marginal farmers are getting less price. This is evident from the Table 6-19 which shows lower price is obtained by the marginal farmers for crops like paddy, pulses, vegetables and spices. More efforts are needed for marketing and procurement of the production.

In 2015-16 also, it is seen that price received by marginal farmers is low for paddy, urad, vegetables and spices as compared to farmers with larger land holdings.

6.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Goa, some households have income from livestock, which generates from sale of milk. All the households who have cattle in our sample in Goa, falls under the beneficiary category. Average income from livestock is 190000 in 2016-17 which has increased from Rs. 168333 in 2015-16.

6.1.1.7 AWARENESS REGARDING RKVY PROGRAMME

Regarding the awareness of RKVY, it is found that in our sample, non-beneficiary households mostly are not aware of RKVY. 90% of the non-beneficiaries have not heard about RKVY. 12.5% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 5% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 95% of the beneficiary households and 10% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 6-21 that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Goa, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours and Agriculture/Horticulture Department (Table 6-22). For non-beneficiary households, 100% of the households received information from friends and neighbours.

6.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural mechanization through RKVY. Beneficiaries have received support from RKVY programme in buying tiller in Goa (Table 10-22). The majority of them have received it through direct benefit transfer. Beneficiaries have reported that these implements have helped in solving labour problems and reduction in cost of agriculture. 14% of the cost of the tiller is provided by RKVY in Goa (Table 6-23).

In Goa, 95% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 6-24A). Among them, 50% of the households are provided with soil health card. The majority of them belong to the medium and large category. The tests have been done in government institutes for all the cases (Table 6-24B).

Within our sample in Goa, 100% of beneficiary households had undergone training and demonstration (Table 6-25). All the households found training beneficial and want more training. RKVY programme has facilitated training and demonstration in Goa for all categories of farmers.

6.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as delay in transfer, Long time gap between the purchase and receiving the subsidy amount, subsidy paid after purchase while initial payment remains the highest problem and lack of monitoring (Table 6-26A & 6-26B). Apart from these problems, marginal farmers feel that the programme faces the constraints like: Restricted Choice, complementary inputs not available and contact details of the department which pay subsidy not available.

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in increasing production, better price

realization, providing financial assistance, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in generating employment, post-harvesting storage, improving marketing facilities and procurement (Table 6-27A & 6-27B).

6.2 CONCLUSION

RKVY was started in 2007-08 in Goa. Under RKVY scheme, expenditure of Rs. 24.31 crore has been incurred in Goa during 2016-17 till 31st January 2017. Goa proposed 3 projects amounting to Rs. 11 Crores in 2016-17. Fisheries is the priority sector the very small-sized projects (cost less than 1 crore), animal husbandry in small size category (cost 1 to 5 crore) and Innovative Programmes/training/Capacity Building/Others in the medium-size category (cost 5 to 10 crore). No project is proposed for large projects with cost 10 to 25 crore, and the very large (cost > 25 crore) category. In aggregate, Innovative Programmes/training/Capacity Building/Others (8.5crore) is given highest priority in terms of cost.

In our sample in Goa, the majority of the beneficiary households (43% of beneficiary households) are marginal farmers, 38% are small farmers, 8% belong to medium category and 13% are large farmers. In the non-beneficiary households, 48% are marginal, 30% are small, 6% are medium and 16% are large farmers. In our sample, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tube well (electric and diesel) for irrigation in kharif season. 53% of the beneficiary households have reported income from farming. For non-beneficiary households, 37% of households have reported farming as an occupation. Average annual income of the sample beneficiary households in aggregate is Rs. 406921 in Goa while the same for non-beneficiary households is Rs. 211579 in 2016-17. Average annual income for beneficiary households was Rs. 348750 in 2015-16 while it was Rs. 189526 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming and dairy apart from salary. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other

fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. In our sample in Goa, for beneficiary households, farmers do not own large agricultural implements like tractor, trolley and leveller. Marginal and small farmers have more access to implements like weeder, manual/power sprayers, electrical & diesel pump sets and Sprinkler sets/Drip Irrigation Equipment. In non-beneficiary households, farmers own equipment like weeder and electric pump sets. In our sample, 90% of the households for beneficiary and 100% of non-beneficiary groups have pucca houses. 10% households in beneficiary category have semi-pucca houses. It is observed from our sample that 97.5% of beneficiary households possess TV while for non-beneficiaries, it is 100%. In the case of mobile phones 100% of households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles, two-wheelers, four-wheelers and refrigerator are very high.

It is seen from the sample that beneficiary households cultivated paddy, wheat, ragi, pulses, groundnut, fruit, vegetables and spices in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy and pulses. Average production of paddy is much higher for beneficiary households (67.7 qtls) as compared to non-beneficiary households (32.86 qtls). Price of the marketed quantity for paddy is also more for the beneficiary household vis-à-vis non-beneficiary households, while for pulses, average price is higher for non-beneficiary households.

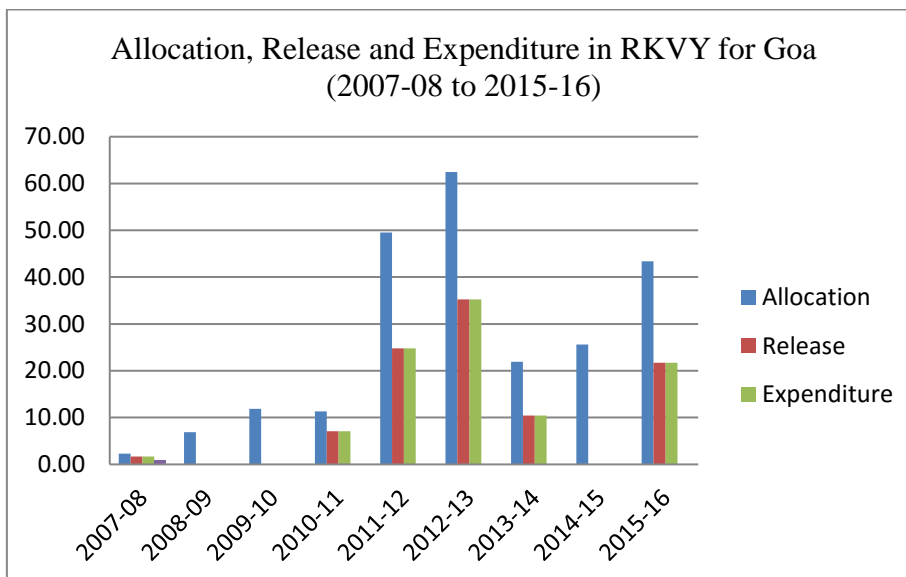
Regarding the awareness of RKVY, it is found that in our sample, non-beneficiary households mostly are not aware of RKVY. 90% of the non-beneficiaries have not heard about RKVY. 12.5% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years.

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. Beneficiaries in Goa have received support from RKVY programme in buying tiller in Goa. The majority of them have received it through direct benefit transfer. Beneficiaries have reported that these implements have helped in solving

labour problems and reduction in cost of agriculture. 14% of the cost of the tiller is provided by RKVY in Goa. In Goa, 95% of the farmers have reported that the soil has been tested to know the nature of the soil. The tests have been done in government institutes for all the cases. RKVY programme also facilitated training and demonstration for farmers in Goa.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as delay in transfer, long time gap between the purchase and receiving the subsidy amount, payment of subsidy after purchase while initial payment remains the highest problem and lack of monitoring. Apart from these problems, marginal farmers feel that the programme faces the constraints like: Restricted Choice, complementary inputs not available and contact details of the department which pay subsidy not available. According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in increasing production, better price realization, providing financial assistance, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in generating employment, post-harvesting storage, improving marketing facilities and procurement. Despite these drawbacks, RKVY programme is quite successful in Goa in promoting agriculture mechanization.

Figure 6-1: Allocation, Release and Expenditure in RKVY for Goa (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 6-1: List of selected project name and code

Project Code	Project Name
01	Mechanization in Agriculture

Table 6-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	17(43)	7(70)	24(48)
Small	15(38)	0(0)	15(30)
Medium	3(8)	0(0)	3(6)
Large	5(13)	3(30)	8(16)
Total	40(100)	10(100)	50(100)

Table 6-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.88	4.37	9.17	11.40
Leased-in Land/share cropping (acre)							
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.88	4.37	9.17	11.40
Irrigated Area by canal (%)				0.0	0.0	0.0	0.0
Irrigated Area by tube well (%)	Rente d	Electric		0.0	0.0	0.0	0.0
		Diesel		0.0	0.0	0.0	0.0
	Owne d	Electric		100.0	64.0	100.0	80.0
		Diesel		0.0	36.0	0.0	20.0
Irrigated Area by Tanks (%)				0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)				0.0	0.0	0.0	0.0
Irrigated Area by others (%)				0.0	0.0	0.0	0.0

Table 6-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.79			
Leased-in Land/share cropping (acre)							
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.79			
Irrigated Area by canal (%)				0.0			
Irrigated Area by tube well (%)	Rente d	Electric		0.0			
		Diesel		0.0			
	Owne d	Electric		100.0			
		Diesel		0.0			
Irrigated Area by Tanks (%)				0.0			
Irrigated Area by Wells (%)				0.0			
Irrigated Area by others (%)				0.0			

Table 6-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.71	3.30	5.83	18.10
Leased-in Land/share cropping (acre)							
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.71	3.30	5.83	18.10
Irrigated Area by canal (%)				0.0	0.0		0.0
Irrigated Area by tube well (%)	Rented	Electric		0.0	0.0		0.0
		Diesel		58.3	0.0		0.0
	Owned	Electric		41.7	61.3		100.0
		Diesel		0.0	38.7		0.0
Irrigated Area by Tanks (%)				0.0	0.0		0.0
Irrigated Area by Wells (%)				0.0	0.0		0.0
Irrigated Area by others (%)				0.0	0.0		0.0

Table 6-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)				1.67			
Leased-in Land/share cropping (acre)							
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.67			
Irrigated Area by canal (%)				0.0			
Irrigated Area by tube well (%)	Rented	Electric		0.0			
		Diesel		0.0			
	Owned	Electric		100.0			
		Diesel		0.0			
Irrigated Area by Tanks (%)				0.0			
Irrigated Area by Wells (%)				0.0			
Irrigated Area by others (%)				0.0			

Table 6-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	19	17	18
	>15 to 25	15	19	16
	>25 to 40	28	27	28
	>40 to 59	21	19	21
	>59	17	19	18
	All Groups	100	100	100
Education	Illiterate	12	21	14
	Class 1 to 5	11	17	12
	Above Class 5 to 8	12	8	11
	Above Class 8 to 12	45	42	44
	Above Class 12	17	10	16
	Other diploma	1	0	1
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	1	2	2
	All Groups	100	100	100

Table 6-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
Cultivation	19	4	16
agricultural labour	0	0	0
Dairy	0	0	0
casual labour	0	0	0
self-employment (specify)	5	2	4
salaried employment	14	31	17
Forestry	0	0	0
Horticulture	0	0	0
Floriculture	0	0	0
Sericulture	0	0	0
Fishing	0	0	0
Aquaculture	0	0	0
Poultry	0	0	0
beekeeping	0	0	0
Student	24	23	24
housewife	23	25	23
non-working	12	10	11
others (no separate income)	3	4	3
All Groups	100	100	100

Table 6-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	53	37
Horticulture	0	0
Floriculture	0	0
Dairy	4	0
Poultry	0	0
Sericulture	0	0
Agricultural Labour	0	0
Casual Labour	1	0
Forestry	0	0
Fishing	0	0
Beekeeping	0	0
Salary	24	47
Other	18	16
Total	100	100

Table 6-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	479150	185425	293725	102000	34714	67286
Horticulture						
Floriculture						
Dairy	190000	85000	105000			
Poultry						
Sericulture						
Agricultural Labour						
Casual Labour	80000					
Forestry						
Fishing						
Beekeeping						
Salary	443889		443889	294444		294444
Other	222857	135000	87857	218667	200000	18667
Total	406921	174723	232198	211579	55375	156204

Table 6-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	393300	153388	239913	83857	27714	56143
Horticulture						
Floriculture						
Dairy	151667	71000	80667			
Poultry						
Sericulture						
Agricultural Labour						
Casual Labour	60000					
Forestry						
Fishing						
Beekeeping						
Salary	418889			265556		
Other	194143	115000	79143	208000	200000	8000
Total	348750	144862	203888	189526	49250	140276

Table 6-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	22	21	22	22	25	20
Dairy	25	20	30			
Casual Labour	33					
Salary	6			11		

Table 6-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>Items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	0	0	0
Total rent on machinery (tractor, harvester etc.)	0	7500	0	6643
Expenditure on purchased water for irrigation	10000	0	9000	0
Expenditure on electricity for irrigation	3439	500	2996	400
Expenditure on diesel	5838	0	4850	0
Expenditure on other fuels for agriculture	1200	0	910	0
Any other	176265	27143	141998	21014
<i>Total expenditure on agriculture</i>	196742	35143	159753	28057

Table 6-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land		
Total rent on machinery (tractor, harvester etc.)		13
Expenditure on purchased water for irrigation	11	
Expenditure on electricity for irrigation	15	25
Expenditure on diesel	20	
Expenditure on other fuels for agriculture	32	
Any other	24	29
<i>Total expenditure on agriculture</i>	23	25

Table 6-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor					
Trolley					
Weeder	0	0	83	0	17
Manual/power sprayers	0	26	48	4	22
Threshers					
Drier					
Electrical Pump sets	0	38	38	8	17
Diesel Pump sets	0	0	67	0	33
Sprinkler sets/Drip Irrigation Equipment	0	14	14	29	43
Cane Crusher/Agro-processing Equipment					
Leveller					
Fodder Choppers					
Bullock cart					
Harvest Combine					
Others	0	43	38	8	13

Table 6-13B: Asset ownership by non-beneficiary households (% of number of implements)
(2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor					
Trolley					
Weeder					
Manual/power sprayers	0	100	0	0	0
Threshers					
Drier					
Electrical Pump sets	0	100	0	0	0
Diesel Pump sets					
Sprinkler sets/Drip Irrigation Equipment					
Cane Crusher/Agro-processing Equipment					
Leveller					
Fodder Choppers					
Bullock cart					
Harvest Combine					
Others					

Table 6-14A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0	30	50	20	0
Buffalo	0	14	57	29	0
Young Stock	0	9	64	27	0
Male Draught					
Sheep					
Goat					
Pig					
Poultry	0	0	0	0	100
Others	0	0	0	0	100

Table 6-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	0	0	0
Pucca	90	100	92
Semi-Pucca	10	0	8
Others	0	0	0
Total	100	100	100

Table 6-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	97.5	2.5	100	100	0	100
Telephone	5	95	100	0	100	100
Mobile phone	100	0	100	100	0	100
Cycle	22.5	77.5	100	10	90	100
Two wheeler	95	5	100	100	0	100
Four wheeler	45	55	100	10	90	100
Refrigerator	90	10	100	80	20	100
Others (specify)						

Table 6-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivate d Area (in Acres)	Irrigate d Area (in Acres)	Productio n (Qtls)	Markete d Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	3.55	1.48	67.68	58.25	1838.75	39675.00	67432.19
wheat	5.00	0.00	25.00	25.00	10000.00	80000.00	170000.00
ragi	4.00	4.00	5.00	5.00	1500.00	25000.00	-17500.00
other pulses	3.11	1.23	14.55	14.52	10017.24	48586.21	96836.49
groundnut	1.70	0.60	8.20	8.00	6400.00	18400.00	32800.00
fruit	2.60	2.60	9700.00	9700.00	11.40	68200.00	42380.00
vegetable	1.00	0.79	2.63	2.63	25371.43	7571.43	59119.18
Spices	2.50	0.14	1.47	1.47	43428.57	23142.86	40759.18
others	7.69	7.25	3138.67	3138.67	30623.33	407444.44	95708991.09

Table 6-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	1.79	0.14	32.86	23.86	1628.57	15714.29	23138.77
other pulses	1.67	0.17	7.33	7.33	9333.33	22500.00	45944.44

Table 6-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1782	1830	1950	1990		1629			
wheat			1000							
ragi			1500							
other pulses		10000	10167	9333	10333		9333			
groundnut			6500	6000						
fruit		12	11	11	12					
Vegetable		28867	29333		3000					
spices		41667	45000	45000	44000					

Table 6-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1712	1757	1867	1840		1557			
wheat			10000							
ragi			15000							
urad		8857	9000	8167	9000					
other pulses			6750	5500			8333			
fruit		10	10	10	11					
vegetable		28833	29167		3200					
spices		42000	44000	42000	40000					

Table 6-21: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about RKVY?	100	0	100	10	90	100	82	18	100
Did you receive any benefits from RKVY in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from RKVY in the last five years excluding this year?	12.5	87.5	100	0	100	100	10	90	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	5	95	100	0	100	100	4	96	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	95	5	100	10	90	100	78	22	100

Table 6-22: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	25	100	27
Newspaper	0	0	0
Agriculture/Horticulture Department	75	0	73
SAU	0	0	0
KVK	0	0	0
Input suppliers	0	0	0
TV/radio	0	0	0
Agri. exhibitions	0	0	0
ZP/GP	0	0	0
Other sources	0	0	0
Total	100	100	100

Table 6-23: Details of intervention in agriculture mechanization in Goa for beneficiaries

		Tiller
No. of beneficiaries of RKVY		40
Total Cost (Rs.) (Average)		103500
Amount financed by loan (Rs.) (Average)		14500
Source of Credit		
	Bank	
	MFI	6
	Money lender	3
	Other	6
Subsidy amount from RKVY (Rs.) (Average)		45000
Mode of subsidy Transfer (%)		
	Price subsidy	
	DBT	100

If DBT, Number of days taken to receive subsidy?		2.2
Benefits derived from the implement (%)		
1	Solved labour problem	
2	Enabled timely operations	72
3	Saved water	
4	Helped in controlling weed	
5	Helped in good plant growth	
6	Reduced Drudgery	
7	Helped in transportation	
8	Reduced cost of Cultivation	28
9	Increased cropping intensity	
10	Not useful	
Subsidy not received from any other scheme		40

Table 6-24A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Whether soil is tested in your area?		Soil health card issued? (who tested soil)	
	Yes	No	Yes	No
Beneficiary				
Landless				
Marginal	88	12	7	93
Small	100	0	67	33
Medium	100	0	100	0
Large	100	0	100	0
Total	95	5	50	50
Non-beneficiary				
Landless				
Marginal	100	0	25	75
Small				
Medium				
Large	50	50		
Total	70	30	25	75

Table 6-24B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Do not know
Beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small			
Medium			
Large			
Total	100	0	0

Table 6-25: Information regarding training and demonstration under RKVY (% of households)
(2016-17)

			Type of training					
	Number of Beneficiaries	% of beneficiary households undergone training	Demonstration	Field Visit	Kris hi Mela	Others	% of households found training beneficial	% of households who want more training
Landless								
Marginal	17	100	0	0	100	0	100	100
Small	15	100	0	0	100	0	100	100
Medium	3	100	0	0	100	0	100	100
Large	5	100	0	0	100	0	100	100
Total	40	100	0	0	100	0	100	100

Table 6-26A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		0	0	0	0	0
Contact details of the department which pay subsidy not available		25	33	0	0	22
Eligibility or criteria for availing the subsidy not known		0	0	0	0	0
Procedure for the subsidy very tedious		4	0	67	0	6
No of documents required for availing subsidy are too many		0	13	33	0	6
Subsidy paid after purchase while initial payment remains the highest problem		54	60	0	50	52
Delay in transfer		63	80	67	63	68
Prescribed machinery/asset not easily available in the market		0	7	0	0	2
Institutional financing facility not available		0	7	0	0	2
Capacity building/technical advice not provided		0	0	0	0	0
Long time gap between the purchase and receiving the subsidy amount		58	80	33	25	58
Biased towards large land owners		0	0	0	0	0
Poor quality of materials/machinery are supplied		0	0	0	0	0
Implementing agencies are located far away		13	0	67	13	12
Incidence of bribery		0	7	0	0	2
Lack of monitoring		38	60	67	50	48
Complementary inputs not available		38	33	0	25	32
Restricted choice		38	33	0	25	32
Lack of marketing support		29	47	33	13	32
Any other (specify)		0	0	0	0	0

Table 6-26B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		0	0	0	0	0
Contact details of the department which pay subsidy not available		0	0	0	0	0
Eligibility or criteria for availing the subsidy not known		29	0	0	25	18
Procedure for the subsidy very tedious		29	0	0	0	14
No of documents required for availing subsidy are too many		0	0	0	0	0
Subsidy paid after purchase while initial payment remains the highest problem		13	0	0	25	10
Delay in transfer		29	0	0	38	20
Prescribed machinery/asset not easily available in the market		0	0	0	13	2
Institutional financing facility not available		8	0	0	0	4
Capacity building/technical advice not provided		29	0	0	38	20
Long time gap between the purchase and receiving the subsidy amount		29	0	0	38	20
Biased towards large land owners		0	0	0	13	2
Poor quality of materials/machinery are supplied		29	0	0	38	20
Implementing agencies are located far away		4	0	0	13	4
Incidence of bribery		8	0	0	0	4
Lack of monitoring		13	0	0	38	12
Complementary inputs not available		21	0	0	13	12
Restricted choice		21	0	0	13	12
Lack of marketing support		25	0	0	25	16
Any other (specify)		0	0	0	0	0

Table 6-27A: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless										
Marginal	38	33	71	0	38	33	71	0	63	8
Small	53	47	100	0	67	33	80	20	93	7
Medium	33	67	100	0	67	33	33	67	67	33
Large	25	38	63	0	50	13	63	0	63	0
Total	40	40	80	0	50	30	70	10	72	8

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 9- 27B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless								
Marginal	71	0	71	0	25	46	54	17
Small	100	0	93	7	40	60	67	33
Medium	100	0	100	0	33	67	67	33
Large	63	0	63	0	50	13	38	25
Total	80	0	78	2	34	46	56	24

Note: “S” represents satisfactory and “NS” represents not satisfactory.

7 GUJARAT

Gujarat is in western part of India with coastline of 1500 sq. km. About 58% of the land area in Gujarat falls in arid and semi-arid zone or along salinity affected areas. Forest area is over 11.3 percent of its total geographical area. Gujarat is a diversified agricultural economy. The State agriculture economy has witnessed a shift towards high value crops like cotton, groundnuts, fruits and vegetables and condiments and spices from low value cereals and other crops. More than 42 percent of its population now directly depends on agriculture & allied activities. Gross cropped area in Gujarat is 12487 thousand hectare in 2015-16 (Socio-Economic Review of Gujarat 2016-17¹⁰). The average size of land-holding is 2.02 hectares in Gujarat in 2010-11. Small and marginal farmers constitute about 66% of the total farmers in the state. Crops and livestock sectors contribute to 13.8 percent of GSVA in the state in 2015-16 (constant 2011-12 prices). The State agriculture economy has witnessed a shift towards high value crops like cotton, groundnuts, fruits and vegetables and condiments and spices from low value cereals and other crops.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Gujarat. Under RKVY scheme, Central Government has allocated Rs. 315.27 Crore for Gujarat, for which Rs. 155.31 Crore funds has been released and expenditure of Rs. 89.39 crore has been incurred in Gujarat during 2016-17 till 31st July 2017. In 2016-17, Gujarat has proposed projects in 8 different sectors. In terms of project cost, the maximum amount goes to Natural Resource Management. No project is proposed in the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 21 projects proposed with priority sectors being Seed and horticulture. In the medium-size category (cost 5 to 10 crore), crop development and horticulture are priority areas. For large projects with cost 10 to 25 crore, 5 sectors has got one project each. Four projects are allocated in Natural Resource Management in the very large (cost > 25 crore) category. So small projects are dominated by seed and horticulture and large projects are by Natural Resource Management in 2016-17. In aggregate, Natural Resource Management

¹⁰ Socio-Economic Review of Gujarat 2016-17, Directorate of Economics & Statistics, Government of Gujarat, Gandhinagar, Gujarat

(171crore) is given highest priority both in terms of cost and in terms of number of projects. Project with highest average cost is also proposed for the same sector. Figure 10-1 shows allocation, release and expenditure in RKVY in Gujarat over the years 2007-08 to 2015-16. This study analyses performance of RKVY for the year 2016-17 in Gujarat. We have selected 8 projects for Gujarat and analysed the performance of RKVY by collecting primary information. List of selected projects for Gujarat is shown in Table 7-1.

7.1 RESULTS FROM PRIMARY SURVEY

7.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Gujarat, total 200 households are considered for the survey, among which 160 households are beneficiaries of RKVY and 40 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed. In our sample, the majority of the beneficiary households (64% of beneficiary households) are marginal farmers, 21% are small farmers, 12% are medium farmers and 4% are large farmers. In the non-beneficiary households, 10% are marginal, 5% are small farmers, 3% are medium farmers and 83% are large farmers (Table 7-2).

7.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tubewell (electric and diesel), canals and tanks for irrigation in Kharif season (Table 7-3A & Table 7-3B). We have collected separate data for land-holding and

irrigation for Kharif and Rabi season. For Rabi 2016-17 also, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households (Table 7-4A & Table 7-4B).

In our sample, a total of 160 households are beneficiaries and 40 are non-beneficiaries. A total number of the population covered is 1179, among them, 966 people belong to beneficiary households and 213 people belong to non-beneficiary households (Table 7-5). Among them in beneficiary households, 24% of the population is below 15 age-group, while 11 percent are in above 60 age-group. In non-beneficiary households, 25% of the population is below 15 age-groups, while 9 percent are in above 60 age-group. Taking both the groups into consideration, 65% population is in working-age group. On the education front, 19% of the population in beneficiary group and 30% of non-beneficiary group is illiterate. 72% population in beneficiary households and 64% population in non-beneficiary households have attended school (class 1 to 12); while 5% population in beneficiary households and 3% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labor, agricultural labour or salaried employees or are engaged in dairy (Table 7-6).

7.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 38% of the beneficiary households have reported income from farming. For non-beneficiary households, 8% of households have reported farming as an occupation. 18% of beneficiary households and 15% of non-beneficiary households have reported income from dairy. 18% of households from beneficiary households and 40% of non-beneficiary households have reported income from casual labour (Table 7-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 89566 in Gujarat while the same for non-beneficiary households is Rs. 76857 in 2016-17 (Table 7-8). Average annual income for beneficiary households was Rs. 78525 in 2015-16 while it was Rs. 65304 for non-beneficiary households in the same year. Average income for beneficiary households in Gujarat are higher than non-beneficiary households and both have increased from

2015-16 to 2016-17. Major sources of income are farming and dairy apart from salary and casual labour. For farming, the average income of non-beneficiary households is higher than beneficiaries; so is the average (Table 7-8).

Table 7-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 112221 which is lower than non-beneficiaries (Rs. 154833); so is the average cost (Rs. 48903 and Rs. 77143 respectively). In terms of percentage change in income (Table 7-10), average income has increased by 12% in farming for beneficiary and 25% for non-beneficiary households. However, the average cost has increased more for non-beneficiary households in farming than beneficiary households.

7.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 7-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation is higher for beneficiaries than non-beneficiaries.

Table 7-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in purchase of water for irrigation for beneficiary households. Expenditure on electricity for irrigation for both beneficiary and non-beneficiary households has also increased, though the later is higher than the former.

7.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Gujarat, for beneficiary households, beneficiary farmers own agricultural implements like tractor, trolley, weeder, sprayers, threshers, pump sets, Sprinkler sets / Drip Irrigation Equipments, Fodder Choppers and leveller. Medium farmers have more access to implements like Sprinkler sets / Drip Irrigation Equipments (Table 7-13A). Marginal & Small

farmers have equipments like tractor, trolley, manual/ power sprayers, diesel pump sets, leveller and fodder chopper. In non-beneficiary households, farmers own equipments like tractor, trolley, sprayers, electric pump sets and levellers (Table 7-13B). Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 7-14B). They own cows, buffalo, young stock, male draught and goat.

In our sample, 49% of the households for beneficiary and 15% of non-beneficiary groups have pucca houses (Table 7-15). 20% households in beneficiary category and 23% in the non-beneficiary category have semi-pucca houses. It is observed from our sample that 65% of beneficiary households possess TV while for non-beneficiaries, it is 40% (Table 7-16). In the case of mobile phones, 98% of beneficiary and 90% of non-beneficiary households have reported to possess it. For both the categories of households, ownership of bicycles is 65%. Some households have two-wheelers, four wheelers and refrigerator.

7.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that both the beneficiary and non-beneficiary households cultivated paddy, wheat, jowar, bajra, maize, tur, cotton, fruits and vegetables in the majority of the cultivated area (Table 7-17 and Table 7-18). Average production of paddy is higher for beneficiary households (82 qtls) as compared to non-beneficiary households (80 qtls). But the price of the marketed quantity for paddy and wheat is higher for the non-beneficiary household vis-à-vis beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 7-19). Unlike other states, marginal farmers are getting lower price than small farmers for paddy, wheat, bajra for beneficiary households (Table 7-19). For non-beneficiary households, small farmers are getting higher price than marginal farmers, for paddy and wheat. In 2015-16 also, it is seen that price received by marginal farmers is higher than small farmers for paddy, maize and cotton, for beneficiary households.

7.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Gujarat, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, around 100% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 99% (Table 7-21).

The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries as compared to beneficiaries both in 2016-17 and 2015-16. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for beneficiaries (Table 7-22).

7.1.1.7 AWARENESS REGARDING RKVY PROGRAM

Regarding the awareness of RKVY, it is found that in our sample, households in Gujarat are quite aware of the program. 100% of the beneficiaries and 20% of the non-beneficiaries have heard about RKVY. 23% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 7% of the beneficiary households and none of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 58% of the beneficiary households and 20% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17 (Table 7-21).

In our sample in Gujarat, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, Agriculture / Horticulture Department and Zila / Gram Panchayet (Table 7-22). For non-beneficiary households, 100% of the households received information from friends and neighbours.

7.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY (Table 7-23). In the project “Achieving To increase the area and production of Hybrid paddy in Ahmedabad district”, seeds or planting material for crops like paddy were provided to the households (Table 7-23). The majority of the farmers have received benefit through price subsidy (Table 7-23). RKVY provided assistance in watershed development also in Gujarat. The development work was done under the project “Creation of farm pond to increase agriculture production in the state”. 60% of marginal farmers have benefitted from the intervention (Table 7-24). 50% of the marginal farmers are also reported to be have improved availability of water through the intervention.

In Gujarat, 78% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil (Table 7-25A). Among them, 53% of the households are provided with soil health card. The tests have been done in government institutes for 94% of the cases (Table 7-25B).

Within our sample in Gujarat, 50% of beneficiary households had undergone training and 48.8% had undergone demonstration (Table 7-26). 86% of the households found training beneficial and want more training. It is also found in our study that 98% of the beneficiary and 90% of the non-beneficiary households have mobile phones; among them 87% of beneficiary and 55% of non-beneficiary households receive text messages. Only 39% of the beneficiary households and none of the non-beneficiary households have reported to receive agriculture-related text messages (Table 7-27).

7.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned their major problem as Lack of monitoring, Capacity building/technical advice not provided, Long time gap between the purchases and receiving the subsidy amount, Lack of marketing support and Delay in transfer.

Lack of monitoring, Lack of marketing support and Capacity building/technical advice not provided is specifically highlighted by marginal farmers. For non-beneficiary households, major problems are: Institutional financing facility not available, Information about RKVY programme details not easily available and Lack of marketing support (Table 7-28A & Table 7-28B).

According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in building infrastructure, increasing production, capacity building. However, it appears that RKVY has not been very successful in procurement and improving marketing facilities in the state (Table 7-29A & Table 7-29B).

7.1.2 RESULTS FROM IMPLEMENTING AGENCY

In Gujarat, implementing agencies of three projects were surveyed. These projects are subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat, a project on pack house for fruit and vegetables, setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district. In the survey, implementing agency representatives informed that the request for the projects was made by the implementing agencies for two projects and one project was proposed by the nodal agency (Table 7-30). It can be seen that two of the projects were not included in the DAP (Table 7-31). Table 7-32 shows details of fund flow. Table 7-32 shows the fund flow for the specified projects. Major problems in fund flow appear to be delayed release and reduced amount.

Table 7-33 highlights the existing physical capacity of the factors that the project aims to address and the contribution of the projects in enhancing that. Vendors were identified for execution of these projects through tender process. However, e-tendering process was followed for the project “subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat”, only. Its implementing agency suggested that e-tendering improves the efficiency of the tendering process.

The respondent expressed the view that the main beneficiaries of the first project would be cooperatives and local traders, while livestock Local Traders would be benefited from the third project. Complementary/ Supplementary projects for these ongoing projects suggested by respondents are warehouse, cold storage, training, development of cooperatives, and public procurement for the first project; cold storage, demonstration and training for the second project; and seed bank, demonstration and cooperatives for the third project (Table 7-34). Lack of internet and other associated services are the major problems for geo-tagging the projects (Table 7-35). There is no convergence of the projects with other schemes (Table 7-36).

7.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Gujarat. Under RKVY scheme, Central Government has allocated Rs. 315.27 Crore for Gujarat, for which Rs. 155.31 Crore funds has been released and expenditure of Rs. 89.39 crore has been incurred in Gujarat during 2016-17 till 31st July 2017. According to MIS report, in 2016-17, Gujarat has proposed projects in 8 different sectors. In terms of project cost, the maximum amount goes to Natural Resource Management. Proposals of small projects are dominated by seed and horticulture and large projects are by Natural Resource Management in 2016-17. This study analyses performance of RKVY for the year 2016-17 in Gujarat. We have selected 8 projects for Gujarat and analysed the performance of RKVY by collecting primary information.

In our sample in Gujarat, total 200 households are considered for the survey, among which 160 households are beneficiaries of RKVY and 40 are non-beneficiaries. In our sample, the majority of the beneficiary households (64% of beneficiary households) are marginal farmers, 21% are small farmers, 12% are medium farmers and 4% are large farmers. In the non-beneficiary households, 10% are marginal, 5% are small farmers, 3% are medium farmers and 83% are large farmers. In our sample, for Kharif 2016-17, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tubewell (electric and diesel), canals and tanks for irrigation in Kharif season.

A total number of the population covered is 1179, among them, 966 people belong to beneficiary households and 213 people belong to non-beneficiary households. Among them in beneficiary households, 24% of the population is below 15 age-group, while 11 percent are in above 60 age-group. In non-beneficiary households, 25% of the population is below 15 age-groups, while 9 percent are in above 60 age-group. Taking both the groups into consideration, 65% population is in working-age group. On the education front, 19% of the population in beneficiary group and 30% of non-beneficiary group is illiterate. 72% population in beneficiary households and 64% population in non-beneficiary households have attended school (class 1 to 12); while 5% population in beneficiary households and 3% population in non-beneficiary households have studied beyond school. 38% of the beneficiary households have reported income from farming. For non-beneficiary households, 8% of households have reported farming as an occupation. 18% of beneficiary households and 15% of non-beneficiary households have reported income from dairy. 18% of households from beneficiary households and 40% of non-beneficiary households have reported income from casual labour. Major sources of income are farming and dairy apart from salary and casual labour. For farming, the average income of non-beneficiary households is higher than beneficiaries; so is the average cost. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc.

In our sample in Gujarat, for beneficiary households, beneficiary farmers own agricultural implements like tractor, trolley, weeder, sprayers, threshers, pump sets, Sprinkler sets / Drip Irrigation Equipments, Fodder Choppers and leveller. Medium farmers have more access to implements like Sprinkler sets / Drip Irrigation Equipments. Marginal & Small farmers have equipments like tractor, trolley, manual/ power sprayers, diesel pump sets, leveller and fodder chopper. In non-beneficiary households, farmers own equipments like tractor, trolley, sprayers, electric pump sets and levelers. Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock. They own cows, buffalo, young stock, male draught and goat.

In our sample, 49% of the households for beneficiary and 15% of non-beneficiary groups have pucca houses. 20% households in beneficiary category and 23% in the non-beneficiary category have semi-pucca houses. It is observed from our sample that 65% of beneficiary households possess TV while for non-beneficiaries, it is 40%. In the case of mobile phones, 98% of beneficiary and 90% of non-beneficiary households have reported to possess it. For both the categories of households, ownership of bicycles is 65%. Some households have two-wheelers, four wheelers and refrigerator. It is also found in our study that 98% of the beneficiary and 90% of the non-beneficiary households have mobile phones; among them 87% of beneficiary and 55% of non-beneficiary households receive text messages. Only 39% of the beneficiary households and none of the non-beneficiary households have reported to receive agriculture-related text messages.

It is seen from the sample that both the beneficiary and non-beneficiary households cultivated paddy, wheat, jowar, bajra, maize, tur, cotton, fruits and vegetables in the majority of the cultivated area. Average production of paddy is higher for beneficiary households (82 qtls) as compared to non-beneficiary households (80 qtls). But the price of the marketed quantity for paddy and wheat is higher for the non-beneficiary household vis-à-vis beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. Marginal farmers are getting lower price than small farmers for paddy, wheat, bajra for beneficiary households. For non-beneficiary households, small farmers are getting higher price than marginal farmers, for paddy and wheat. In our sample for Gujarat, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households.

Regarding the awareness of RKVY, it is found that in our sample, households in Gujarat are quite aware of the program. 100% of the beneficiaries and 20% of the non-beneficiaries have heard about RKVY. 23% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 7% of the beneficiary households and none of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 58% of the beneficiary households

and 20% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. In our sample in Gujarat, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, Agriculture / Horticulture Department and Zila / Gram Panchayet. For non-beneficiary households, 100% of the households received information from friends and neighbours.

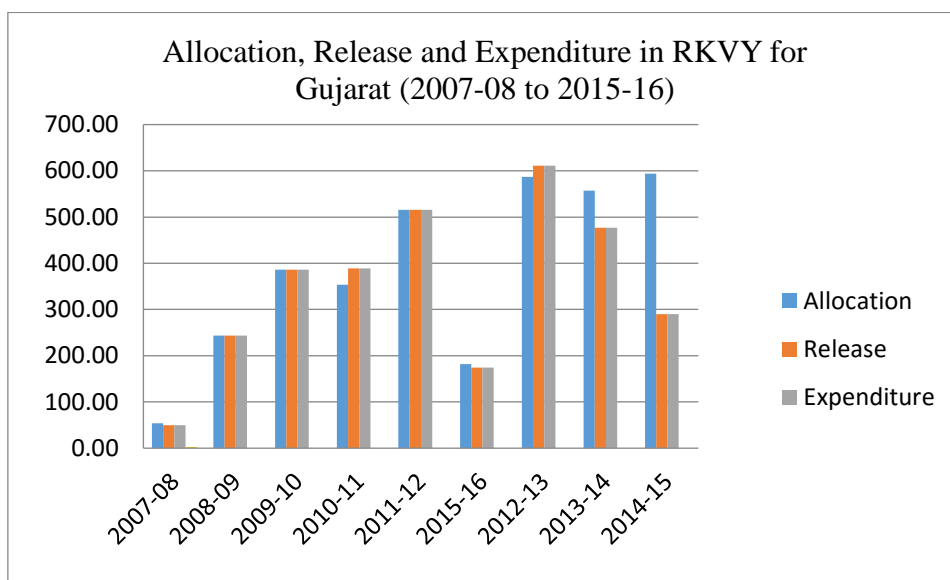
Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. In the project “Achieving To increase the area and production of Hybrid paddy in Ahmedabad district.”, seeds or planting material for crops like paddy were provided to the households. The majority of the farmers have received benefit through price subsidy. RKVY provided assistance in watershed development also in Gujarat. The development work was done under the project “Creation of farm pond to increase agriculture production in the state”. 60% of marginal farmers have benefitted from the intervention. 50% of the marginal farmers are also reported to be have improved availability of water through the intervention. In Gujarat, 78% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil. Among them, 53% of the households are provided with soil health card. The tests have been done in government institutes for 94% of the cases. Within our sample in Gujarat, 50% of beneficiary households had undergone training and 48.8% had undergone demonstration. 86% of the households found training beneficial and want more training.

In our study, it is found that beneficiary households have mentioned their major problem as Lack of monitoring, Capacity building/technical advice not provided, Long time gap between the purchases and receiving the subsidy amount, Lack of marketing support and Delay in transfer.

Lack of monitoring, Lack of marketing support and Capacity building/technical advice not provided is specifically highlighted by marginal farmers. For non-beneficiary households, major problems are: Institutional financing facility not available, Information about RKVY programme details not easily available and Lack of marketing support. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that

the program is successful in building infrastructure, increasing production, capacity building. However, it appears that RKVY has not been very successful in procurement and improving marketing facilities in the state.

Figure 7-1: Allocation, Release and Expenditure in RKVY for Gujarat (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 7-1: List of selected project name and code

Project Code	Project Name
1	Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat.
2	A Project on pack house for fruit and vegetables
3	Cobalt 60 based Irradiation projects
4	Natural resource management in tribal area of Gujarat state
5	Creation of farm pond to increase agriculture production in the state
6	Setting up of mini vegetable produce marketing Centre at Nana Pooda village Valsad district
7	Crop Diversification Programme
8	To increase the area and production of Hybrid paddy in Ahmedabad district.

Table 7-2: Distribution of farmers in our sample according to their land-holding (operated area)
(Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	102(64)	4(10)	106(53)
Small	33(21)	2(5)	35(18)
Medium	19(12)	1(3)	20(10)
Large	6(4)	33(83)	39(20)
Total	160(100)	40(100)	200(100)

Table 7-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			0.0	1.6	3.7	8.5	14.5
Leased-in Land / share cropping (acre)			0.0	-	-	-	-
Leased-out Land / share cropping (acre)			0.0	-	-	24.0	4.0
Total operated area (owned+LI-LO) (acre)			0.0	1.6	3.7	7.3	16.6
Irrigated Area by canal (%)			-	12.7	0.0	0.0	0.0
Irrigated Area by tubewell (%)	Rented	Electric	-	14.0	9.0	16.2	0.0
		Diesel	-	16.9	17.9	27.0	28.4
	Owned	Electric	-	20.9	24.4	32.1	43.7
		Diesel	-	20.0	25.0	19.3	28.0
Irrigated Area by Tanks (%)			-	15.4	23.7	5.4	0.0
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			-	0.0	0.0	0.0	0.0

Table 7-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.0	0.8	4.0	10.0	0.0
Leased-in Land / share cropping (acre)			0.0	-	-	-	0.0
Leased-out Land / share cropping (acre)			0.0	-	-	-	0.0
Total operated area (owned+ LI-LO) (acre)			0.0	0.8	4.0	10.0	0.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	-
Irrigated Area by tubewell (%)	Rente d	Electric	-	33.3	0.0	0.0	-
		Diesel	-	22.2	0.0	40.0	-
	Owne d	Electric	-	44.4	62.5	40.0	-
		Diesel	-	0.0	37.5	20.0	-
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	-
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	-
Irrigated Area by others (%)			-	0.0	0.0	0.0	-

Table 7-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.0	1.59	3.44	8.07	16.60
Leased-in Land / share cropping (acre)			0.0	-	-	-	-
Leased-out Land / share cropping (acre)			0.0	-	-	24.00	-
Total operated area (owned+ LI-LO) (acre)			0.0	1.59	3.44	6.66	16.60
Irrigated Area by canal (%)			-	12.6	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rented	Electric	-	14.2	12.1	17.0	0.0
		Diesel	-	16.7	24.0	26.5	28.4
	Owned	Electric	-	23.8	32.6	29.0	43.7
		Diesel	-	19.8	31.2	21.8	28.0
Irrigated Area by Tanks (%)			-	12.9	0.0	5.7	0.0
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			-	0.0	0.0	0.0	0.0

Table 7-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.0	0.75	4.00	10.00	0.0
Leased-in Land / share cropping (acre)			0.0	-	-	-	0.0
Leased-out Land / share cropping (acre)			0.0	-	-	-	0.0
Total operated area (owned+ LI-LO) (acre)			0.0	0.75	4.00	10.00	0.0
Irrigated Area by canal (%)			-	0.0	0.0	0.0	-
Irrigated Area by tubewell (%)	Rente d	Electri c	-	33.3	0.0	0.0	-
		Diesel	-	22.2	0.0	40.0	-
	Owne d	Electri c	-	44.4	62.5	40.0	-
		Diesel	-	0.0	37.5	20.0	-
Irrigated Area by Tanks (%)			-	0.0	0.0	0.0	-
Irrigated Area by Wells (%)			-	0.0	0.0	0.0	-
Irrigated Area by others (%)			-	0.0	0.0	0.0	-

Table 7-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	24	25	24
	>15 to 25	19	20	19
	>25 to 40	26	22	25
	>40 to 59	20	23	21
	>59	11	9	11
	All Groups	100	100	100
Education	Illiterate	19	30	21
	Class 1 to 5	20	22	20
	Above Class 5 to 8	17	20	18
	Above Class 8 to 12	35	23	33
	Above Class 12	5	3	4
	Other diploma	1	0	1
	can read and write	1	0	1
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	1	2	2
	All Groups	100	100	100

Table 7-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	42	4	35
agricultural labour	9	17	10
dairy	5	6	5
casual labour	25	59	32
self-employment (specify)	7	1	6
salaried employment	12	11	11
others (no separate income)	0	1	0
All Groups	100.0	100.0	100.0

Table 7-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	38	8
Dairy	18	15
Agricultural Labour	12	23
Casual Labour	18	40
Salary	8	9
Other	7	5
Total	100	100

Table 7-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	126003	55687	66975	193083	90214	87833
Dairy	66743	26829	39914	72091	30091	42000
Poultry	25000	13000	12000			
Agricultural Labour	23625		23625	29706		29706
Casual Labour	51208	10000	51069	68067		68067
Salary	149625	19444	144156	142143		142143
Other	97037	43760	56519	67700	20500	57450
Total	89566	45374	44192	76857	50175	26682

Table 7-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	112221	48903	60383	154833	77143	64833
Dairy	53534	22310	31836	62727	24091	38636
Poultry	25000	10000	15000			
Agricultural Labour	21102	4000	21020	30333		30333
Casual Labour	45169	10000	45028	55414		55414
Salary	136125	18889	130813	125143		125143
Other	84537	35520	51648	62450	18000	53450
Total	78525	39107	39418	65304	42050	23254

Table 7-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	12	14	11	25	17	35
Dairy	25	20	25	15	25	9
Poultry	0	30	-20			
Agricultural Labour	12	-100	12	-2		-2
Casual Labour	13	0	13	23		23
Salary	10	3	10	14		14
Other	15	23	9	8	14	7

Table 7-11: Average annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester etc)	9878	8791	8881	11218
Expenditure on purchased water for irrigation	6544	5271	6237	4714
Expenditure on electricity for irrigation	6033	5125	5393	4125
Expenditure on diesel	18250	21750	16500	19500
Expenditure on other fuels for agriculture	3166	2025	2428	1625
Any other	39273	51382	34338	43873
<i>Total expenditure on agriculture</i>	53843	20360	47518	18500

Table 7-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land		
Total rent on machinery (tractor, harvester etc)	11	-22
Expenditure on purchased water for irrigation	5	12
Expenditure on electricity for irrigation	12	24
Expenditure on diesel	11	12
Expenditure on other fuels for agriculture	30	25
Any other	14	17
<i>Total expenditure on agriculture</i>	13	10

Table 7-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	36.4	18.2	22.7	22.7
Trolley	0	36.4	18.2	22.7	22.7
Weeder	0	33.3	33.3	33.3	0.0
Manual / Power Sprayers	0	25.9	40.7	24.1	9.3
Threshers	0	30.8	23.1	30.8	15.4
Electrical Pump sets	0	21.4	17.9	46.4	14.3
Diesel Pump sets	0	22.2	37.0	25.9	14.8
Sprinkler sets / Drip Irrigation Equipments	0	0.0	0.0	100.0	0.0
Leveler	0	22.2	11.1	22.2	44.4
Fodder Choppers	0	52.4	24.4	19.5	3.7
Others	0	28.6	0.0	14.3	57.1

Table 7-13B: Asset ownership by non-beneficiary households (% of number of implements)
(2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0.0	0.0	50.0	50.0	0.0
Trolley	0.0	0.0	50.0	50.0	0.0
Manual / Power Sprayers	0.0	0.0	50.0	50.0	0.0
Electrical Pump sets	0.0	25.0	50.0	25.0	0.0
Diesel Pump sets	0.0	0.0	66.7	33.3	0.0
Leveler	0.0	0.0	100.0	0.0	0.0
Others	0.0	0.0	0.0	100.0	0.0

Table 7-14A: Livestock ownership by beneficiary households (2016-17)(% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0	60.9	23.9	13.0	2.2
Buffalo	0	56.8	24.2	16.8	2.1
Young Stock	0	57.5	24.8	15.0	2.7
Male Draught	0	66.7	23.3	10.0	0.0
Goat	0	100.0	0.0	0.0	0.0

Table 7-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	31	63	37
Pucca	49	15	43
Semi-Pucca	20	23	21
Others	0	0	0
Total	100	100	100

Table 7-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	65	35	100	40	60	100
Telephone	0	100	100	0	100	100
Mobile phone	98	3	100	90	10	100
Cycle	65	35	100	65	35	100
Two wheeler	60	40	100	28	73	100
Four wheeler	7	93	100	3	98	100
Refrigerator	28	73	100	13	88	100

Table 7-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	4.0	4.0	82.8	75.9	1408.0	51445.9	55365.4
wheat	3.9	3.9	53.9	50.5	1560.3	34837.5	43881.5
jowar	1.3	1.3	6.3	10.0	1100.0	3500.0	7500.0
bajra	1.8	1.8	11.2	10.4	1565.9	5551.8	10787.1
maize	1.5	2.0	15.2	12.8	1421.1	7115.0	11059.5
tur	1.3	3.0	3.0	2.7	4616.7	6083.3	6458.6
cotton	2.4	4.7	15.3	15.3	3895.2	23214.3	36280.8
fruit	1.3	1.3	206.7	206.7	1066.7	90000.0	130444.4
vegetable	1.2	1.2	77.5	77.5	1003.6	26450.0	51353.5

Table 7-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	3.0	3.0	80.9	86.3	1441.7	55714.3	68749.6
wheat	3.0	3.0	44.6	52.4	1700.0	35214.3	53865.7

Table 7-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy	-	1398	1406	1422	1430	-	1433	1475	1400	-
wheat	-	1551	1573	1543	1620	-	1433	1475	1400	-
jowar	-	1100	-	-	-	-	-	-	-	-
bajra	-	1362	2786	1200	1350	-	-	-	-	-
maize	-	1431	1367	-	-	-	-	-	-	-
tur	-	4640	-	4500	-	-	-	-	-	-
cotton	-	3890	3863	4000	-	-	-	-	-	-

Table 7-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy	-	1372	1353	1363	1410	-	1433	1375	1350	-
wheat	-	1501	1542	1506	1580	-	1650	1550	1500	-
jowar	-	1000	-	-	-	-	-	-	-	-
bajra	-	1252	1300	1192	1200	-	-	-	-	-
maize	-	1369	1300	-	-	-	-	-	-	-
tur	-	4240	-	4300	-	-	-	-	-	-
mustard	-	5000	-	-	-	-	-	-	-	-
cotton	-	3775	3769	3900	-	-	-	-	-	-

Table 7-21: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
<i>Items</i>	% of Total Income	Average Annual income (Rs.)	% of Total Income	Average Annual income (Rs.)
Milk	100	66971.4	99	70272.7
Milk Products	0.1	5000.0		
Animal sale	0.04	2000.0	1	6000.0
TOTAL	100	65208.3	100	64916.7

Table 7-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	-5	-13	26	15
Animal sale	-67			20
TOTAL	0	-7	24	15

Table 7-21: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	20	80	100	84	16	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	23	77	100	0	100	100	19	82	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	7	93	100	0	100	100	6	95	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	54	46	100	20	80	100	48	53	100

Table 7-22: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbors	26.9	100.0	30.4
News Paper	0.0	0.0	0.0
Agriculture / Horticulture Department	52.5	0.0	50.0
SAU	0.6	0.0	0.6
KVK	0.0	0.0	0.0
Input Suppliers	0.0	0.0	0.0
TV/ Radio	0.6	0.0	0.6
Agri. Exhibitions	1.9	0.0	1.8
ZP/GP	17.5	0.0	16.7
Other sources	0.0	0.0	0.0
Total	100.0	100.0	100.0

Table 7-23: Details of Interventions made under crop development (in 2016-17) in Gujarat for beneficiaries

		Seeds / planting materials
No of beneficiary of RKVY		40
For which season (%)		
	Kharif	100
	Rabi	0
	Summer	0
Average actual cost of these materials (Rs.)		10062.5
Whether Material or Subsidy received from RKVY? (%)		
	Material	0
	Subsidy	100
If Material, quantity supplied (Kg)		
If subsidy, then	average quantity of subsidized input (Kg)	5.85
	Unit price (Rs.)	300
	average price paid by beneficiary (Rs.)	877.5
	average market price (Rs.)	1755
	average amount of subsidy (Rs.)	877.5
If Subsidy, Nature of subsidy (%)		
	Price Subsidy	100
	DBT	0

Table 7-24: Details of Interventions made under watershed development (in 2016-17) in Gujarat for beneficiaries

<i>Land-size</i>	% of households reported development of Farm ponds/ Dug wells under RKVY	% of households received subsidy	% of households participated in construction process	% of households who got benefit from the intervention	% of households who got benefit from improved availability of water	% of households who got benefit from improved availability of water as well as improved quality of water
Landless	-	-	-	-	-	-
Marginal	31	28	14	60	50	10
Small	12	24	3	36	30	6
Medium	16	26	11	32	11	5
Large	17	0	0	17	17	0

Table 7-25A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Whether soil is tested in your area?		soil health card issued? (who tested soil)	
	Yes	No	Yes	No
Beneficiary				
Landless	0	0	0	0
Marginal	69	31	41	59
Small	88	12	62	38
Medium	100	0	74	26
Large	100	0	83	17
Total	78	23	53	47
Non-beneficiary				
Landless	0	0	0	0
Marginal	0	100	0	0
Small	100	0	100	0
Medium	100	0	100	0
Large	3	97	0	100
Total	10	90	75	25

Table 7-25B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless			
Marginal	94	0	6
Small	97	0	3
Medium	95	0	5
Large	83	0	17
Total	94	0	6
Non-beneficiaries			
Landless			
Marginal			
Small	100	0	0
Medium	100	0	0
Large	100	0	0
Total	100	0	0

Table 7-26: Information regarding training and demonstration under RKVY (% of households) (2016-17)

			Type of training					
			Dem onstr ation	Field Visit	Kris hi Mela	Othe rs		
	Numb er of Benef iciarie s	% of beneficiary households undergone training					% of households found training beneficial	% of household s who want more training
Landless								
Marginal	102	40.2	43.9	0.0	56.1	0.0	80.5	75.6
Small	33	63.6	57.1	0.0	42.9	0.0	90.5	95.2
Medium	19	68.4	38.5	7.7	53.8	0.0	92.3	92.3
Large	6	83.3	80.0	0.0	20.0	0.0	100.0	100.0
Total	160	50.0	48.8	1.3	50.0	0.0	86.3	85.0

Table 7-27: Usage of mobile phone in receiving agriculture related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	0	0	0	0	0
Marginal	98	82	29	23	0
Small	100	94	52	52	0
Medium	95	95	63	63	0
Large	100	100	67	67	0
Total	98	87	39	35	0
Non-Beneficiary					
Landless	0	0	0	0	0
Marginal	100	75	0	0	0
Small	100	100	0	0	0
Medium	0	0	0	0	0
Large	88	48	0	0	0
Total	90	55	0	0	0

Table 7-28A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	-	38	42	37	17	38
Contact details of the department which pay subsidy not available	-	32	27	32	0	30
Eligibility or criteria for availing the subsidy not known	-	35	27	21	0	31
Procedure for the subsidy very tedious	-	25	33	37	17	28
No of documents required for availing subsidy are too many	-	17	21	21	33	19
Subsidy paid after purchase while initial payment remains the highest problem	-	44	39	32	50	42
Delay in transfer	-	45	61	47	33	48
Prescribed machinery/asset not easily available in the market	-	10	3	5	0	8
Institutional financing facility not available	-	31	24	26	17	29
Capacity building/technical advice not provided	-	52	33	32	17	44
Long time gap between the purchase and receiving the subsidy amount	-	42	55	42	33	44
Biased towards large land owners	-	27	24	37	17	28
Poor quality of materials/machinery are supplied	-	2	3	5	0	3
Implementing agencies are located far away	-	32	33	47	17	34
Incidence of bribery	-	9	12	5	0	9
Lack of monitoring	-	51	64	53	67	54
Complementary inputs not available	-	20	18	16	33	19
Restricted Choice	-	23	58	42	33	33
Lack of marketing support	-	52	48	42	33	49
Any other (specify)	-	0	0	0	0	0

Table 7-28B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY program details not easily available	-	100	50	100	94	93
Contact details of the department which pay subsidy not available	-	100	100	100	85	88
Eligibility or criteria for availing the subsidy not known	-	75	50	100	82	80
Procedure for the subsidy very tedious	-	75	50	0	33	38
No of documents required for availing subsidy are too many	-	0	100	0	45	43
Subsidy paid after purchase while initial payment remains the highest problem	-	50	100	100	42	48
Delay in transfer	-	75	100	100	64	68
Prescribed machinery/asset not easily available in the market	-	25	0	0	27	25
Institutional financing facility not available	-	25	0	0	45	40
Capacity building/technical advice not provided	-	100	100	100	100	100
Long time gap between the purchase and receiving the subsidy amount	-	100	100	100	85	88
Biased towards large land owners	-	0	0	0	55	45
Poor quality of materials/machinery are supplied	-	0	0	0	30	25
Implementing agencies are located far away	-	0	0	0	70	58
Incidence of bribery	-	0	0	0	70	58
Lack of monitoring	-	75	100	100	64	68
Complementary inputs not available	-	100	100	0	55	60
Restricted Choice	-	100	0	0	64	63
Lack of marketing support	-	100	50	100	91	90
Any other	-	0	0	0	0	0

Table 7-29A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	-	-	-	-	-	-	-	-	-	-
Marginal	51	45	85	11	44	52	65	31	59	37
Small	37	57	91	3	34	60	66	29	51	43
Medium	45	50	90	5	45	50	50	45	65	20
Large	13	3	13	3	8	8	13	3	13	8
Total	41	40	73	8	36	45	54	27	50	31

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 7- 29B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	-	-	-	-	-	-	-	-
Marginal	93	3	89	19	42	54	0	0
Small	91	3	100	23	31	63	0	0
Medium	90	5	75	15	45	50	0	0
Large	13	3	18	0	3	13	0	0
Total	77	3	76	16	33	47	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table: 7-30: Details of projects surveyed for implementing agencies

Sl. No.	Project Name	Implementing agency
01	Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat (IA)	The Banaskantha District Co operative milk producers union in the state of gujarat
02	A Project on pack house for fruit and vegetables (IA)	Department of Horticulture, Gandhi Nagar, Gujarat
03	Setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district (IA)	Gujrat State Agricultural Marketing Board Office at Block No.:- 19,2nd Floor, Jivraj Mehta Bhavan Gandhi Nagar.

Table 7-31: General Information regarding the implementing agency

Issues\ Projects	Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat (IA)	A Project on pack house for fruit and vegetables (IA)	Setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district
Type of construction	Dairy Plant	Infrastructure base for storing of fruits and vegetables.	Retail Shops, Auction Shed , Restuarant, Bank , Computer Room, Meeting Room, Over Head Water Tank, Fire Fighting Facility, Watchmen Cabin, Farming Equipment Shop, Firstaid Room, Drinkind Water , Wau-Bridge, Compound Wall & Gate , Retaining Wall, Embankment, Activity Hall, Public Toilets, Office Common Room –Waiting Room, Daily Need Shop, Activity Hall, Dormitory Hall,
New construction/Improvement of an older construction	Improvement	New	New
Awareness about DAP	Yes	No	No
Included in DAP	Yes	No	No
Project proposed by	Implementing Agency	Implementing Agency	Nodal agency
Level at which the project was proposed	District	State	District

Table 7-32: Fund Flow in the project

Issues\ Projects	Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat (IA)	A Project on pack house for fruit and vegetables (IA)	Setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district
Funds required for the project in 2016-17	Rs. 10.46 Crore	750.00 Lakh	12.27 Crore
Funds approved for the project in 2016-17	Rs. 10.46 Crore	750.00 Lakh	10.98 Crore
Funds released for the project in 2016-17	Rs. 5.00 Crore	750.00 Lakh	10.92 Crore
Number of times funding released for the project in 2016-17	1	1	4
Major problems in the release of funds	Reduced amount	other	Delayed release

Note: Values in brackets are the percentage out of funds required

Table 7-33: Physical Capacity of the projects

Issues\ Projects	Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat (IA)	A Project on pack house for fruit and vegetables (IA)	Setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district
Required physical capacity of the selected work. (in numbers)	8.0 Lakh litre Dairy Expansion Project	375	
Existing physical capacity excluding the current project.	48.00 LLPD		
Capacity of current project. (numbers)	8.0 LLPD	375	
Number of phases in the project	1	1	2
In case of multiple phases, ways for management of funds	NA	NA	Provisions for fund in phased manner in RKVY

Table 7-34: Tendering & Maintenance regarding the project

Issues\ Projects	Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat (IA)	A Project on pack house for fruit and vegetables (IA)	Setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district
Whether tender was called for execution of the work	Yes	No	Yes
e-tender issued	Yes		No
Opinion: e-tendering increases efficiency of tendering	Yes	Cant say	Cant say
Opinion: e-tendering increases transparency	Yes	Yes	Cant say
Opinion: e-tendering has increased number and quality of responses from vendors	Yes	Yes	
Number of days given to respond to tenders	90		7
Number of vendors responded to the tenders	3	428	9
Method for evaluating the tenders	Technical criteria and financial criteri	Technical criteria and financial criteri	Technical criteria and financial criteri
Any re-bidding made	No	No	No
Reasons for re-bidding			
Selected vendor a Government / Private Organization	Others	Others	Private
Whether selected vendor worked with the agency before	Yes	No	No
Agency responsible for the maintenance of the constructed project in future years	Own agency	Own agency	Own agency
If same agency, whether any financial provision is there in the project for maintenance in future	Yes	No	Yes

Table 7-35: Benefits and Challenges regarding the projects

Issues\ Projects		Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat (IA)	A Project on pack house for fruit and vegetables (IA)	Setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district
Number of farmers expected to be benefitted from the construction	2017-18	3.5 Lakh Farm Producers	375	500
	2018-19		Its not decided that this project is to be continue or not.	1200
	2019-20		Its not decided that this project is to be continue or not.	2000
Beneficiaries from the project other than the farmers		Cooperatives and Local traders		Local Traders
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Warehouse, cold storage, training, development coperatives, govt. procuremnt and others	Cold storage, demonstration and training,	Seed bank, demonstration and govt coperatives
Project needs enhancement / improvement				
Problems associated with the existing project		Physical achievement	Physical achievement	Physical achievement
Opinion: the project will complete in stipulated time				No
Reasons for delay in project		Shortage and delay of funds	Shortage and delay of funds	Shortage and delay of funds
Whether infrastructure is geo-tagged?		No	Yes	No
Reasons for not being geo-tagged		other		Lack of internet and other associated services

Table 7-36: Convergence with other projects

Issues\ Projects		Subsidy for expansion of existing liquid milk processing section of Banas II Dairy plant at Palanpur North Gujarat (IA)	A Project on pack house for fruit and vegetables (IA)	Setting up of mini vegetable produce marketing Centre at Nana Ponda village Valsad district
Whether any convergence with other schemes		No	No	No

8 HARYANA

Haryana is the 20th state of India, which came into existence on 1st November 1966. Previously it was under Punjab. It is situated in the North Western region surrounded by Himachal Pradesh from North, Uttarakhand from North East, Rajasthan from the South, UP and Delhi from East and Punjab from North West. The state is divided into 21 districts that together cover a geographical area of 4,421 thousand hectares. At the time of formation of the state, the agriculture sector was the leading sector in the state economy—its share in gross state domestic product of Haryana was 61% in 1969-70, which reduced to 18% in 2016-17. It is mainly because of remarkable progress in both industry and service sectors.

Agriculture is a major source of living in the state. The gross area sown was 6471 thousand hectares in 2013-14 (GoH¹¹). The average size of land holdings in Haryana is 2.25 hectares, which is 1.17% of the total size of land holdings in India (GoI¹²). The gross state value added by agriculture, fishing and forestry was 83967.09 crore in 2015-2016, while the same is estimated to be 94660.87 crores for 2016-2017 (Statistical Abstract 2015-16¹³). Wheat and rice are the major agricultural products of this state. Other main crops include sugarcane, cotton, oilseed, gram, barley, maize, etc.

Rashtriya Krishi Vikas Yojana (RKVY) was started in 2007-08 in Haryana. The Central government, like other major states, provides financial assistance in agriculture projects in 60:40% for Centre and State. Under this scheme, the central government has allocated Rs. 143.10 crore for Haryana in 2015-16. The major issues for Haryana in agriculture are: sustainability of soil fertility, conservation of water resources, crop diversification, management of insects/pests, management of seeds etc. RKVY has taken up various projects

¹¹GoH (2015) Haryana at a glance, 2015. Department of economic and statistical analysis, Haryana, Government of Haryana

¹²http://eands.dacnet.nic.in/PDF/Agricultural_Statistics_At_Glance-2015.pdf

¹³[http://esaharyana.gov.in/Data/StateStatisticalAbstract/StatisticalAbstract\(2015-16\).pdf](http://esaharyana.gov.in/Data/StateStatisticalAbstract/StatisticalAbstract(2015-16).pdf)

in this state to cope up with these problems. In 2016-17, among the proposed projects, crop development, Innovative Programmes/Training/Capacity Building/Others got a high allocation. Crop development got priority in terms of cost, while in terms of number of projects, research was given priority. Figure 8-1 shows allocation, release and expenditure in RKVY in Haryana over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Haryana by collecting primary information from five projects. List of selected projects is given in Table 8-1.

Separate questionnaires are prepared for households and implementing agencies. The household questionnaire consists of 22 blocks. Households are asked about household level information for land-holding, income and expenditure, occupation, asset ownership, details of cultivated crops and account for profit from it, animal husbandry, awareness regarding RKVY programme, intervention of RKVY programme in agriculture and allied sectors and the benefits and challenges about RKVY programme. Implementing agency survey, on the other hand, collects information regarding the agencies that are carrying out these programmes at state/district level. It basically targets the programmes for which the benefits directly do not reach households but would benefit households in the long run.

8.1 RESULTS FROM PRIMARY SURVEY

8.1.1 RESULTS FROM HOUSEHOLD SURVEY

In this study, both beneficiary and non-beneficiary households to see the impact of RKVY interventions on farm households. Total 250 sample households were surveyed in Haryana, out of which 200 households belong to the beneficiary group. Information was collected on households' characteristics, income and expenditure, interventions of RKVY and their benefits, and problems related to the implementation of RKVY and suggestions.

8.1.1.1 *LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD*

The households are categorized based on their operated area of land. Among them, the households who do not have any operated area of land are called landless farmers. Households, whose operated area is less than 2.5 acre, are called marginal farmers. Households, whose operated area is between 2.5 to 5 acres, are called small farmers. Households, whose operated

area is 5 to 10 acres, are called medium farmers. Households, whose operated area is more than 10 acres, are called large farmers. The majority of farmers in our sample are marginal farmers, as is reflected from Table 8-2. In our sample, 19% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 24% of them are small farmers (operated area 2.5 to 5 acres), 25.5% is medium (operated area 5 to 10 acres) and 31% in large farmers (operated area more than 10 acres). In the non-beneficiary households, 24% are marginal, 30% are small, 18% are medium and 26% are large farmers.

In our sample in Haryana, for kharif 2016-17, the average area of owned land is higher for the marginal and medium category of land-holding among the beneficiary households as compared to non-beneficiary households. Both beneficiary and non-beneficiary households operate in the leased-in land. For irrigation, households mainly depend on electric tube wells (Table 8-3 and Table 8-4).

We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of owned land is higher for all categories (not considering landless and except medium category) among the non-beneficiary households as compared to beneficiary households (Table 8-5 and Table 8-6).

8.1.1.2 DEMOGRAPHY OF SAMPLE HOUSEHOLDS

In our sample in Haryana, a total of 200 households are beneficiaries and 50 are non-beneficiaries. A total number of the population covered is 1336, among them 1055 people belong to beneficiary households and 281 people belong to non-beneficiary households. Among them in beneficiary households, 24% of the population is below 15 age group, while 9.5 percent are in above 60 age group. Rest 66% population in beneficiary households is in working-age-group. In non-beneficiary households, 28% of the population is below 15 age group, while 12% are in above 60 age group. Rest 60% population in beneficiary households is in working-age-group. Tanking both the groups into consideration, 65% population is working-age. In the education front, 14.7% of the population is illiterate. 65% population in both beneficiary and non-beneficiary households have attended school (class 1 to 12); while 17% population in beneficiary households and 15% population in non-beneficiary households have studied beyond class 12. Major occupation is cultivation, while some members of the households are casual

labour or salaried employee. 12% of the beneficiary population is engaged in fishing (Table 8-7).

8.1.1.3 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 53% of the beneficiary households have reported income from farming. For non-beneficiary households, 54% of households have reported farming as an occupation. 15% of beneficiary households have reported income from dairy while for non-beneficiary households, 25% reported income from them (Table 8-8). 12% of beneficiary households reported income from fishing.

Average annual income of the sample beneficiary households in aggregate is Rs. 600145 in Haryana while the same for non-beneficiary households is Rs. 326399 in 2016-17. Average annual income for beneficiary households was Rs. 343194 in 2015-16 while it was Rs. 348282 for non-beneficiary households in the same year (Table 8-9). This shows that there is an increase in income of beneficiary households in the current year. Major sources of income are farming, dairy, agriculture labour work, casual labour work, fishing apart from salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is higher for non-beneficiary households. Average cost on dairy is also higher for non-beneficiary households. Average income from agriculture labour work, casual labour work is higher for beneficiary households. It can be seen from Table 8-9 that beneficiary households have more income from farming in Haryana.

Table 8-10 Table 8-10 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, the average income of beneficiary households is Rs. 540621 which is higher than non-beneficiaries (Rs. 524217); so is the average cost (Rs. 296785 and Rs. 255435 respectively). For dairy, average income and cost both are higher for non-beneficiary households.

In terms of percentage change in income (Table 8-11), average profit for farming has increased and for dairy, it has decreased in Haryana for beneficiary households in 2016-17 over the previous year. Average income has increased by 8% in farming for beneficiary households.

However, the average cost has also increased by 9% for beneficiary households in farming. There is a decrease in both income and cost in dairy for beneficiary households in Haryana.

8.1.1.4 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 8-12 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. It is evident from the table that both for the beneficiary and non-beneficiary households, rent in the leased-in land is the major factor of the annual expenditure. Apart from that most of the households have reported expenditure as rent on agriculture machinery (tractor, harvester etc.) (Rs. 25959 in 2016-17 for beneficiary and Rs. 27542 for non-beneficiary) and components that are clubbed in others (i.e. seed fertilizer etc.) (Rs. 141417 in 2016-17 for beneficiary and Rs. 119531 for non-beneficiary)). Expenditure on electricity and diesel are other important components of agriculture expenditure. The component-wise analysis shows that rent on machinery (tractor, harvester etc.) is higher for non-beneficiaries and expenditure on electricity for irrigation is higher for beneficiaries than non-beneficiaries.

Table 8-13 shows the percentage increase in expenditure on different components of inputs for beneficiary and non-beneficiary households in 2016-17 over 2015-16. It is evident that there is a decrease in rent on machinery (tractor, harvester etc.) and expenditure on purchased water for irrigation for beneficiary households over this year. Expenditure on electricity for irrigation and diesel has increased for both beneficiary and non-beneficiary households. In aggregate, total expenditure on agriculture has reduced for beneficiary households while it has increased for non-beneficiary households.

It is observed that there is significant variation in expenditure on agriculture for households who are beneficiaries of different projects. Project-wise data for average expenditure on agriculture by households is provided in Table 8-14 to Table 8-18.

8.1.1.5 OWNERSHIP OF AGRICULTURAL IMPLEMENTS AND LIVESTOCK

In our sample in Haryana, for beneficiary households, the majority of agricultural instruments like a tractor, trolley, weeder, threshers, etc. belong to medium and large farmers. Marginal

farmers have some access to instruments like drier, fodder chopper, electric pump sets etc. (Table 8-19).

Comparison of the beneficiary and non-beneficiary households shows that landless farmers from non-beneficiary households have more ownership of implements as compared to landless beneficiary households in our sample. Ownership of assets is very much skewed for medium and large scale farmers for non-beneficiary households (Table 8-20).

In our sample households in Haryana, marginal and small farmers from both beneficiary and non-beneficiary households have a significant proportion of ownership of livestock (Table 8-21).

In our sample, 5% of the beneficiary households and 8% of non-beneficiary households has kaccha houses. It is also observed that majority of the households have pucca houses in our sample (83.5% for beneficiary households and 62% for beneficiaries) (Table 8-23).

It is observed from our sample that beneficiary households have more access to information. 95% of beneficiary households possess TV while for non-beneficiaries, it is 82% (Table 8-24). In the case of the mobile phone almost 100% of both beneficiary and non-beneficiary households have reported to have it. Beneficiary households also have more two-wheelers, four-wheelers and refrigerator. It can be said from the data on asset ownership that asset-wise beneficiary households are more well-off. This may be caused by the better access to information by beneficiary households than non-beneficiaries as well as due to the positive outcome of the programme. Data reflects that design of RKVY in Haryana needs better targeting of needy households who are engaged in farming or other agricultural activities.

8.1.1.6 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that households cultivated paddy, wheat, bajra, maize, grams, cotton, sugarcane etc. in the majority of the cultivated area (Table 8-25). Non-beneficiary households used more cultivated area in sugarcane than beneficiary households. Average production of paddy, wheat and bajra is much higher for beneficiary households as compared to non-beneficiary households. Sugarcane and mustard production is higher for non-beneficiary

households. More price of the marketed quantity of products is received by non-beneficiary household vis-à-vis beneficiary households for paddy, wheat, mustard, cotton etc. (Table 8-26). For bajra and sugarcane, beneficiary household is getting a better price. Profitability is higher for paddy and bajra for beneficiary households, but it is lower for wheat, mustard and sugarcane.

A closer look says that for an average production of paddy is 33% higher for paddy, while paid-out cost is 38% higher for beneficiary households as compared to non-beneficiary households (Table 8-27). As a net result, the profitability of paddy is 29% higher for paddy for beneficiaries. A similar trend is followed for bajra. For wheat, cultivated area, irrigated area as well as production and marketed quantity is comparatively higher for beneficiaries but the profitability is lower because of less price received by farmers. Sugarcane is more profitable for non-beneficiary households, their cultivated area, irrigated area and production are higher than beneficiaries.

Disaggregated analysis shows that there is a difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 8-28). For paddy, marginal farmers are getting a higher price. In a comparison of the beneficiary and non-beneficiary marginal farmers, it can be said the average price received is almost same for paddy and wheat.

In 2015-16, it is seen that price received by medium farmers is low for paddy and wheat in beneficiary households as compared to non-beneficiary households (Table 8-29). Price received by different categories of farmers are different in Haryana, but that is not necessarily biased against small and marginal farmers.

8.1.1.7 RETURNS FROM LIVESTOCK

Apart from cultivation, the households have income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Haryana, it is seen that average income from livestock is quite low for beneficiary households (Rs. 94000) as compared to non-beneficiary households (Rs. 146762) (Table 8-30). This may be because of the reason that our sample was chosen for the beneficiaries who have livestock, not necessarily they are beneficiaries of dairy development projects. 85% of the income from livestock comes

from milk for beneficiary households. Among the non-beneficiaries, the share is 100%. Apart from that some income comes from the production of ghee, eggs and animal sale.

The inter-temporal comparison shows that average income from the production of milk was higher for non-beneficiaries as compared to beneficiaries in both 2015-16 and 2016-17 (Table 8-31). Income from milk products and animal sale is higher for beneficiaries for 2016-17. It can be observed from our sample is income from milk has increased in 2016-17 from 2015-16 for both beneficiaries and non-beneficiaries.

8.1.1.8 AWARENESS OF RKVY & ITS SOURCES

Regarding the awareness of RKVY, it is found that in our sample, 66% of non-beneficiary households are not aware of RKVY. 30.5% of the beneficiary households have received benefits from RKVY in the last five years excluding this year (Table 8-32). Only 2% of non-beneficiary households received any benefits through-out these years. 13.5% of the beneficiary households and 10% of the non-beneficiary households had received some benefits from any government scheme other than RKVY in the year 2016-17. For the last five years, 54% of the beneficiary households and 44% of the non-beneficiary households had received some benefits from any government scheme other than RKVY excluding the year 2016-17. This can be easily observed from the Table 8-32 that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness is a basic requirement for the success of such government scheme.

In our sample in Haryana, the majority of the beneficiary households had received information regarding RKVY from Agriculture/Horticulture Department, Zila Panchayat, Gram Panchayat, friends and neighbors (Table 8-33). For non-beneficiary households, 94% of the households received information from friends and neighbors. It is evident that for such government schemes to succeed, government departments and local bodies need to be active in disseminating the awareness regarding the programme.

8.1.1.9 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural

mechanization through RKVY. In terms of the numbers of these tools, the beneficiaries definitely were better off than the non-beneficiaries, as only two of the beneficiaries have reported to have tractor/mini-tractor. Beneficiaries have received support from RKVY programme (Table 8-34 & Table 8-35). The majority of them has received it through direct benefit transfer. Beneficiaries have reported that these implements have helped in good plant growth, Reduced Drudgery and solved labour problems. 28% of the cost of the rotavator (average) is provided by RKVY in Haryana, while for a cultivator, it is 32%, for harrower, it is 42% and for seed drill, it is 23%. For DBT in RKVY, a number of days taken to receive subsidy varies from 3 days to 156 days.

RKVY has contributed in crop development in Haryana. It is found that crop seeds are made available through RKVY (Table 8-36). Among the beneficiaries, 5% are marginal farmers, 31% are small farmers, 36% are medium and 28% are large farmers. Average subsidy amount varies across land category: for marginal farmers, it is Rs. 1000 per person while for medium farmers, it is Rs. 2759 per person and for large farmers, and it is Rs. 2636 per person (Table 8-37).

In Haryana, 37% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 8-38 and Table 8-39). Among them, 61% of the households are provided with soil health card. The majority of those, whose soils are tested, belongs to a medium category. The tests had been done in government institutes for 92% of the cases for beneficiaries and 70% cases for non-beneficiaries.

Within our sample, 44% households had undergone through training and 37% received a demonstration (Table 8-40). 42% households found training beneficial and 39% of households want more training. Our data clearly shows that RKVY programme has facilitated training and demonstration in Haryana for all categories of farmers. Marginal farmers find the training useful also and want more of these types of initiatives.

In our study, it is found that beneficiary households have faced problem in subsidy paid after purchase while initial payment remains the highest problem, lack of marketing support, restricted choice and delay in transfer. For small and marginal farmers suffer from lack of marketing support, restricted choice and unavailability of complementary inputs (Table 8-41).

Apart from these problems, non-beneficiaries face problems in access to the information regarding RKVY, contact details of the department and knowledge about eligibility criteria for the programme (Table 8-42).

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in employment generation, increasing production, improving market facilities, financial assistance and procurement (Table 8-43 and Table 8-44). RKVY programme is quite successful in Haryana as per the responses that we received. According to our survey, post-harvesting storage and capacity building are two aspects which need more attention in RKVY in Haryana.

8.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

In Haryana, the project *Promotion of protected cultivation in Haryana* was chosen for the purpose of study from the category of 'I&A'. The chosen project is of nature of extension and training (Table 8-45). It appears from the survey that demand for the project came from the gram panchayat (Table 8-46). Only 92% of the funds required for the project has been released in 2 installments in 2016-17. Reduction in the sanctioned amount was the major problem faced by the implementing agency (Table 8-47). It is not clear whether this project is mentioned in DAP or not as respondents were not aware of DAP.

The project is designed for motivating farmers to adopt new technologies by providing training and awareness. Present capacity in the selected work for the agency in terms of physical infrastructure is 296701 sqm for 2016-17 (Table 8-48).

Personal visit, media, and training camps were observed as the major mode of campaign in this project. About 290 farmers received benefits from the project in 2016-17 and this number is expected to increase about 370 in 2019-20. Farmer Producer Organization (FPO) may also get benefit from the project other than farmers, as is informed by respondents (Table 8-49). According to them, developing co-operatives are complementary/ supplementary projects. It appears that the project does not have any convergence with any other schemes (Table 8-50).

8.2 CONCLUSION

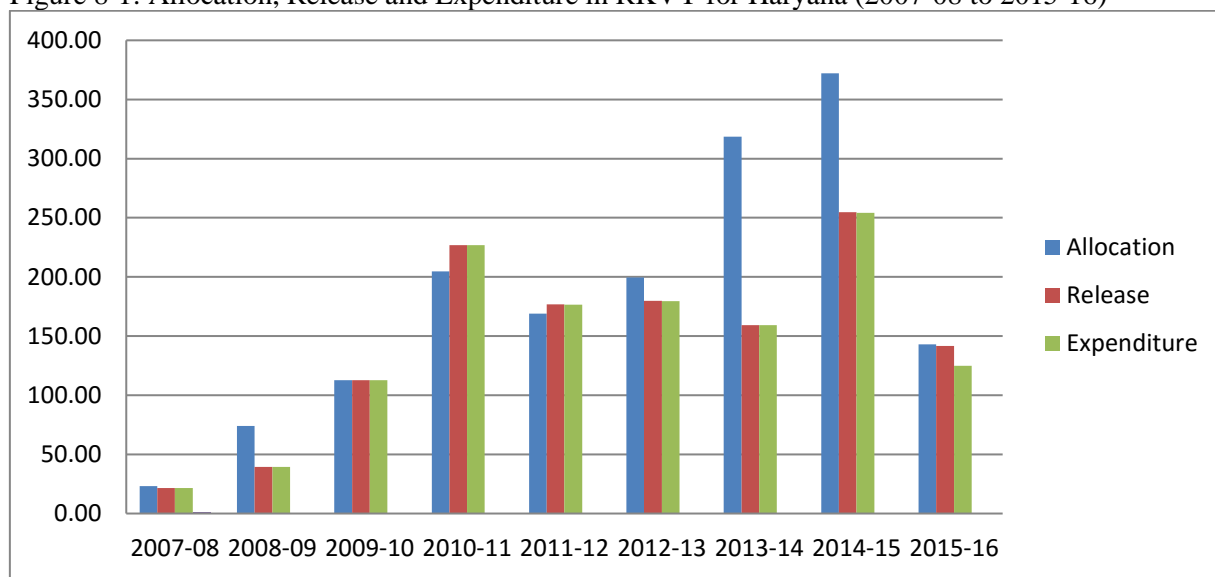
Haryana proposed 40 projects amounting to Rs. 256.8 Crores in 2016-17. Under this scheme, the central government has allocated Rs. 128.07 Crore for Haryana in 2015-16. The major issues for Haryana in agriculture are: sustainability of soil fertility, conservation of water resources, crop diversification, management of insects/pests, management of seeds etc. RKVY has taken up various projects in this state to cope up with these problems. In 2016-17, among the proposed projects, crop development, Innovative Programmes/training/Capacity Building/Others got a high allocation. Crop development got priority in terms of cost, while in terms of a number of projects, research was given priority.

In Haryana, for implementing agency, one project is surveyed for extension/training programme: Promotion of protected cultivation in Haryana state under RKVY during 2016-17. Implementing agency is Department of Horticulture, Panchkula, Haryana. Mode of campaign for the project is personal visit, newspaper, others (training camps). Number of farmers expected to get benefits from the project is expected to increase from 290 to 370 from 2017-18 to 2019-20. Farmer Producer Organizations (FPO) are the expected beneficiaries from the project other than the farmers. Developing cooperatives are complementary/supplementary projects that may help the beneficiaries.

In our sample in Haryana, total 250 households are considered for the survey, among which 200 households are the beneficiary of RKVY and 50 are non-beneficiary. In our sample, 19% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 24% of them are small farmers (operated area 2.5 to 5 acres), 25.5% is medium (operated area 5 to 10 acres) and 31% in large farmers (operated area more than 10 acres). In the non-beneficiary households, 24% are marginal, 30% are small, 18% are medium and 26% are large farmers. Average annual income of the sample beneficiary households in aggregate is Rs. 600145 in Haryana while the same for non-beneficiary households is Rs. 326399 in 2016-17. Average annual income for beneficiary households was Rs. 343194 in 2015-16 while it was Rs. 348282 for non-beneficiary households in the same year. This shows that there is an increase in income of beneficiary households in the current year. Major sources of income are farming, dairy, agriculture labour work, casual labour work, fishing apart from salary. For farming, the

average income of beneficiary households is higher than non-beneficiaries. RKVY programme in Haryana has intervened successfully in some aspects of agriculture. 30.5% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. In our sample, the beneficiaries got help from RKVY in seeds under crop development programme, training and demonstration, agriculture mechanization and soil testing. According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in employment generation, increasing production, improving market facilities, financial assistance and procurement. RKVY programme is quite successful in Haryana as per the responses that we received. According to our survey, post-harvesting storage and capacity building are two aspects which need more attention in RKVY in Haryana. Awareness regarding the programme is still lagging behind. Regarding the awareness of RKVY, it is found that in our sample, 66% of non-beneficiary households are not aware of RKVY. In our study, it is found that beneficiary households have faced problem in subsidy paid after purchase while initial payment, lack of marketing support, restricted choice and delay in transfer. For small and marginal farmers suffer from lack of marketing support, restricted choice and unavailability of complementary inputs. Apart from these problems, non-beneficiaries face problems in access to the information regarding RKVY, contact details of the department and knowledge about eligibility criteria for the programme.

Figure 8-1: Allocation, Release and Expenditure in RKVY for Haryana (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 8-1: List of selected project name and code

<i>Project Code</i>	<i>Project Name</i>
1	Direct Seed Rice
2	Promotion of Mushroom Cultivation
3	Promotion of the culture of White shrimp (Prawn) in saline water
4	Promotion of Resource conserving Technologies
5	Promotion of protected cultivation in Haryana state under RKVY during 2016-17
6	Crop diversification programme (CDP) in original green revolution states RKVY for the year 2016-17

Table 8-2: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	1(0.5)	1(2)	2(0.8)
Marginal	38(19)	12(24)	50(20)
Small	48(24)	15(30)	63(25)
Medium	51(25.5)	9(18)	60(24)
Large	62(31)	13(26)	75(30)
Total	200(100)	50(100)	250(100)

Table 8-3: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif2016-17)

			Beneficiary				
			Landless	Marginal	Small	Medium	Large
For Kharif 2016-17							
Owned land				1.6	3.8	7.1	9.9
Leased-in Land/share cropping				1.7	2.5	5.7	21.2
Leased-out Land/share cropping						0.5	4.1
Total operated area (owned+LI-LO)				1.2	3.7	8.1	22.7
Irrigated Area by canal				0	0	23.5	24.3
Irrigated Area by tube well	Rented	Electric		41	34.5	14.9	19.2
		Diesel		13	11.7	15.6	6.8
	Owned	Electric		46	35.2	32.9	36.7
		Diesel		0	18.6	13.1	13
Irrigated Area by Tanks				0	0	0	0
Irrigated Area by Wells				0	0	0	0
Irrigated Area by others				0	0	0	0
Total				100	100	100	100

Table 8-4: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
For Kharif 2016-17							
Owned land				1.4	4.5	6.2	14.4
Leased-in Land/share cropping				1.5	4	5.5	19.3
Leased-out Land/share cropping					5		7
Total operated area (owned+LI-LO)				1.3	4.1	7.4	20.2
Irrigated Area by canal				0	24.8	0	0
Irrigated Area by tube well	Rented	Electric		45.8	33.1	17.8	14.7
		Diesel		0	8.3	0	0
	Owned	Electric		54.2	33.8	60	38.8
		Diesel		0	0	22.2	46.5
Irrigated Area by Tanks				0	0	0	0
Irrigated Area by Wells				0	0	0	0
Irrigated Area by others				0	0	0	0
Total				100	100	100	100

Table 8-5: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

For Rabi 2016-17			Beneficiary				
			Landle ss	Margina l	Smal l	Mediu m	Larg e
Owned Land				1.48	3.99	7.61	10.21
Leased-in Land/Share Cropping				0.82	3.00	5.67	18.57
Leased-out Land/share cropping						0.50	4.13
Total Operated Area (Owned+LI-LO)				1.25	4.22	8.33	21.02
Irrigated Area by Canal				0.00	0.00	22.91	23.88
Irrigated Area by tube well	Rented	Electric		29.58	34.46	17.87	19.81
		Diesel		21.48	7.76	15.27	7.96
	Owned	Electric		48.93	39.14	33.42	36.59
		Diesel		0.00	18.63	10.54	11.76
Irrigated Area by Tanks				0.00	0.00	0.00	0.00
Irrigated Area by Wells				0.00	0.00	0.00	0.00
Irrigated Area by Others				0.00	0.00	0.00	0.00
Total				100	100	100	100

Table 8-6: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

For Rabi 2016-17			Non-beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned Land				1.55	4.58	6.17	15.05
Leased-in Land/Share Cropping				1.14	4.00	4.67	19.33
Leased-out Land/share cropping					5.00		6.50
Total Operated Area (Owned+LI-LO)				1.67	4.10	7.72	21.05
Irrigated Area by Canal				0.00	24.72	0.00	0.00
Irrigated Area by tube well	Rented	Electric		34.15	32.96	13.48	15.36
		Diesel		0.00	8.24	0.00	0.00
	Owned	Electric		65.85	34.08	64.04	46.22
		Diesel		0.00	0.00	22.47	38.41
Irrigated Area by Tanks				0.00	0.00	0.00	0.00
Irrigated Area by Wells				0.00	0.00	0.00	0.00
Irrigated Area by Others				0.00	0.00	0.00	0.00
Total					100	100	100

Table 8-7: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Total Sample Population		1055	281	1336
Age group	<=15	24.08	27.76	24.85
	>15 to 25	18.29	14.59	17.51
	>25 to 40	26.45	26.69	26.50
	>40 to 59	21.71	18.86	21.11
	>59	9.48	12.10	10.03
	All Groups	100.00	100.00	100.00
Education	Illiterate	14.31	16.01	14.67
	Class 1 to 5	16.97	20.64	17.74
	Above Class 5 to 8	12.89	12.81	12.87
	Above Class 8 to 12	35.17	32.03	34.51
	Above Class 12	17.44	14.95	16.92
	Other diploma	0.57	0.71	0.60
	can read and write	0.00	0.00	0.00
	can read only	0.09	0.00	0.07
	can count only	0.00	0.00	0.00
	could not attend class 1	2.56	2.85	2.62
	All Groups	100.00	100.00	100.00
Occupation	1 cultivation	59.16	71.00	59.16
	2 agricultural labour	0.25	1.00	0.25
	3 dairy	0.25	6.00	0.25
	4 casual labour	9.16	5.00	9.16
	5 self-employment (specify)	1.98	2.00	1.98
	6 salaried employment	6.93	8.00	6.93
	7 forestry	0.00	0.00	0.00
	8 Horticulture	0.00	0.00	0.00
	9 Floriculture	0.00	0.00	0.00
	10 Sericulture	0.00	0.00	0.00
	11 Fishing	12.62	0.00	12.62
	12 Aquaculture	0.00	0.00	0.00
	13 Poultry	0.00	0.00	0.00
	14 beekeeping	0.00	0.00	0.00
	15 Student	0.00	0.00	0.00
	16 housewife	0.74	0.00	0.74
	17 non-working	0.50	0.00	0.50
	888 others (no separate income)	8.42	7.00	8.42
	All Groups	100.00	100.00	100.00

Table 8-8: Percentage distribution of households according to sources of income (2016-17)

Source	Beneficiary	Non-Beneficiary
Farming	53	54
Dairy	15	25
Agricultural Labour	1	3
Casual Labour	8	9
Fishing	12	0
Salary	8	8
Other	3	0
Total	100	100

Table 8-9: Average income and cost of beneficiaries and non-beneficiaries (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)
Farming	554041	305354	248687	457717	253750	203967
Dairy	85115	43642	41474	146909	59800	87109
Poultry	600000	400000	200000			
Agricultural Labour	17400			10000		
Casual Labour	82269	12000	70269	42750	4500	38250
Forestry		12000				
Fishing	2231250	1495000	736250			
Salary	263529	29040	234489	468571	52500	416071
Other	141333	48696	92637		6800	

Table 8-10: Average income and cost of beneficiaries and non-beneficiaries (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	540621	296785	243836	524217	255435	268783
Dairy	89759	41333	48426	124100	55650	68450
Poultry	600000	400000	200000			
Agricultural Labour	16200			12333		
Casual Labour	76429	11889	64540	45500	9667	35833
Salary	255166	26917	228249	431667	45333	386333
Other	106640	55207	51433	27000	8640	18360

Table 8-11: Change in Average income and cost of beneficiaries (2016-17)

<i>Source</i>	Beneficiary		
	Average Income	Cost	Average Profit
Farming	8	9	8
Dairy	-2	-1	-4
Agricultural Labour	-12		
Casual Labour	6	0	6
Salary	0		
Other	-42	19	-80

Table 8-12: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
<i>Items</i>	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.
Rent on leased-in land	205845	122615	279646	114615
Total rent on machinery (tractor, harvester, etc.)	25959	27542	26831	27152
Expenditure on purchased water for irrigation	9598	8375	12332	8461
Expenditure on electricity for irrigation	19616	16439	19453	16042
Expenditure on diesel	49071	53368	47204	52289
Expenditure on other fuels for agriculture	7296	4889	6802	5056
Any other	141417	119531	148622	119315
<i>Total expenditure on agriculture</i>	458801	352760	540891	342931

Table 8-13: % increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	-26	7
Total rent on machinery (tractor, harvester etc.)	-3	1
Expenditure on purchased water for irrigation	-22	-1
Expenditure on electricity for irrigation	1	2
Expenditure on diesel	4	2
Expenditure on other fuels for agriculture	7	-3
Any other	-5	0
<i>Total expenditure on agriculture</i>	-15	3

Table 8-14: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project: Direct Seed Rice)

<i>items</i>	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land	240000	405000	227273	405000
Total rent on machinery (tractor, harvester, etc.)	45575	44667	45450	43500
Expenditure on purchased water for irrigation	10429	13214	13688	12286
Expenditure on electricity for irrigation	17800	15800	18116	15800
Expenditure on diesel	77455	100000	76818	120000
Expenditure on other fuels for agriculture	4722	4000	5333	4000
Any other	139985	115944	137550	110500
<i>Total expenditure on agriculture</i>	<i>535965</i>	<i>698625</i>	<i>524228</i>	<i>711086</i>

Table 8-15: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project: Promotion of Mushroom Cultivation)

<i>items</i>	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land	81409	16333	164818	12500
Total rent on machinery (tractor, harvester, etc.)	15456	34500	22400	39563
Expenditure on purchased water for irrigation	6748	5429	9606	5420
Expenditure on electricity for irrigation	11925	14640	12458	14040
Expenditure on diesel	83500	100000	89250	87500
Expenditure on other fuels for agriculture	1500	5333	1600	5333
Any other	56673	75900	67536	78000
<i>Total expenditure on agriculture</i>	<i>257210</i>	<i>252135</i>	<i>367668</i>	<i>242356</i>

Table 8-16: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project: Promotion for the culture of White shrimp (Prawn) in saline water)

<i>items</i>	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land	220000	77500	220000	58333
Total rent on machinery (tractor, harvester, etc.)	19625	13300	18644	13000
Expenditure on purchased water for irrigation	16545	4750	15773	5750
Expenditure on electricity for irrigation	27197	33633	25941	32467
Expenditure on diesel	44225	45333	43000	45417
Expenditure on other fuels for agriculture	6615	5500	5854	6500
Any other	143525	92500	141200	83500
Total expenditure on agriculture	477733	272517	470411	244967

Table 8-17: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project: Promotion of Resource conserving Technologies)

<i>items</i>	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land	334190	180000	399048	130000
Total rent on machinery (tractor, harvester, etc.)	23478	29500	19907	27500
Expenditure on purchased water for irrigation	10000		10000	
Expenditure on electricity for irrigation	20618	12520	20869	12550
Expenditure on diesel	40333	44167	35641	39333
Expenditure on other fuels for agriculture	14792	5000	12691	4500
Any other	239000	235500	240675	234000
Total expenditure on agriculture	682412		738831	

Table 8-18: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project: Crop diversification programme in Original green revolution States (CDP) RKVY for year 2016-17)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land	240000	405000	227273	405000
Total rent on machinery (tractor, harvester, etc.)	45575	44667	45450	43500
Expenditure on purchased water for irrigation	10429	13214	13688	12286
Expenditure on electricity for irrigation	17800	15800	18116	15800
Expenditure on diesel	77455	100000	76818	120000
Expenditure on other fuels for agriculture	4722	4000	5333	4000
Any other	139985	115944	137550	110500
Total expenditure on agriculture	535965	698625	524228	711086

Table 8-19: Asset ownership by beneficiary households (% of number of implements) (2016-17)

Assets	Beneficiary					Total
	Landless	Margin al	Small	Medium	Large	
Tractor	0	3	21	38	39	100
Trolley	0	3	20	38	39	100
Weeder	0	3	17	31	49	100
Manual/Power Sprayers	0	7	28	36	29	100
Threshers	0	3	17	37	43	100
Drier	0	25	50	0	25	100
Electrical Pump Sets	0	8	26	29	36	100
Diesel Pump Sets	0	6	15	26	53	100
Sprinkler sets/Drip Irrigation Equipment	0	0	0	33	67	100
Cane Crusher/Agro-processing Equipment						
Leveller	0	0	0	28	72	100
Fodder Choppers	0	8	31	31	29	100
Bullock Cart	0	0	0	0	100	100
Harvest Combine	0	0	0	0	100	100
Others	0	2	23	35	40	100

Table 8-20: Asset ownership by non-beneficiary households (2016-17)

Assets	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Tractor	6	0	22	22	50	100
Trolley	6	0	22	22	50	100
Weeder	0	0	13	25	63	100
Manual/Power Sprayers	0	12	38	23	27	100
Threshers	0	0	0	13	88	100
Drier						
Electrical Pump Sets	3	6	33	27	30	100
Diesel Pump Sets	0	0	25	50	25	100
Sprinkler sets/Drip Irrigation Equipment	0	0	0	100	0	100
Cane Crusher/Agro-processing Equipment						
Leveller	0	0	0	0	100	100
Fodder Choppers	4	11	26	33	26	100
Bullock cart						
Harvest Combine						
Others	0	0	40	20	40	100

Table 8-21: Livestock ownership by beneficiary households (2016-17)

Livestock	Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0	16	29	26	28	100
Buffalo	1	13	26	29	32	100
Young Stock	1	18	28	27	26	100
Male Draught	0	0	50	25	25	100

Table 8-22: Livestock ownership by non-beneficiary households (2016-17)

Livestock	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	4	4	27	31	35	100
Buffalo	3	22	25	25	25	100
Young Stock	3	19	27	24	27	100

Assets of sample households

Table 8-23: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	5	8	5.6
Pucca	83.5	62	79.2
Semi-Pucca	11.5	30	15.2
Others	0	0	0
Total	100	100	100

Table 8-24: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes (%)	No (%)	Total (%)	Yes (%)	No (%)	Total (%)
TV	95	5	100	82	18	100
Telephone	0.5	99.5	100	0	100	100
Mobile phone	99.5	0.5	100	100	0	100
Cycle	51	49	100	56	44	100
Two wheeler	74.5	25.5	100	54	46	100
Four wheeler	20	80	100	6	94	100
Refrigerator	77	23	100	56	44	100

Table 8-25: Average value of the crop-wise cultivated area, irrigated area, production, the price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17).

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
Paddy	9.08	9.08	205.74	195.72	1584.34	145145.16	164937.72
Wheat	8.86	8.95	160.42	145.82	1628.46	112275.00	125188.09
Bajra	3.50	3.50	40.00	39.00	1350.00	25000.00	27650.00
Maize	3.00	3.00	21.00	20.00	1400.00	25000.00	3000.00
Masur	0.50	0.50	4.00	3.00	4000.00	6000.00	6000.00
Moong	2.00	2.00	5.75	9.00	4900.00	10500.00	33600.00
Mustard	1.80	1.80	13.70	12.50	3537.50	17800.00	26418.75
Cotton	2.00	2.00	22.00	22.00	4200.00	40000.00	52400.00
Sugarcane	6.36	6.36	1562.80	1562.80	308.76	226000.00	256530.14
Fruit	2.00	2.00	350.00	350.00	900.00	130000.00	185000.00
Vegetable 1	2.18	2.18	223.61	222.57	4903.13	73427.08	1017875.77
Vegetable 2	0.75	0.75	80.25	80.25	3837.50	37750.00	270209.38
Spices	3.00	3.00	20.00	20.00	3000.00	35000.00	25000.00
Others	5.41	5.41	950.00	950.00	337.50	44500.00	276125.00

Table 8-26: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

	Non-beneficiary						
<i>Crop</i>	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
Paddy	7.13	7.13	154.78	142.24	1634.39	105231.71	127250.34
Wheat	7.14	7.14	126.84	111.77	1972.39	86666.67	133792.35
Jowar	2.50	2.50	24.00	24.00	1250.00	12500.00	17500.00
Bajra	4.00	4.00	35.00	32.00	1300.00	25000.00	16600.00
Tur	2.00	2.00	15.00	13.00	3500.00	15000.00	30500.00
Gram	1.00	1.00	4.00	3.00	4200.00	6000.00	6600.00
Mustard	3.50	3.50	23.17	21.17	3650.00	30166.67	47091.67
Cotton	2.00	2.00	20.00	20.00	4500.00	35000.00	55000.00
Sugarcane	10.00	10.00	2062.50	2062.50	287.50	302500.00	290468.75
Vegetable 1	1.01	1.01	253.50	253.50	4075.00	23333.33	1009679.17
Vegetable 2	2.00	2.00	250.00	250.00	400.00	30000.00	70000.00
Spices	1.00	1.00	16.50	16.50	3000.00	15000.00	34500.00
Others	18.00	18.00	3200.00	3200.00	320.00	300000.00	724000.00

Table 8-27: Difference in average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops among beneficiary and non-beneficiary households (2016-17)

Crop	% difference among Beneficiary and Non-Beneficiary						
	Cultivate d Area (in Acres)	Irrigated Area (in Acres)	Producti on (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitabil ity
Paddy	27.33	27.33	32.92	37.59	-3.06	37.93	29.62
Wheat	23.99	25.21	26.47	30.46	-17.44	29.55	-6.43
Jowar	-100.00	-100.00	-100.00	-100.00	-100.00	-100.00	-100.00
Bajra	-12.50	-12.50	14.29	21.88	3.85	0.00	66.57
Mustard	-48.57	-48.57	-40.86	-40.94	-3.08	-40.99	-43.90
Cotton	0.00	0.00	10.00	10.00	-6.67	14.29	-4.73
Sugarcane	-36.40	-36.40	-24.23	-24.23	7.39	-25.29	-11.68

Table 8-28: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landle ss	Margin al	Small	Mediu m	Large	Landle ss	Margin al	Small	Mediu m	Large
paddy		1783.3	1565.5	1529.8	1583.3		1783.3	1565.5	1529.8	1583.3
wheat		1623.6	1627.7	1634.0	1624.8		1623.6	1627.7	1634.0	1624.8
jowar									1300.0	1200.0
bajra				1400.0	1300.0				1300.0	
maize					1400.0					
tur									3500.0	
gram							4200.0			
masur					4000.0					
moong			3300.0	6500.0						
mustard			3725.0	3300.0	3400.0		3500.0	4000.0	3600.0	3200.0
cotton				4200.0						4500.0
sugarcane		305.0	315.0	308.8	307.7	300.0		300.0		275.0

Table 8-29: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16

	2015-16									
	Beneficiary					Non-Beneficiary				
Crop	Landle ss	Margin al	Small	Mediu m	Large	Landle ss	Margin al	Small	Mediu m	Large
paddy		1682.2	1498.7	1472.1	1506.0			1616.3	1672.5	1477.8
wheat		1538.8	1547.6	1562.5	1558.9		1568.8		1563.9	1538.6
jowar									1250.0	1300.0
bajra				1350.0	1500.0				1200.0	
maize					1200.0					
gram							4000.0			
moong			3200.0	7000.0						
mustard			3725.0	3500.0	3000.0		3800.0	4100.0	4000.0	3500.0
cotton				4000.0						4550.0
sugarcane		300.0	302.0	291.5	296.7	250.0		310.0		250.0

Table 8-30: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
Items	% of Total Income	Average income	% of Total Income	Average income
Milk	85	86200	100	146667
Milk Products: Ghee	0	3000	0	2000
Eggs	0	25000	0	
Animal Sale	14	245000	0	
TOTAL	100	94000	100	146762

Table 8-31: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Beneficiary	Non-Beneficiary
Milk	-60467	-51706	5.6	10
Milk Products	1000	0	50.0	0

Table 8-32: Awareness regarding RKVY (2016-17).

	Beneficiary			Non-Beneficiary		
	Yes	No	overall	Yes	No	overall
Have you heard about RKVY?	100	0	100	34	66	100
Did you receive any benefits from RKVY in the year 2016-17?	98.5	1.5	100	0	100	100
Did you receive any benefits from RKVY in the last five years excluding this year?	30.5	69.5	100	2	98	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	13.5	86.5	100	10	90	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	54	46	100	44	56	100

Table 8-33: Source of Awareness regarding RKVY (%) (2016-17).

	Beneficiary	Non-Beneficiary	Total
Friends & Neighbours	13	94	19
Newspaper	0	0	0
Agriculture/Horticulture Department	48	0	44
SAU	7	0	6
KVK	1	0	1
Input Suppliers	4	0	4
TV/Radio	0	0	0
Agri. Exhibitions	3	0	3
ZP/GP	25	6	23
Other Sources	0	0	0
Total	100	100	100

Table 8-34: Number of beneficiaries who bought the implements in 2016-17.

<i>Implements</i>	Number of Beneficiaries	Number of Beneficiaries
Tractor/mini-tractor		2
Rotavator	12	
Cultivators	1	
Harrow	3	
Seed drill	14	
Others (specify)	17	1

Table 8-35: Details of intervention in agriculture mechanization in Haryana for beneficiaries (No.)

		Rotavator	Cultivators	Harrow	Seed drill
No Of Beneficiaries Of RKVY		12	1	3	14
Number of benefits received					
Total Cost (Rs.)		664	22	62	844
Amount financed by loan (Rs.)					
Subsidy Amount From RKVY (Rs.)		185	7	26	195
Mode of subsidy Transfer:					
	Price subsidy	1			
	DBT	10	1	3	14
If DBT, Number Of Days Taken To Receive Subsidy?		156	3	63	134
Benefits derived from the implement					
1	Solved labour problem	4	1		4
2	Enabled timely operations	1			6
3	Saved water	3		1	2
4	Helped in controlling weed	1			1
5	Helped in good plant growth	7		3	9
6	Reduced Drudgery	5		1	3
7	Helped in transportation				
8	Reduced cost of Cultivation	2	1	1	1
9	Increased cropping intensity	2			2
10	Not useful				
Subsidy received from any other scheme					2
Subsidy Not Received From Any Other Scheme		12	1	3	12
If Subsidy Not Received, Number Of Households Who Have Said Who Would Buy This Implement		4		2	7
If Subsidy Not Received, Number Of Households Who Have Said Who Would Not Buy This Implement		8	1	1	7

Table 8-36: Percentage distribution of farmers according to the interventions made under crop development (From Kharif, Rabi & Summer 2016-17)

		Crop 1	Crop 2	Fertilizer s	Micro nutrient s	Bio- fertilizer s and bio- control agents	Pesticide s	Other s
Beneficiary	Landless	0						
	Marginal	5						
	Small	31						
	Medium	36						
	Large	28						
	Total	100						
Non-Beneficiary	Landless	1	1	1	1	1	1	1
	Marginal	27	20	20	20	20	20	20
	Small	22	25	25	25	25	25	25
	Medium	18	24	24	24	24	24	24
	Large	31	30	30	30	30	30	30
	Total	100	100	100	100	100	100	100

Table 8-37: Information regarding actual cost and subsidy received through RKVY programme for crop development.

Seed	Crop1				
	Number of Beneficiaries	Actual cost	Subsidy received		
			Kg	Rs.	Average amount per beneficiary (Rs.)
Landless	0				
Marginal	4	19100	80	4000	1000
Small	25	237200	1160	58000	2320
Medium	29	229000	1600	80000	2759
Large	22	253700	1160	58000	2636
Total	80	739000	4000	200000	2500

Table 8-38: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?		Total	Soil health card issued? (who tested soil)		Total
	Yes	No		Yes	No	
Beneficiary						
Landless	0	100	100			
Marginal	32	68	100	58	42	100
Small	35	65	100	56	44	100
Medium	51	49	100	58	42	100
Large	31	69	100	74	26	100
Total	37	63	100	61	39	100
Non-beneficiary						
Landless	0	100	100			
Marginal	8	92	100	0	100	100
Small	13	87	100	50	50	100
Medium	22	78	100	100	0	100
Large	38	62	100	40	60	100
Total	20	80	100	50	50	100

Table 8-39: Place of Soil testing (%)

<i>Land size</i>	Place of soil test			
	Government Institute	Private organization	Do not know	Total
Beneficiary				
Landless				
Marginal	92	0	8	8
Small	83	11	6	17
Medium	96	0	4	4
Large	95	5	0	5
Total	92	4	4	8
Non-beneficiary				
Landless				
Marginal	0	0	100	100
Small	100	0	0	0
Medium	100	0	0	0
Large	60	40	0	40
Total	70	20	10	30

Table 8-40: Information regarding training and demonstration under RKVY (% of households)
(2016-17)

	No. of households undergone training	No. of households undergone Demonstration	No. of households found training beneficial	No. of households want more training?
Landless	50	50	50	50
Marginal	70	66	70	66
Small	33	27	32	29
Medium	23	18	23	20
Large	52	40	45	44
Total	44	37	42	39

Table 8-41: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms).

	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	100	11	29	33	18	24
Contact details of the department which pay subsidy not available	0	8	25	20	11	16
Eligibility or criteria for availing the subsidy not known	0	29	33	37	23	30
Procedure for the subsidy very tedious	0	42	54	39	32	41
No of documents required for availing subsidy are too many	0	34	54	37	39	41
Subsidy paid after purchase while initial payment remains the highest problem	0	45	88	84	85	78
Delay in transfer	0	39	75	80	69	68
Prescribed machinery/asset not easily available in the market	0	34	10	10	5	13
Institutional financing facility not available	100	26	48	63	40	46
Capacity building/technical advice not provided	0	5	35	51	21	29
Long time gap between the purchase and receiving the subsidy amount	0	26	83	82	77	70
Biased towards large land owners	0	39	27	27	23	28
Poor quality of materials/machinery are supplied	0	50	25	22	10	24
Implementing agencies are located far away	0	24	29	29	37	31
Incidence of bribery	0	29	17	24	10	19
Lack of monitoring	100	50	40	41	27	39
Complementary inputs not available	100	53	63	63	52	58
Restricted choice	0	71	67	59	65	65
Lack of marketing support	100	74	69	69	63	68
Any other (specify)						

Table 8-42: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms).

	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	100	92	87	100	100	94
Contact details of the department which pay subsidy not available	100	100	87	89	92	92
Eligibility or criteria for availing the subsidy not known	100	75	93	89	92	88
Procedure for the subsidy very tedious	0	75	47	67	54	58
No of documents required for availing subsidy are too many	100	67	47	67	46	56
Subsidy paid after purchase while initial payment remains the highest problem	0	50	87	67	69	68
Delay in transfer	0	50	87	78	77	72
Prescribed machinery/asset not easily available in the market	100	25	47	11	54	38
Institutional financing facility not available	0	75	73	56	77	70
Capacity building/technical advice not provided	100	92	80	89	77	84
Long time gap between the purchase and receiving the subsidy amount	100	100	87	78	62	82
Biased towards large land owners	0	50	47	44	69	52
Poor quality of materials/machinery are supplied	0	33	27	56	54	40
Implementing agencies are located far away	0	42	47	44	46	44
Incidence of bribery	100	50	67	67	46	58
Lack of monitoring	100	75	73	89	69	76
Complementary inputs not available	100	83	67	78	77	76
Restricted choice	100	92	73	89	92	86
Lack of marketing support	100	100	93	100	92	96
Any other (specify)	0	0	0	0	0	0

Table 8-43: Opinion of beneficiary households about RKVY programme (in percentage terms).

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landle ss	50	0	50	0	0	50	50	0	50	0
Margin al	74	2	70	6	40	36	62	14	76	0
Small	54	22	73	3	56	21	75	2	73	3
Mediu m	65	20	82	3	73	12	77	8	82	3
Large	79	4	79	4	69	13	75	9	83	0
Total	68	12	76	4	60	20	72	8	78	2

Table 8-44: Opinion of beneficiary households about RKVY programme (in percentage terms).

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landle ss	50	0	50	0	0	50	50	0
Margin al	60	16	48	28	28	48	64	12
Small	59	17	44	32	21	56	71	5
Mediu m	65	20	43	42	32	53	80	5
Large	72	11	63	20	24	59	73	9
Total	64	16	50	30	26	54	72	8

Table 8-45: Details of projects for implementing agency survey

Sl. No.	Project Name	Implementing agency
01	Direct Seed Rice	Department of Agriculture and farmers welfare, Kurukshetra Haryana
02	Promotion of Mushroom Cultivation	Department of Horticulture, Panchkula Haryana
03	Promotion for the culture of White shrimp (Prawn) in saline water	Distt Fisheries Officer cum CEO FFDA Rohtak
04	Promotion of Resource conserving Technologies	Agriculture and Farmers welfare deptt, Panchkula, HR
05	Promotion of protected cultivation in Haryana state under RKVY during 2016-17	Department of Horticulture, Panchkula Haryana
06	Crop diversification programme in Original green revolution States (CDP) RKVY for year 2016-17	Department of Agriculture and farmers welfare, Kurukshetra Haryana

Table 8-46: General information regarding Implementing agency

Issues	Project: Promotion of protected cultivation in Haryana state under RKVY during 2016-17
Type of knowledge and training imparted	Others
Whether project mentioned in DAP	Don't know about DAP
Project was proposed by	Implementing Agency
Level at which the project was proposed	Gram Panchayat Level

Table 8-47: Fund flow in the project

Issues	Project: Promotion of protected cultivation in Haryana state under RKVY during 2016-17
Funds required for the project in 2016-17	1081.2 lakhs
Funds approved for the project in 2016-17	1081.2 lakhs
Funds released for the project in 2016-17	998.1 lakhs
Number of times were the funding released for the project in 2016-17	2
Major problems in the release of funds.	Reduced Amounts
Number of phases required	2
In case of multiple phases, ways for management of funds.	Supplement from other projects within RKVY

Table 8-48: Physical capacity of the project

Issues		Project: Promotion of protected cultivation in Haryana state under RKVY during 2016-17
If there are multiple phases, how the project is designed to fulfil the physical target?	Phase 1	Physical approval are achieved
Required capacity in the selected work for the agency in terms of physical infrastructure.		As per project period field staff motivate farmers to adopt the technology
Required capacity in the selected work for the agency in terms of human resources		Farmers are guided by organizing training camps, awareness programme.
Present capacity in the selected work for the agency in terms of physical infrastructure		296701Sqm for 2016-17
Present capacity in the selected work for the agency in terms of human resources.		Technical staff has been deployed in the field

Table 8-49: Benefits and Challenges regarding the project

Issues		Project: Promotion of protected cultivation in Haryana state under RKVY during 2016-17
Mode of campaign for the project		Personal Visit, newspaper, others(training camps)
Number of farmers expected to get benefits from the project	2017-18	290
	2018-19	320
	2019-20	370
Beneficiaries from the project other than the farmers		FPO's
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Developing Co-operatives

Table 8-50: Convergence with other projects

Issues		Project: Promotion of protected cultivation in Haryana state under RKVY during 2016-17
Whether any convergence with other schemes		No
Opinion: Whether the project will meet the target of beneficiaries		Yes

9 HIMACHAL PRADESH

With a land size of 55,673 square kilometer and a population of 68.64 lakh, Himachal Pradesh is one of the important hilly states of Northern India. It is bordered by Jammu and Kashmir on the north, Punjab and Chandigarh on the west, Haryana on the south-west, Uttarakhand on the south-east and by the Tibet Autonomous Region on the east. This state consists of 12 districts. Almost 90% of the state's population lives in villages. According to 2011 census 90% of the population was living in rural area (Statistical Abstract of Himachal Pradesh¹⁴).

Agriculture is the main occupation of the people of the state. About 69% of the total workers are engaged in agriculture. Of the total area of state, 75% is available for cultivation. Out of this area, 'net area sown' and 'current fallows' account for only 13%. Wheat, barley, paddy and maize are the important cereal crops under cultivation. Seed potato, ginger and off-season vegetables are the important cash crops. Apple is the major horticultural crop, the production of which was 777.13 lakh tonne during 2015-16 (Statistical Abstract OF Himachal Pradesh 2015-16).

In 2014-15 Agriculture and Allied services contributed 18.63% of the State GDP (Planning Commission)¹⁵. According to the 2010-11 Agricultural Census, land holdings of less than one hectare accounted for 69.8% of the total holdings. The area covered by these holdings formed only 28.6% of the total area. If small farmers are also taken into account with marginal farmers, then the percentage of holdings comes to 88 whereas the area coverage up to 2.0 hectares size class is only 25.6%. The average size of holding was 1.0 hectares in 2010-11 (Statistical Abstract of Himachal Pradesh 2015-16).

Before discussing the findings of the survey, it will be helpful to look into the overall agricultural performance of the state with the help of some pertinent secondary data. Table 9-1 and Table 9-2 represent few of the major agricultural indicators over the period of RKVY.

14 Statistical Abstract of Himachal Pradesh (2015-16). Department Of Economics And Statistics

15 Url:http://planningcommission.nic.in/data/datatable/data_2312/DatabookDec2014%2,067.pdf accessed on march 2017

Table 9-1 renders trends of some of the basic indicators related to agriculture. It may be noted that considerable growth was recorded in the post-RKVY period. The first block of the table shows periodic averages of Agricultural Gross Domestic Product (AGSDP) of Himachal Pradesh over recent time periods. For the period of 2004-05 to 2007-08, the yearly average AGSDP was 653,994 lakh rupees, which became 690,542 lakh rupees during 2008-09 to 2011-12. For the next period of 2012-13 to 2014-15 it was 828,323 lakh rupees. On the other hand, if we distribute the time line as pre-RKVY and post-RKVY, we can see a 13% growth rate of average AGSDP in post-RKVY period in comparison to the pre-RKVY period. The second block of Table 9-1 shows the periodic trend growth rates of AGSDP of Himachal Pradesh.

The initial trend AGSDP growth rate was 4.19% during the period of 2004-05 to 2007-08. During the next four year period of 2008-09 and 2011-12 showed a little low of 2.18%, which again increased during the period of 2012-13 to 2014-15 to 4.19%. The trend AGSDP growth rate of Himachal Pradesh for pre-RKVY period (2004-05 to 2007-08) was 4.19% which increased to 5.27% during the post-RKVY period (2008-09 to 2014-15).

In the third block of Table 9-1, we have shown average value of agriculture and allied services. These sectors showed a growth of 8.36 in post-RKVY period over the pre-RKVY period. The trend growth of pre-RKVY period was 8.36%, which shoot up to 12.90 during the post-RKVY period.

Table 9-2 captures the changing patterns of land use statistics of Himachal Pradesh. Evidently, during the RKVY period, net sown area, total cropped area and cropping intensity have shrunk marginally, but gross irrigated area and net irrigated area increased 5.84% and 0.5% respectively.

9.1 RESULTS FROM PRIMARY SURVEY

9.1.1 RESULTS FROM HOUSEHOLD SURVEY

RKVY in Himachal Pradesh, started in 2007-08. Figure 1 shows the details of yearly allocation, release and expenditure amount of RKVY in Himachal Pradesh. Himachal Pradesh is among those states to have placed very less demand through RKVY. According to Statistical Abstract of Himachal Pradesh (2015-16), the lower land-holding size, and consequent space for lesser

agricultural mechanization were the reasons behind the lower demands. Animal husbandry is the most prioritized sector in Himachal Pradesh. In 2015-16, this state had proposed for 24 projects worth of cost 53 crore. In 2016-17, it had demanded for 53.1 crore rupees. Table 9-3 gives an aggregated summary of projects demanded by Himachal Pradesh for 2016-17.

9.1.1.1 AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

The households are categorized on the basis of their operational holding of lands. Peasantry without any land of their own to cultivate is characterized as landless farmers. Farmers with operational holding of less than 2.5 acres categorized as marginal farmers. Households with operational holding of 2.5-5 acres are considered as small farmers with 5-10 acres as medium farmers and with 10 acres or more are considered as large farmers.

In our study we have considered 10% of the projects for the state and analyse the performance of RKVY. The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) on their status of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefiting the cultivators.

Our survey was conducted over a 150 households (768 individuals), of which 120 households (627 individuals) were beneficiaries of RKVY and 30 households (141 individuals) were non-beneficiaries.

Table 9-4 and Table 9-5 provides a detailed size class wise description of our sample. Table 9-4 gives the detailed numbers of the sample according to land holding size of the respondents. This may be noted that no respondents were found from landless category. Similarly, in the medium size class size, no respondents were found from non-beneficiary category.

Table 9-5 shows the frequency of the respondents in percentage share of the total beneficiaries and non-beneficiaries, and then as percentage share of each land holding size. As we have already noted, there is no representation of the landless farmer (both from beneficiary and non-beneficiaries), and non-beneficiary medium farmers in our sample. Maximum respondents are from marginal size class (76%).

9.1.1.2 *LAND HOLDING AND IRRIGATION*

Land is an important factor input for agriculture. Table 9-6 describes the land holding pattern for different size class farmers over beneficiaries and non-beneficiaries.

In most of the cases the beneficiaries were found possessing more land, than their counterparts of the non-beneficiary (though small farmers among beneficiaries reported to possess less land than small farmers among non-beneficiaries).

Average size of land holding and access to basic irrigation facilities have been summed up in Table 9-6 and Table 9-7. We can observe that average land holding of the beneficiaries is bigger than the non-beneficiaries. For the large farmers this difference of average land holding widens drastically (for large farmers from the cohort of beneficiaries, the average land holding was 5.83 hectare, whereas the same for those from the non-beneficiary segment, it was 0.50 hectare). In terms of total operated area, too, the beneficiary farmers were found to be operating over a bigger tract of land than their counterparts from the non-beneficiary segment.

Table 9-8 shows the size class-wise and beneficiary- and non-beneficiary-wise distribution of reach of various modes of irrigation. Only marginal farmers from beneficiaries reported having accessed canal irrigation for cultivation; 28% of marginal farmers, 34% of small farmers and 32% of medium farmers among beneficiaries reportedly accessed rented and electricity-driven tube wells. Only 40% of the marginal farmers from non-beneficiary category reported to have accessed rented electricity driven tube wells. None of the respondents were found to use rented diesel plied rented tube wells. 24% of marginal farmers, 41% of small farmers, 68% of medium farmers and 100% of large farmers from beneficiary category reported to have been accessing own electricity-driven tube wells. From non-beneficiaries, 100% of marginal and small farmer households responded to have been using own electricity-driven tube wells. Only marginal farmers (25% of total marginal beneficiary farmers) from beneficiary category reported to have used own diesel engined tube wells.

9.1.1.3 INCOME: TOTAL AND PROJECT WISE

In this section we will discuss the earning pattern of the respondents of sample survey from Chhattisgarh. Farming households were asked about their earning during last 365 days, and the sources of their earning. Then their responses were sorted according to beneficiaries and non-beneficiaries

Table 9-8 expresses the major sources of income of the respondents of our survey. After agriculture, salaried job was the most frequently found secondary source of income. Of the beneficiaries 57% respondents and another 63% of the non-beneficiary respondents replied salaried job to be their major source of secondary income. According to 42% of the beneficiaries and 53% of the non-beneficiaries, dairy was their major source of income. Among the non-beneficiaries, 21% respondents reported agricultural labour, and another 53% replied casual labour as their secondary income source as opposed to merely 0% and 7% of the beneficiaries, respectively. It may be inferred that the higher percentage of non-beneficiaries was found engaged in other secondary sources for income; and, for casual or agricultural labourers, the participation of non-beneficiaries is higher than of beneficiaries. This phenomenon may have been caused by two different reasons. One, possibly the RKVY has attracted the beneficiaries to engage more towards agriculture, and hence they were found less frequent in reporting different sources of secondary income. Or better-off people accessed RKVY projects more easily because their access to the local system was better.

9.1.1.4 AVERAGE INCOME:

Income and profit is one of the most fundamental tools to measure impact of any programme. Here, the changes in the profit levels of the respondents have been studied in order to study the impact of RKVY.

There is a visible increase in the profit for both beneficiaries and non-beneficiaries. Table 9-9 shows the average profit pattern of the beneficiaries and non-beneficiaries over the major trades they were reportedly engaged. Evidently, Table 9-9 measures the percentage increase over the years between beneficiaries and non-beneficiaries.

Table 10, helps to grasp the comparison with further detail. The average income, for farming, have reportedly increased at 19% and 16% for beneficiaries and non-beneficiaries, respectively. But the profit increased by 23% and 18% for beneficiaries and non-beneficiaries respectively. The growth rate of average income for beneficiaries were 5% for floriculture, 8% for dairy, 5% for casual labourers, and 5% for salaried employees. At the same time the income of the non-beneficiaries grew by 20% in dairy, -3% for agricultural labourers, 24% for casual labourers and 9% in salaried employees in 2016-17 over 2015-16. So income growth for the beneficiaries were higher than the non-beneficiaries in all the trades except dairy and income from casual labour. Cost of the beneficiaries grew by 14%, 17% and 7% for farming floriculture and dairy for the beneficiaries. The cost growth for the non-beneficiaries over this period was 11% for farming and 11% dairy.

9.1.1.5 ANNUAL EXPENDITURE ON AGRICULTURE

Rising agricultural cost has been one of the major causes of concern over last few years. Increasing spirals of expenditure in agriculture often dampen the profit and income of farmers, despite decent production and expected prices. This section attempts to trace the impact on agricultural production on beneficiaries and non-beneficiaries of RKVY. In the year of 2016-17 the overall average expenditure for beneficiaries was Rs. 139,378, and of non-beneficiaries was Rs. 58,037. The average overall cost for the beneficiaries and non-beneficiaries in 2015-16 was Rs. 115,119 and Rs. 52,351 respectively. Component wise details of average cost of beneficiaries and non-beneficiaries is given in Table 9-11.

According to Table 9-12, the total expenditure of the beneficiaries and non-beneficiaries have grown at 21% and 11% respectively. The specific heads like total rent on machinery, expenditure on electricity for irrigation and expenditure on diesel, are reported to have become dearer for beneficiaries slower than for non-beneficiaries. It is the rent on the leased-in land and non-diesel fuels where beneficiaries faced the steepest increase in the expenditure spiral.

9.1.1.6 HOUSEHOLD ROSTER

Of the 150 households surveyed, 120 were beneficiaries of the RKVY project and 30 were non-beneficiaries. In terms of the total population, it was 627 beneficiaries and 141 non-beneficiaries

that were surveyed during the study. Table 9-13 gives a brief description about the main characteristics of the sample size.

9.1.1.7 AGE GROUP WISE CLASSIFICATION:

Maximum number of respondents was from 25-40 age group. It is the same age group, wherein maximum number of non-beneficiaries belong to. However, quite interestingly, maximum numbers of beneficiaries were from 40-59 year age group. Studies conducted for other states have generally shown the beneficiaries and non-beneficiaries to be from same age group. 20% of the beneficiaries were below 15 bracket of age group. 22% of the non-beneficiaries from this age group. 16% and 26% of the beneficiaries and non-beneficiaries were from 25-40 age group. Another 25% of the beneficiaries and 22% of the non-beneficiaries were from 40-59 age class. Only 12% of the beneficiaries and a same percentage of non-beneficiaries were aged more than 59

9.1.1.8 CLASSIFICATION ACCORDING TO EDUCATIONAL LEVEL:

Maximum number of respondents was found to have studied between the 8th and 12th standards. Almost 43% of total number respondents, 43% of beneficiaries and 41% of non-beneficiaries were found to be from the range of this educational level. It may be noted here that the beneficiaries were found to have accessed education with a greater degree.

9.1.1.9 OCCUPATIONAL CLASSIFICATION:

Housewives and students were the most frequent answer, (28% of beneficiaries, 26% of non-beneficiaries reported themselves to be house wives, whereas, 26% of the beneficiaries and 21% of the non-beneficiaries were students) when about their occupation. It is interesting to observe that, higher percentage of beneficiaries was found to have reported cultivation, self-employment and salaried employment to be their occupation than the non-beneficiaries. Reverse is the pattern for occupations like casual labourers and agricultural labourers. The non-beneficiaries were found to have engaged with these two occupations in higher ratio than beneficiaries. This observation suggests a possibility of correlation between the beneficiaries and upward mobility.

9.1.1.10 ASSET OWNERSHIP

Asset creation and capital accumulation in the rural and farm sector was one of the primary stated objective of RKVY. In the study, the farmers were asked whether they own agricultural instruments like tractor, trolley, weeder, power sprayer etc. When compared in terms of numbers, for tractors, the distribution of assets were perfectly in line with the size of land holding. With the help of Table 9-14 to Table 9-18 we have attempted to discuss the asset creation pattern under the presence of RKVY. Table 9-14 summarizes the average asset holding pattern across the land holding classes and beneficiaries and non-beneficiaries of RKVY, as reported during the survey. The beneficiaries of each size class have reported to have more agricultural assets than the non-beneficiaries at every size class of land holding.

Table 9-14 describes the asset holding pattern in terms of number of asset material reported by the respondent. This is interesting to observe that for tractors, trolleys and power sprayers, the beneficiaries have reported to have lesser number of assets than the non-beneficiaries (Table 9-14 was prepared after standardizing by the size of each class).

9.1.1.11 DISTRIBUTION OF LIVESTOCK AMONG FARMERS:

Much like agricultural assets, livestock too is found to be unevenly distributed in the favour of higher size class farmers. However smaller/ cheaper animals like goat and poultry was more likely to be possessed by the lower bracket of farmers (marginal to medium-size farmers). And in most of the cases the beneficiaries have reported to have been rearing more number of livestock than the non-beneficiaries. This table is also prepared after standardizing the numbers by the strengths of the respective size classes.

9.1.1.12 TYPE OF HOUSE:

Higher proportion of beneficiaries responded to own pucca houses in comparison to the non-beneficiaries (64% versus 40%). The trends shown in Table 9- 17 remain more or less unaltered when we look at the project wise details.

9.1.1.13 OTHER ASSETS:

In almost all the heads, it can be seen, that the beneficiaries are supposed to have own more assets than the non-beneficiaries. It can be interesting to investigate the causality of relationship between the comparative affluence of beneficiaries over non-beneficiaries (Table 9- 18).

9.1.1.14 CROP DETAILS

Farmer respondents were asked about details of their crop production. Questions were set in order to a sense of the changes of crop production quantity, cultivable land, price, cost and profitability of the crops over periods.

Table 9-19 gives percentage difference between beneficiaries over non-beneficiaries for cultivated area, irrigated area, production in physical quantity, marketed quantity, price received, total paid-out costs and profitability in percentage terms. Beneficiaries' cultivated area for wheat, maize, vegetable1 and vegetable 2 were 98%, 109%, -2% and 2% more than non-beneficiaries. The beneficiaries on average accessed 253%, 460%, 177% and 108% more irrigated area than non-beneficiaries for wheat, maize vegetable 1 and vegetable 2 respectively. The percentage difference in physical value of production between beneficiaries and non-beneficiaries were 91%, 53%, 145% and -10% for the crops respectively. The percentage difference for marketed quantity for these crops were 187%, 57% 145% -10% respectively. In terms of profitability the percentage difference was 40%, 234%, 164% and 6%. We can see that the beneficiary have done fairly well in terms of cultivable area, irrigated area and marketed quantity than the non-beneficiaries. Only in wheat the beneficiaries had lower profitability than the non-beneficiaries.

Table 9-20 explores the profitability difference between beneficiaries and non-beneficiaries to a further level. The first five columns describe profit of beneficiaries over non-beneficiaries in 2015-16, and the last five columns store the profit of the beneficiaries in 2016-17 over their profit of 2015-16.

9.1.1.15 PERCENTAGE DISTRIBUTION OF HOUSEHOLD ACCORDING TO SOURCE OF INCOME (ANIMAL HUSBANDRY COMPONENT)

Animal husbandry was one of the prioritized project for RKVY in Himachal Pradesh. Despite that, milk was found to be the sole important component of earning from dairy related products (Table 9-20). For beneficiaries, 93% of the dairy income came from milk. It was 97% for the non-beneficiaries. Of the total income from dairy for beneficiaries, in 2016-17, 4% came from milk products. Non-beneficiaries reported to have earned nothing from milk products during this period.

Table 9-21 constructs the comparison between the income of dairy and dairy related products between the beneficiaries and non-beneficiaries, and over the years. In 2016-17 the beneficiaries earned 115% more profit than the non-beneficiaries in milk selling, the same ratio was 132% in 2015-16. On the one hand, beneficiaries' income over selling milk grew by 5% from 2015-16 to 2016-17, whereas the same rose by 15% for non-beneficiaries for the same period of time.

Table 9-22 shows the comparison of beneficiaries' income from dairy products over the years and over the non-beneficiaries. In 2016-17 the percentage difference between beneficiaries and non-beneficiaries was 115% for milk, 126% for animal sale and total income from dairy respectively.

On the other hand, beneficiaries' income growth in 2016-17 over 2015-16 was 6%, 38% and 6% for milk, animal sale and total respectively. The same for the non-beneficiaries was 15%, 33% and 15%.

9.1.1.16 AWARENESS ABOUT RKVY

Awareness is one of the key components for achieving desired outreach of any government run programme (Table 9-23). Though all the beneficiaries were informed about it, only 57% of the non-beneficiaries reported to be in knowledge of RKVY. This observation calls for higher emphasis for dissemination of information about RKVY. All the beneficiaries accepted to have benefited from RKVY this year, only 28% of the beneficiaries acknowledged to have benefited

in last 5 years through RKVY whereas, 67% of respondents from beneficiaries accepted to have benefited from government projects other than RKVY.

Table 9-24 displays the beneficiaries' feedback on the reflectivity with which various sources have disseminated the prospects of RKVY to agricultural households. Here, 54% of the beneficiary have responded to have known about RKVY from Departments of Agriculture, 28% from Gram Panchayat/ Zila Parishad and another 18% reported to have known about friends and neighbours. Sources like Television/ radio, newspapers, input suppliers seem to have played no impact as far as popularizing RKVY is concerned.

9.1.1.17 AGRICULTURAL MECHANIZATION:

Agricultural asset building has been recognized very important for the overall development of agriculture, in RKVY. This section looks into the aspect of agricultural mechanization through RKVY. We have already observed that average land holding size is very small in Himachal Pradesh. Smaller tracts of lands and uneven terrain are the reasons behind low penetration of agricultural mechanization of this state (Statistical Abstract OF Himachal Pradesh 2015-16).

Table 9-25 presents the situation of agricultural mechanization in Himachal Pradesh. It was found that, tiller was the only major agricultural machine, for which the beneficiaries had received assistance in 2016-17. According to our survey, there was only one beneficiary to avail that assistance. However, 17 other beneficiaries reported to have received assistances in minor heads of agricultural machinery. For those 17 beneficiaries who received assistance for other instruments (non-categorized), 6 said that they would have purchased the same instrument, even if they had not received the assistance, and rest 11 said they would not have purchased the instruments. The only beneficiary to have received assistance to purchase tractor, said that he would have bought the tractor even if he were not subsidized through RKVY.

Table 9-26 represents the agricultural mechanization situation for the non-beneficiaries of RKVY in Himachal Pradesh. According to the sample, only one of the non-beneficiaries reported to have received assistance for tractor, another one replied to have received financial assistance for trolley and seven of the non-beneficiaries received financial help for pump sets.

The total amount of their assistance received has also been mentioned in the table. In all the cases the credit was offered by bank.

9.1.1.18 SOIL TESTING:

RKVY emphasizes on strengthening the soil testing facilities in order to increase agricultural productivity.

Table deals with the response pattern of the beneficiaries and non-beneficiaries, when they were asked about soil testing of their land. Its 75 out of the marginal households from the beneficiaries reported that the soil of their land was tested. Similarly, all the small and medium farming household from the beneficiary category had the same response. Five out of the seven large beneficiary farmers confirmed to have undergone soil test. All those who underwent the soil test, got the soil health card and the test was done in government institutes.

Of the non-beneficiaries, only 11 out of the 24 marginal farmers had reported to have carried out soil testing. None of the small or large (no medium farmers, since there was none in the sample) had reported to have done soil testing of their land.

9.1.1.19 OTHER INFORMATION REGARDING RKVY:

Table 9-28 describes the response pattern of farmers' replies when they were asked about the trainings they received through RKVY. Higher size class farmers had responded to have shown more accessibility to these trainings. Marginal farmers' participation was very low (39% of them reported to joined training), whereas, 72%, 80% and 71% of the small, medium and large farmers accessed trainings respectively. Everybody, (who accessed training) reported to have undergone the training for one day. According to Table 9-29, all the respondents found these training useful and expressed their willingness to join such programmes, if more sessions conducted in future.

9.1.1.20 INFORMATION REGARDING RKVY:

This section collects information about the respondents' perception about accessibility of RKVY scheme. Expectedly, the beneficiaries found it more easily accessible than non-

beneficiaries. If we look further, within the beneficiaries, we can find that lower size class farmers having a better edge in accessing information.

9.1.1.21 FEEDBACK OF RKVY

The respondents were asked to express their opinion about RKVY's impact on employment generation, expansion in production, improved marketing facilities, price realization, financial assistance, infrastructure building, capacity building, post harvesting storage, procurement and any other factor of their choice. The responses have been shown in Table 9-31 and Table 9-32. As we can see here, that for financial assistance RKVY has been very widely lauded by all the beneficiaries. Besides, price realization and infrastructural capacity building role of RKVY was also found satisfactory by 55% and 53% of the beneficiary respondents.

9.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

In Himachal Pradesh, two projects were selected for the survey (Table 9-33). One project belongs to the category of construction, while other one focuses on community development and services. Under the construction related project, demonstration unit is being built. Requirement of the project was realized from the implementing agency at district level (Table 9-34). Table 9-35 shows fund flow of the project. 100% of the required fund was released in 2016-17.

Table 9-36 highlights the existing physical capacity that the project aims to improve and the contribution of the projects in achieving that. Different types of the structures have been created under this project. Tenders were called from different vendors for execution of the project (Table 9-37). Both technical and financial criteria were considered for evaluation of tenders. Though e-tendering was not followed, the respondent from the implementing agency opined that e-tendering improves the efficiency of the tendering process.

Extension/ training services are complementary/ supplementary projects in the opinion of the respondents. Logistical problems such as lack of skilled manpower, physical infrastructure etc. were cited as the major reasons for delay in the project (Table 9-38). No convergence with other projects was achieved (Table 9-39).

One community project was also carried on in Himachal Pradesh, naming Promotion of farm mechanization amongst hill farmers. In this project, farmer producer organizations were being promoted. It helps farmers directly through better inputs supply, higher production due to pooling resources, better access to credit, increased water use efficiency, and lower transaction cost of marketing (Table 9-40).

Table 9-41 shows fund flow in the project. Reduced amount is the major problem for the project (Table 9-42). Table 9-43 shows the benefits and challenges for the project. Respondents informed that about 10 thousands farmers were benefited from this project in 2016-17.

9.2 CONCLUSION:

Himachal Pradesh is characterized by lower land holding size and lesser penetration of mechanization in agriculture. Over the period of RKVY, net sown area, gross sown area and cropping intensity have deteriorated. Through RKVY, it had placed a demand for 53.1 crore rupees for 24 projects in 2016-17.

We conducted a survey for both beneficiaries and non-beneficiaries of RKVY in the State. It covered 15 households (760 individuals), of which, 120 households (627 individuals) were beneficiaries of RKVY, and 30 households (141 individuals) were non-beneficiaries. None of the households were landless farmers, and nor any household was found to represent the medium size class of land holding from the non-beneficiaries' category.

The proportion of beneficiaries, engaged in professions like salaried jobs was higher than the non-beneficiaries. Higher proportion of non-beneficiaries reported to work as agricultural labour or casual labour. The reported profit garnered by beneficiaries was higher than that of the non-beneficiaries. The growth in profit rate of the beneficiaries too were higher than that of the non-beneficiaries.

Expenditure growth rate for the beneficiaries was faster for the beneficiaries than the non-beneficiaries. Beneficiaries faced a hike in the land rent between 2015-16 and 2016-17. But in heads like rent on machinery, expenditure electricity for irrigation and expenditure for diesel, the beneficiaries' expenditure growth was much lesser than the non-beneficiaries'.

In terms of agricultural assets, beneficiaries were found to have possessing more assets than the non-beneficiaries. The livestock possession too was higher for the beneficiaries. Similar was the trend for consumer durables like TV, mobile phone, etc.

Though, dairy was among the priorities for Himachal Pradesh, both beneficiaries and non-beneficiaries showed enormous dependence on milk as the only source of dairy income. Diversification of dairy and related sources for income was hardly reported, however, the dependences of the beneficiaries were marginally less on milk as dairy related income source than the non-beneficiaries.

Agricultural and Floriculture departments were reportedly was the information source for most of the beneficiaries. None of the beneficiaries mentioned sources like TV, Radio or newspaper as source of their information on RKVY. Price realization and infrastructural capacity building role of RKVY was also found satisfactory by 55% and 53% of the beneficiary respondents.

Table 9-1: State Domestic Product from Agriculture (AGSDP) across States during pre-RKVY and post-RKVY periods (Unit: lakh rupees and percentage)

2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	Average of pre-RKVY (2004-05 to 2007-08)	Average of post-RKVY (2008-09 TO 2014-15) *	% Increase (from pre-RKVY to post-RKVY)
653,994	690,542	828,323	653,994	736,469	13
TREND Growth Rates of AGSDP in Himachal Pradesh during pre and post-RKVY periods (unit Percentage)					
2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	PRE-RKVY (2004-05 to 2007-08)	POST-RKVY (2008-09 TO 2014-15)	
4.19	2.18	8.76	4.19	5.27	
Value of Output: Agriculture and Allied Sectors (2004-05 prices)					
Average			Growth Rate		
Pre-RKVY	Post-RKVY	% increase	Pre-RKVY	Post-RKVY	
728,038	788,931	8.36	-1.31	12.90	

Source: Calculations done on data provided by Planning Commission

Table 9-2: Comparison of Land Use Statistics between Pre-and Post-RKVY period

	Net area Sown (thous and Hectar e)	% incre ase in Net area Sow n	Total Cropp ed Area (thous and Hectar e)	% incre ase	Gross irrigat ed area (thous and Hectar e)	% incre ase in Gros s irriga ted area	Net Irrigat ed area (thous and Hectar e)	% incre ase in Net Irriga ted area	Croppi ng Intensi ties	% increa ses in Croppi ng Intensi ties	% incre ase in Irriga ted to Crop ped Area
Pre-RK VY	544.4		949.9		184.7		109.7		174.5		19.4
Post - RK VY	543	-0.26	942.4	-0.78	195.5	5.84	110.2	0.50	173.6	-0.53	20.7

Source: Land Use Statistics, Directorate of Economics and Statistics¹⁶

16 Source: Url: http://eands.dacnet.nic.in/LUS_1999_2004.htm, accessed on March 2017

Figure 9-1: Yearly Allocation Release and Expenditure of RKVY fund by Himachal Pradesh

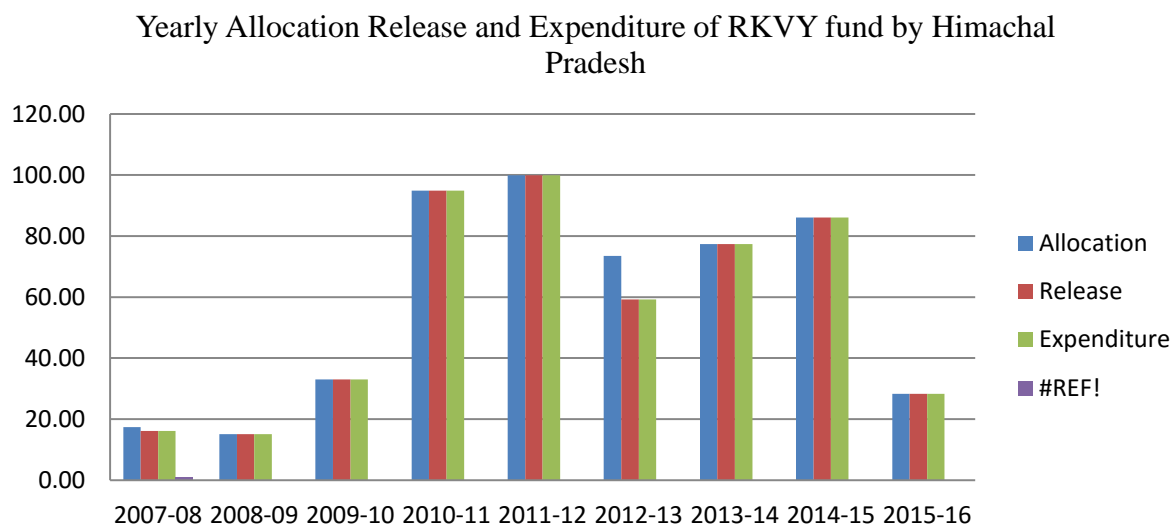


Table 9-3: Distribution of Number of Projects and Their Cost Share

Sector	Number of projects					Total		Sector-wise Share (%)		
	<1 crore	1-5 crore	5-10 crore	10-25 crore	>25 crore	Cost (Rs. Crore)	Number	Avg cost	(%) cost	No of projects
Total Crop Development	1	0	1	0	0	6.6	2	3.3	100.0	100.0
Total(Fisheries)	2	0	0	0	0	1.5	2	0.8	100.0	100.0
Total(Innovative Programmes/ Training/ Capacity Building/ Others)	1	1	0	0	0	3.6	2	1.8	100.0	100.0
Micro/Minor Irrigation										
Percolation Tanks/ Minor Irrigation Tanks	0	0	0	1	0	10.4	1	10.4	100.0	100.0
Total(Micro/Minor Irrigation)	0	0	0	1	0	10.4	1	10.4	100.0	100.0

Source: RKVY Division, Ministry of Agriculture and Farmers Welfare, GoI, New Delhi

Table 9-4: Break-Up of Sample according to Beneficiary and Non-Beneficiaries and Land Holding Size

	B ¹⁷	N	Total
LL ¹⁸	—	—	--
ML	90	24	114
SL	18	2	20
MD	5		5
LA	7	4	11
Total	120	30	150

Note: Landless = 0 acres; Marginal = 0-2.5 acres; small = 2.5-5; medium 5-10; large= more than 10

Table 9-5: Sample Size in detail: Beneficiary wise and Size Class Wise

	% of each size class beneficiary wise				% of each size class		
	B	NB	Total		B	NB	Total
LL	0	0	0		---	---	---
ML	75	80	76		79	21	100
SL	15	7	13		90	10	100
MD	4	0	3		100	0	100
LA	6	13	8		64	36	100
Total	100	100	100		80	20	100

Table 9-6: Average Size of Land Holding (in Hectare)

Overall 2016-17	B					NB				
	LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
Owned land	0	0.95	1.58	3.60	5.83	0.0	0.65	1.75	0.0	0.5
Leased-in Land / share cropping	0	0.43	0.00	0.00	0.00	0.0	0.20	0.00	0.0	0.5
Leased-out Land / share cropping	0	0.52	1.58	3.60	5.83	0.0	0.43	1.75	0.0	0.5
Total operated area (owned+LI-LO)	0	1.18	1.58	3.60	5.83	0.0	0.43	1.75	0.0	0

17 B and NB are the abbreviations used for Beneficiaries and Non-Beneficiaries, respectively, in the tables

18 LL, ML, SL, MD, LA are abbreviations for Large, Marginal, Small, Medium and Large size class Farmers

Table 9-7: Pattern of Irrigation

			Beneficiary					Non-beneficiaries				
			LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
Irrigated Area by canal			---	25	0	0	0	---	0	0	---	---
Irrigated Area by tube well	Rented	Electric	---	28	34	32	0	---	0	40	---	---
		Diesel	---	0	0	0	0	---	0	0	---	---
	Owned	Electric	---	24	41	68	100	---	100	60	---	---
		Diesel	---	0	25	0	0	---	0	0	---	---
Total			---	100	100	100	100	---	100	100	---	---

Table 9-8: Income Source-Wise Distribution of the Surveyed Households

Source	Number of Households		% of the Households	
	B	NB	B	NB
Farming	98	19	100	100
Floriculture	1	1	1	5
Dairy	41	10	42	53
Agricultural Labour	0	4	0	21
Casual Labour	7	10	7	53
Salary	56	12	57	63
Other	54	11	55	58

Table 9-9: Comparison between Profit Levels of Beneficiaries and Non-Beneficiaries between 2015-16 and 2016-17

	Profit in 2016-17		Profit in 2015-16	
	Beneficiaries	Non-beneficiaries	Beneficiaries	Non-beneficiaries
Farming	111,953	74,383	132,048	62,157
Horticulture			140,000	
Floriculture			30,583	
Dairy	29,200	14,745		11,364
Agricultural Labour	45,000			
Casual Labour	63,200			
Salary	195,000			
Other	30,833	44,673	63,816	41,832

Table 9-10: Percentage Increase In Income between the Beneficiaries and Non-Beneficiaries over 2015-16 to 2016-17

	Beneficiary			Non-beneficiary		
Source	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	19	14	23	16	11	18
Floriculture	5	7	4			
Dairy	8	17	0	20	11	30
Agricultural Labour	---			-3		
Casual Labour	5	---	---	24		
Salary	5	---	---	9		

Table 9-11: Average Annual Expenditure on Agriculture (Unit Rupees)

	2016-17		2015-16	
Items	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	3,000	3,000	2,533	3,000
Total rent on machinery (tractor, harvester etc)	9,183	5,527	8,869	4,826
Expenditure on purchased water for irrigation	5,127	4500	4,391	4000
Expenditure on electricity for irrigation	7,443	4,733	6,776	4,200
Expenditure on diesel	13,972	9,180	12,972	7,880
Expenditure on other fuels for agriculture	15,000	0	10,000	0
Any other	85,651	31,096	69,578	28,445
Total expenditure on agriculture	139,378	58,037	115,119	52,351

Table 9-12: Percentage increase in average expenditure 2016-17 over 2015-16

<i>items</i>	Beneficiary	non-beneficiary
Rent on leased-in land	18	0
Total rent on machinery (tractor, harvester, etc.)	4	15
Expenditure on purchased water for irrigation	17	13
Expenditure on electricity for irrigation	10	13
Expenditure on diesel	8	16
Expenditure on other fuels for agriculture	50	22
Any other	23	9
Total expenditure on agriculture	21	11

Table 9-13: Profile of the Sample in Himachal Pradesh

		Beneficiary	Non-Beneficiary	Total
Total Sample Population		627	141	768
% off dependent members		---	---	---
Age group	<=15	20	22	21
	>15 to 25	17	18	17
	>25 to 40	16	26	26
	>40 to 59	25	22	24
	>59	12	12	12
	All Groups	100	100	100
Education	Illiterate	9	14	10
	Class 1 to 5	15	18	16
	Above Class 5 to 8	17	14	16
	Above Class 8 to 12	43	41	43
	Above Class 12	12	6	11
	Other diploma	2	4	3
	can read and write	0	0	0
	can read only	0	1	0
	can count only	0	0	0
	could not attend class 1	2	1	2
	All Groups	100	100	100

Occupation	Cultivation	16	11	15
	Agricultural labour	1	4	1
	Dairy	1	0	1
	Casual labour	7	9	7
	Self-Employment	12	6	11
	Salaried Employment	13	9	2
	Student	26	21	25
	Housewife	28	26	27
	Non-working	6	11	7
	Others	4	4	4
	All Groups	100	100	100

Table 9-14: Asset Distribution In Terms Of Value across Beneficiaries and Non-Beneficiaries (Unit: Rupees)

Beneficiary					Non-Beneficiary				
LL ¹⁹	ML	SL	MD	LA	LL	ML	SL	MD	LA
0	18,169	22,758	133,642	98,510	0	5,218	8335	-	65435

Table 9-15: Asset Distribution (Possession of Major Agricultural Machines (in numbers))

	Assets	Beneficiary					Non-Beneficiary				
		LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
1	Tractor		4	11	40	29		13	50	0	0
2	Trolley		2	6	20	14		8	50	0	0
3	Manual / Power Sprayers		20	39	40	29		29	50	0	0
4	Electrical Pump sets		11	39	60	29		8	50	0	0
5	Sprinkler sets / Drip Irrigation Equipments		9	6	20	0		4	0	0	0
6	Fodder Choppers		28	39	40	14		29	0	0	0

19 LL, ML, SL, MD& LA are the abbreviations for Landless farmers, SL farmers, MD farmers and LA farmers respectively. These abbreviations are used only for tables.

Table 9-16: Number of livestock and their distribution over size class

	Assets	Beneficiary					Non-Beneficiary				
		LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
1	Cow		61	83	80	43		42	100	0	0
2	Buffalo		36	44	20	86		42	100	0	5
3	Young Stock		66	83	80	100		67	50	0	0
4	Male Draught		10	22	0	0		4	0	0	0
5	Goat		20	6	0	43		13	0	0	0
6	Poultry		4	0	0	14		0	0	0	0

Table 9-17: Type of Houses

Type	Beneficiary	Non-beneficiary	Total
Kachha	20	37	23
Pucca	65	40	60
Semi-Pucca	15	23	17
Others	0	0	0
Total	100	100	100

Table 9-18: Percentage of Households Possessing other Assets

	Beneficiary	Non-Beneficiary
TV	98	80
Telephone	3	0
Mobile Phone	100	97
Cycle	12	23
Two wheeler	51	40
Four wheeler	18	7
Refrigerator	69	50

Table 9-19: Growth of various indicators of beneficiaries over non-beneficiaries in 2016-17

		Cultivated Area	Irrigated Area	Production	Marketed Quantity	Price received	Total paid-out costs	Profitability
1	Wheat	98	253	91	187	95	76	-40
2	Maize	109	460	53	57	14	55	234
3	Vegetable 1	-2	177	145	145	-13	62	164
4	Vegetable 2	2	108	-10	-10	27	25	6

Table 9-20: Percentage Difference between beneficiaries and non-beneficiaries for 2016-17

	% CHANGE in 2016-17									
Crop	Over Non-beneficiary					Over 2015-16				
	LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
paddy	--	--	--	--	--	--	--	5.88	4.17	--
wheat	--	120.12	-12.05	--	--	--	-5.76	2.51	-6.06	0.00
vegetable 1	--	-14.08	--	--	--	--	10.79	10.40	14.29	-6.67
vegetable 2	--	22.79	--	--	--	--	8.79	6.74	7.32	-8.57
vegetable 3	--	--	--	--	--	--	8.93	6.37	9.80	--

Table 9-21: Earning from Animal husbandry

		2016-17			
		Beneficiary		Non-Beneficiary	
Items		% of Total Income	Average income	% of Total Income	Average income
Milk		93	59,926.8	97	27,909.1
Milk Products	Ghee	4	100,000.0	0	
Eggs		1		0	
Animal sale		1	5000.0	3	8,000.0
TOTAL		100	21,929.2	100	10,500.0

Table 9-22: Comparison of income from Dairy between Beneficiaries and Non-Beneficiaries

		Beneficiaries	over	Non-	2016-17 Income Over 2015-16	
Items		2016-17	2015-16	Ben	Non-Ben	
Milk		115	132	6	15	
Animal sale		-38	-39	38	33	
TOTAL		109	126	6	15	

Table 9-23: Percentage Distribution of people with Awareness about RKVY

	Beneficiary	Non-Beneficiary
Have you heard about Rashtriya Krishi Vikas Yojana?	100	57
Benefits in 2016-17	100	0
Benefits in last 5 years	28	3
Benefits from any other government scheme in 2016-17	38	30
Benefits from any other government scheme in last 5 years	67	47

Table 9-24: Percentage Distribution of Source of Awareness

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	18	89	28
Newspaper	0	0	0
Agriculture / Horticulture Department	54	6	48
SAU	0	0	0
KVK	0	0	0
Input Suppliers	0	0	0
TV/ Radio	0	0	0
Agricultural Exhibitions	0	0	0
ZP/GP	28	6	25
Total	100	100	100

Table 9-25: Intervention regarding Agricultural mechanization (for beneficiaries)

		Tiller	Others
No. of beneficiaries of RKVY		1	17
Total Cost (Rs.)		80,000	3,126,095
Amount financed by loan (Rs.)		50,000	
Source of Credit			
	Bank	1	
Subsidy amount from RKVY (Rs.)		30,000	967,000
Mode of Subsidy Transfer:			
	DBT	1	17
If DBT, Number of days taken to receive subsidy?		300	840
1	Solved labour problem		6
2	Enabled timely operations	1	7
3	Saved water		
4	Helped in controlling weed		1
5	Helped in good plant growth		3
6	Reduced Drudgery		5
7	Helped in transportation		2
8	Reduced cost of Cultivation		12
9	Increased cropping intensity		1
10	Not useful		
Subsidy received from any other scheme			1
Subsidy not received from any other scheme		1	16
If subsidy not received, number of households who have said who would buy this implement			6
If subsidy not received, number of households who have said who would not buy this implement			11

Table 9-26: Effect of Intervention on non-beneficiaries of RKVY

		Tractor/ mini tractor	Trolley	Pump set
No. of non-beneficiary of RKVY in the sample		1	1	7
Total Cost (Rs.)		560,000	90,000	196,500
Amount financed by loan (Rs.)		480,000	75,000	84,000
Source of Credit				
	Bank	1	1	1
	Money lender			2
	Other			3
If subsidy not received, number of households who have said who would buy this implement				2

Table 9-27: Soil Testing

Land size	Whether soil is tested in your area?	Soil health card issued? (who tested soil)	Soil health card issued? (Overall)	Place of soil test		
				Got. Institute	Private organization	Don't know
Beneficiary						
ML	75	75		75		
SL	18	18		18		
MD	5	5		5		
LA	7	7		7		
Total	120	120		120		
Non-beneficiary						
ML	11	11		11		
SL	0	0		0		
MD	-	-		-		
LA	0	0		0		
Total	30	30		30		

Table 9-28: Other Information regarding RKVY

Land size	Training					
	Percentage	Undergone Training	Average no. of days of training	Type of training		
				Demonstration	Field Visit	Krishi Mela
LL						
ML	75	39	1	60	37	3
SL	15	72	1	46	54	0
MD	4	80	1	75	25	0
LA	6	71	1	40	60	0
Total	100	100	1	56	42	2

Table 9-29: Respondents' evaluation of Training Programmes

	No. of households found training beneficial	No. of households want more training?
LL	—	--
ML	100	100
SL	100	100
MD	100	100
LA	100	100
Total	100	100

Table 9-30: Constrains faced in availing RKVY benefit

	% of beneficiaries					% of non-beneficiaries				
	LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
Information about RKVY programme details not easily available	0	22	21	28	28	0	10	45	28	17
Contact details of the department which pay subsidy not available	0	16	23	30	31	0	16	42	26	16
Eligibility or criteria for availing the subsidy not known	0	18	20	33	28	0	15	50	25	10
Procedure for the subsidy very tedious	0	24	21	26	29	0	22	43	30	4
No of documents required for availing subsidy are too many	0	18	27	26	29	0	26	35	26	13
Subsidy paid after purchase while initial payment remains the highest problem	0	18	24	33	24	0	18	43	28	13
Delay in transfer	0	21	21	33	24	0	15	45	27	12
Prescribed machinery/asset not easily available in the market	0	21	26	24	29	0	5	60	25	10
Institutional financing facility not available	0	16	30	32	22	0	17	46	21	17
Capacity building/technical advice not provided	0	24	22	30	24	0	11	37	42	11
Long time gap between the purchase and receiving the subsidy amount	0	22	24	33	21	0	7	39	36	18
Biased towards large land owners	0	24	21	24	30	0	12	44	28	16
Poor quality of materials/machinery are supplied	0	20	30	25	25	0	27	27	40	7
Implementing agencies are located far away	0	14	32	30	25	0	14	50	23	14
Incidence of bribery	0	22	19	31	28	0	17	39	28	17
Lack of monitoring	0	21	25	29	25	0	18	41	29	12
Complementary inputs not available	0	18	24	33	25	0	10	48	28	14
Restricted Choice	0	21	24	32	23	0	14	43	32	11
Lack of marketing support	0	21	26	35	18	0	17	43	26	14

Table 9-31: Response of the Beneficiaries regarding RKVY

		Good	Poor
Employment generation			
1	Landless	--	0
2	Marginal	63	43
3	Small	67	6
4	Medium	60	2
5	Large	80	3
	Total	55	54
No. Beneficiaries' opinion regarding RKVY			
1	Landless	--	0
2	Marginal	67	40
3	Small	67	6
4	Medium	60	2
5	Large	120	1
	Total	59	49
Better Price realization			
1	Landless	--	0
2	Marginal	69	38
3	Small	61	7
4	Medium	40	3
5	Large	20	6
	Total	55	54
Financial Assistance			
1	Landless	--	0
2	Marginal	100	7
3	Small	100	0
4	Medium	100	0
5	Large	100	0
	Total	100	7
Building Infrastructure			
1	Landless	--	0
2	Marginal	60	45
3	Small	67	6
4	Medium	20	4
5	Large	120	1
	Total	53	56

Table 9-32: Response of the Beneficiaries regarding RKVY

		Good	Poor
Capacity Building			
1	Landless	--	0
2	Marginal	40	60
3	Small	44	10
4	Medium	20	4
5	Large	100	2
	Total	37	76
Post harvesting storage			
1	Landless	--	0
2	Marginal	16	78
3	Small	11	16
4	Medium	0	5
5	Large	0	7
	Total	12	96
Procurement			
1	Landless	--	0
2	Marginal	28	69
3	Small	28	13
4	Medium	60	2
5	Large	60	4
	Total	27	88

Table 9-33: Details of projects

Sl. No.	Project Name	Implementing agency
01	Development of progeny orchard , floriculture Centre, nurseries, bee keeping stations, Mushroom units and processing units	Deptt of Directorate of Horticulture HP Shimla
02	Promotion of farm mechanization amongst hill farmers	Directorate of Agriculture , Shimla

Table 9-34: General Information regarding the implementing agency

Issues\ Projects	Development of progeny orchard , floriculture Centre, nurseries, bee keeping stations, Mushroom units and processing units
Type of construction	Demonstration unit
New construction/Improvement of an older construction	Both
Awareness about DAP	Yes
Included in DAP	Yes
Project proposed by	Implementing Agency
Level at which the project was proposed	District

Table 9-35: Fund Flow in the project

Issues\ Projects	Development of progeny orchard , floriculture Centre, nurseries, bee keeping stations, Mushroom units and processing units
Funds required for the project in 2016-17	Rs.1320.6 Lakh
Funds approved for the project in 2016-17	Rs.1023.04 lakh
Funds released for the project in 2016-17	Rs.1023.04 lakh
Number of times funding released for the project in 2016-17	3
Major problems in the release of funds	Delayed release

Table 9-36: Physical Capacity of the projects

Issues\ Projects	Development of progeny orchard , floriculture Centre, nurseries, bee keeping stations, Mushroom units and processing units.
Required physical capacity of the selected work. (in numbers)	Since different types of the structures have been created under this project, hence capacity.can't be given
Existing physical capacity excluding the current project.	Since different types of the structures have been created as floriculture centres , beekeeping stations and processing units but exact capacity under different components cannot be supplied at present and will require some time.
Capacity of current project. (numbers)	1. Progeny Orchards-28 Nos. 2. Floriculture Centres-3Nos. 3. Mushroom units-3Nos. 4. Processing units-4 Nos. 5. Beekeeping stations-5Nos.

Table 9-37: Tendering & Maintenance regarding the project

Issues\ Projects	Development of progeny orchard , floriculture Centre, nurseries, bee keeping stations, Mushroom units and processing units
Whether tender was called for execution of the work	Yes
e-tender issued	No
Opinion: e-tendering increases efficiency of tendering	Yes
Opinion: e-tendering increases transparency	Yes
Opinion: e-tendering has increased number and quality of responses from vendors	Yes
Number of days given to respond to tenders	21
Number of vendors responded to the tenders	7
Method for evaluating the tenders	Technical criteria and financial criteria....
Any re-bidding made	No
Reasons for re-bidding	
Selected vendor a Government / Private Organization	Private
Whether selected vendor worked with the agency before	Yes
Agency responsible for the maintenance of the constructed project in future years	Your own agency
If same agency, whether any financial provision is there in the project for maintenance in future	No

Table 9-38: Benefits and Challenges regarding the projects

Issues\ Projects	Development of progeny orchard , floriculture Centre, nurseries, bee keeping stations, Mushroom units and processing units
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries	Extension/ Training services
Project needs enhancement / improvement	Yes
Opinion: the project will complete in stipulated time	Yes
Reasons for delay in project	Logistical problems (lack of skilled manpower, physical infrastructure etc)
Whether infrastructure is geo-tagged?	Yes

Table 9-39: Convergence with other projects

Issues\ Projects	Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy	Strengthening of Veterinary Institutions	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner
Whether any convergence with other schemes	No	No	No

Table 9-40: General Information regarding the implementing agency

Issues	Promotion of farm mechanization amongst hill farmers
What is the type of collective activity is undertaken in the project?	FPOs
What is nature of benefits expected from the project?	Better Inputs Supply, Higher production due to collectivization, Better access to credit, Water use efficiency, Lower transaction cost of marketing
At what level, was the project was proposed?	No Response

Table 9-41: Fund flow

		Promotion of farm mechanization amongst hill farmers
Funds required for the project in 2016-17		No Response
Funds approved for the project in 2016-17		No Response
Funds released for the project in 2016-17		No Response
How many times the funding was released for this project in 2016-17?		1
What are the major problems related to release of the funding?		Reduces Amounts
How many phases are needed?		Two
If there are multiple phases, how the project is designed to fulfil the physical target?	Ph1	Yes
	Ph	Yes
	Ph3	Yes
	Ph4	Yes

Table 9-42: Benefits and challenges

		Promotion of farm mechanization amongst hill farmers
How many farmers are expected to get benefit from the activity?	1. 2017-18	About 9350 (during 2016-17)
Is the collectivization effective?		No
If not, what are the reasons?		No
Is there any convergence with other schemes?		No
If yes, then what is the scheme?		No

10 JHARKHAND

Jharkhand is a state in Eastern India with the geographic area of 79.71 lakh square kilometres (Jharkhand Economic Survey 2016-17). It came into existence in 2000, sliced out of southern part of Bihar. This state is rich in mineral wealth, mostly coal, copper and iron ore. Agriculture is a major source of livelihood in this state, where more than 70% of the people live in rural areas and where around 37% of the people are below poverty line. Net sown area is 25.75 lakh hectares in the state, which is 28.08% of the total geographical area. Share of agriculture and allied sector in GSDP is 13.1% in 2015-16, which consists of crop production (8.2%), livestock (2.4%), forestry and logging (1.9%) and fishing (0.3%). During the period 2011-12 to 2015-16, agriculture and allied sectors grew at a compound annual rate (CAGR) of 5.23%. The crop production in Jharkhand is mainly rainfed; only 3.007 lakh hectare of the total cultivable area of 38 lakh hectare is irrigated. For this reason, agricultural production fluctuates from year to year, depending on the weather condition in the state. Major agricultural products in Jharkhand include rice, sugarcane, pulses, coarse cereals, oilseeds etc.

RKVY was started in 2007-08 in Jharkhand. From that year to 2014-15, the central government has provided 100% funding to the selected agro-based projects to improve the agriculture situation in Jharkhand. In 2015-16, the assistance has been reduced to 60:40% for Centre and state. Under this scheme, the central government has allocated Rs. 82.65 Crore for Jharkhand in 2016-17, while state share for the same year is Rs. 55.10 Crore. In Jharkhand, in 2015-16, 12 projects with cost of Rs. 123 Crores were proposed. Data on project-wise distribution of proposed cost is not available for 2016-17. For the year 2015-16, crop development is given highest priority both in terms of cost and in terms of number of projects, though project of highest average cost was proposed for cooperatives and cooperation. Figure 4-1 shows allocation, release and expenditure in RKVY in Jharkhand over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Jharkhand. Out of 21 projects undertaken under RKVY in Jharkhand, we have selected 10% of the projects i.e. 3 projects for Jharkhand and analysed the performance of RKVY by collecting primary information. List of selected projects for Jharkhand is given below (Table 10-1).

10.1 RESULTS FROM PRIMARY SURVEY

10.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Jharkhand, total 100 households are considered for the survey, among which 80 households are the beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed. The distribution of farmers across different land size is shown in Table 10-2.

In our sample (Table 3- 10-3), the majority of the beneficiary households (79% of beneficiary households) are marginal farmers, 19% are small farmers, and 3% belong to medium category farmers (Table 4-3). In the non-beneficiary households, 65% are marginal, 15% are small and 5% are medium farmers. Land holdings and average land size of sample household

In our sample, for kharif 2016-17, the average area of owned land is higher for medium and large categories (not considering landless) among the non-beneficiary households as compared to beneficiary households, while the opposite situation prevails for marginal farmers. Some of the beneficiary households possess leased-in land also while this is not present among non-beneficiaries.

We have collected separate data for land-holding and irrigation for kharif and rabi season (Table 10-4 to 10-7). For rabi 2016-17 also, the average area of owned land is higher for all categories (not considering landless) among the non-beneficiary households as compared to beneficiary households.

The cultivation in kharif season is mainly done through tube well, especially owned electric tube well. Some marginal farmers in the beneficiary category and some small farmers in non-

beneficiary category depend on rented diesel tube well for irrigation. Cultivated area is more in kharif season than in rabi season, for almost all categories of farmers. Irrigation in rabi season is also mainly done by owned tube well.

In our sample, a total of 80 households are beneficiaries and 20 are non-beneficiaries. A total number of the population covered is 590, among them, 483 people belong to beneficiary households and 107 people belong to non-beneficiary households. Among them in beneficiary households, 35% of the population is below 15 age group, while 7 percent are in above 60 age group (Table 10-8). Rest 58% population in beneficiary households is in working-age-group. In non-beneficiary households, 27% of the population is below 15 age-groups, while 9 percent are in above 60 age group. Rest 64% population in beneficiary households is in working-age-group. Taking both the groups into consideration, 59% population is in working-age group. The study shows that 19% of the population in beneficiary group and 22% of non-beneficiary group is illiterate. 72% population in beneficiary households and 68% population in non-beneficiary households have attended school (class 1 to 12); while 7% population in both the groups have studied beyond school. Major occupation is cultivation, while casual labour is a major occupation for beneficiary households. A major part of the population belongs to the category of 'student' or 'housewife' or 'non-working' (Table 10-9).

10.1.1.1 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

Households in our sample for the state generate income from farming, dairy, agriculture labour, casual labour and salary. Average income of the non-beneficiary households is higher as compared to beneficiaries for households who are engaged in farming (Table 10-10). Average income from dairy is also higher for non-beneficiary households. Average income from agriculture labour and casual labour is higher for beneficiary households. This is due to the sample contains poorer households in beneficiary groups. This is also evident from distribution of different size across land-holding categories.

In the sample of our study, 42% of the beneficiary households have reported income from farming. For non-beneficiary households, 44% of households have reported farming as an occupation. Percentage of households, who have reported income from agriculture labour or casual labour as occupation, is almost similar for beneficiary and non-beneficiary households.

8% of beneficiary households have reported income from dairy; while for non-beneficiary households, 10% reported income from them (Table 10-10).

Average annual income of the sample beneficiary households in aggregate is Rs. 63819 in Jharkhand while the same for non-beneficiary households is Rs. 77410 in 2016-17 (Table 3-). Average annual income for beneficiary households was Rs. 54716 in 2015-16 while it was Rs. 65308 for non-beneficiary households in the same year (Table 10-11). Major sources of income are farming, dairy, agriculture labour work, casual labour work apart from salary. For farming, the average income of non-beneficiary households is higher than beneficiaries; so is the average cost. For dairy, non-beneficiary households have to incur more cost. Average income from agriculture labour work, casual labour work is higher for beneficiary households, probably because of more dependence on these sources of income.

Table 10-12 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, the average income of beneficiary households is Rs. 50618 which is lower than non-beneficiaries (Rs. 63118); so is the average cost (Rs. 24075 and Rs. 28941 respectively). For dairy, average income and cost both are higher for non-beneficiary households.

In terms of percentage change in income (Table 10-13), average income has increased by 19% in farming for beneficiary households. However, the average cost has also increased by 19% for beneficiary households in farming. There is an increase in both income and cost in dairy for beneficiary households in Jharkhand.

10.1.1.2 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 10-14 Table 3-provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. It is evident from the table that the rent on leased-inland is the major factor of the annual expenditure if it is needed. Apart from that major part of the cost of the households consists of expenditure as rent on agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation and expenditure on diesel. The component-wise analysis shows that rent average expenditure in majority of the categories are higher for non-beneficiaries than beneficiaries.

The study shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in expenditure on purchased water for irrigation, expenditure on electricity for irrigation, rent on machinery (tractor, harvester etc.) for both beneficiary and non-beneficiary households over this year.

Project-wise data for average expenditure on agriculture by households is provided in Table 10-15 to Table 10-17.

10.1.1.3 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Jharkhand, for beneficiary households, landless, marginal and small farmers own significant amount of agricultural implements like tractor, trolley, manual/power sprayers, electrical pump set, diesel pump set, sprinkler set, fodder chopper, bullock cart etc.(Table 10-18).

Comparison of the beneficiary and non-beneficiary households shows that landless farmers from beneficiary households have more ownership of implements as compared to landless non-beneficiary households in our sample. Ownership of assets is skewed in favor of marginal and medium scale farmers for non-beneficiary households (Table 10-19).

Marginal and small farmers from both beneficiary and non-beneficiary households have a significant proportion of ownership of livestock (Table 10-20). Medium and large farmers in both the categories have less livestock.

In our sample, 24-25% of the households for both beneficiary and non-beneficiary groups have kaccha houses (Table 10-22). It is also observed that 40% of the households have pucca houses for non-beneficiary households, while only 34% beneficiaries have pucca houses. This may reflect the fact that RKVY beneficiaries mainly belonged to the poorer classes.

It is observed from our sample that 64% of beneficiary households possess TV; while for non-beneficiaries, it is higher (70%) (Table 10-23). In the case of mobile phones 99% of beneficiary households have reported to possess it, while for non-beneficiaries, it is 95%. Beneficiary households also have more bicycles, two-wheelers, but non-beneficiary households have more

four-wheelers and refrigerator. This reinforces the fact that RKVY beneficiaries mainly belonged to the poorer classes.

10.1.1.4 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, bajra, maize, tur, gram, moong, urad, mustard, vegetables etc. in the majority of the cultivated area (Table 10-24). But for non-beneficiary households, the emphasis is on only paddy, wheat, maize and vegetables (Table 10-25). But, average production of paddy, wheat and maize is much higher for non-beneficiary as compared to non-beneficiary households. Price of the marketed quantity is more for paddy in the beneficiary household vis-à-vis non-beneficiary households. For wheat and maize, non-beneficiary households are getting better price.

A closer look reveals that while the production of paddy is 29% higher for non-beneficiaries, while the paid-out cost also higher for non-beneficiary households (Table 10-26). But the price received by beneficiary households is higher. As a result, the profitability of paddy is 305% higher for paddy for beneficiaries. A similar pattern of cultivated area and production is seen for wheat and maize. The only difference for wheat and maize is lesser price received by the beneficiary households.

Disaggregated analysis shows that there is a difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 10-27). For the majority of the crops, marginal farmers are getting a lesser price. This is evident from the Table 3- and

Table 3-which show that less price is obtained by the marginal farmers for crops like paddy, wheat, maize, urad etc. (for beneficiary households); and paddy, wheat, maize (for non-beneficiary households). In a comparison of the beneficiary and non-beneficiary marginal farmers, it can be said the average price received by the former is higher for paddy, wheat, maize, gram, urad, etc. Efforts are needed for marketing and procurement of the production.

10.1.1.5 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Jharkhand, it is seen that average income from livestock is much lower for beneficiary households as compared to non-beneficiary households, for both the years 2015-16 and 2016-17. Households who have livestock, earn from livestock, mainly through milk and animal sale (Table 10-29).

Inter-temporal comparison (Table 10-30) shows that average income from the production of milk is higher for non-beneficiaries in 2016-17. It can be observed from our sample that income from milk has reduced in 2016-17 as compared to 2015-16 for both beneficiaries and non-beneficiaries. The situation is opposite for animal sale.

Regarding the awareness of RKVY, it is found that in our sample, 60% of the non-beneficiary households mostly are not aware of RKVY (Table 10-31). 63% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 5% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 59% of the beneficiary households and 35% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17. This can be easily observed from the

Table 3- that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness appears to be the basic requirement for the success of government schemes, including RKVY. In our sample in Jharkhand, the majority of beneficiary households had received information regarding RKVY from friends and neighbours and Agriculture/Horticulture Department (Table 10-32).

10.1.1.6 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

RKVY has contributed in crop development in Jharkhand. It is found that crop seeds are made available through RKVY (Table 10-33). Among the beneficiaries, 79% are marginal farmers, 19% are small farmers, 3% are medium farmers for one crop and 50% are small farmers, 50% are medium farmers for another crop.

In Jharkhand, 76% of the farmers among beneficiaries of RKVY programme have reported that the soil has been tested to know the nature of the soil (Table 10-34). Among them, only 33% of the households are provided with soil health card. The tests have been done in government institutes for all the cases.

10.1.1.7 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that majority of beneficiary households have faced problems as: Eligibility or criteria for availing the subsidy not known, subsidy paid after purchase, institutional financing facility not available, biased towards large land owners, incidence of bribery and restricted choice (Table 10-35). The problems are more or less similar for marginal and small farmers. Apart from these, non-beneficiary households face the problem in payment of subsidy after purchase while initial payment remains the highest problem (Table 10-36).

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in building infrastructure, providing financial assistance, increasing production, better price realization and procurement (Table 10-37 and Table 10-38). However, it appears that RKVY has not been very successful in generating employment and capacity building.

10.1.2 IMPLEMENTING AGENCY

In Jharkhand, one project related to the category of 'I & A' is chosen for the purpose of the study (Table 10-39). The chosen project falls under the category of construction. Demand for this project came from the gram panchayat level, as is appeared from the representative of its implementing agency (Table 10-40). It also appears that the project is mentioned in the DAP. Delayed in release in allocated amount was observed as the major problem in implementation of the project (Table 10-41). Table 10-42 highlights the required physical capacity of the factors that the project aims to improve and the contribution of the projects in achieving that. Provisions for fund was provided by RKVY in phased manner.

For executing works associated to this project, vendor is selected through tendering process. Tenders submitted from each vendor were evaluated by following both technical and financial criteria (Table 10-43). It is reported by implementing agency that about 1000 farmers were benefited from this project in year 2016-17. Respondents further informed that the above number of beneficiary farmers is expected to increase by 10 times in next two years. Beside farmers, cooperatives, self-help groups and farmer producer organization could also get benefited from this project.

Complementary/ supplementary projects for the ongoing projects could be warehouse, marketing sheds, cold-storage, seed-bank, training Centre, rural roads, extension / training services, developing co-operatives, rural electrification, stable power supply, and government procurement centre (Table 10-44). There is no convergence of the project with other schemes.

10.2 CONCLUSION

RKVY was started in 2007-08 in Jharkhand. Under this scheme, the central government has allocated Rs. 82.65 Crore for Jharkhand in 2016-17, while state share for the same year is Rs. 55.10 Crore. In Jharkhand, in 2015-16, 12 projects with cost of Rs. 123 Crores were proposed. For the year 2015-16, crop development is given highest priority both in terms of cost and in terms of number of projects, though project of highest average cost was proposed for cooperatives and cooperation.

This study analyses performance of RKVY for the year 2016-17 in Jharkhand. Out of 21 projects undertaken under RKVY in Jharkhand, we have selected 10% of the projects i.e. 3 projects for Jharkhand and analysed the performance of RKVY by collecting primary information. In our sample in Jharkhand, total 100 households are considered for the survey, among which 80 households are the beneficiaries of RKVY and 20 are non-beneficiaries. In our sample, the majority of the beneficiary households (79% of beneficiary households) are marginal farmers, 19% are small farmers and 3% belong to medium category farmers. In the non-beneficiary households, 65% are marginal, 15% are small and 5% are medium farmers. In our sample, for kharif 2016-17, the average area of owned land is higher for medium and large categories (not considering landless) among the non-beneficiary households as compared to beneficiary households, while the opposite situation prevails for marginal farmers. The cultivation in kharif season is mainly done through tube well, especially owned electric tube well. Some marginal farmers in the beneficiary category and some small farmers in non-beneficiary category depend on rented diesel tube well for irrigation. Cultivated area is more for kharif season as compared to rabi season, for almost all categories of farmers. Irrigation in rabi season is also mainly done by owned tube well. In our sample, a total of 80 households are beneficiaries and 20 are non-beneficiaries. A total number of the population covered is 590, among them, 483 people belong to beneficiary households and 107 people belong to non-beneficiary households. Among them in beneficiary households, 35% of the population is below 15 age group, while 7 percent are in above 60 age group. Rest 58% population in beneficiary households is in working-age-group. In non-beneficiary households, 27% of the population is below 15 age-groups, while 9 percent are in above 60 age group. Rest 64% population in beneficiary households is in working-age-group. Taking both the groups into consideration, 59% population is in working-age group. On the education front, 19% of the population in beneficiary group and 22% of non-beneficiary group is illiterate. 72% population in beneficiary households and 68% population in non-beneficiary households have attended school (class 1 to 12); while 7% population in both the groups have studied beyond school. Major occupation is cultivation, while casual labour is a major occupation for beneficiary households. A major part of the population belongs to the category of 'student' or 'housewife' or 'non-working'.

Households in our sample for the state generate income from farming, dairy, agriculture labour, casual labour and salary. Average income of the non-beneficiary households is higher as compared to beneficiaries for households who are engaged in farming. Average income from dairy is also higher for non-beneficiary households. Average income from agriculture labour and casual labour is higher for beneficiary households. This is due to the sample contains poorer households in beneficiary groups. 42% of the beneficiary households have reported income from farming. For non-beneficiary households, 44% of households have reported farming as an occupation. Average annual income of the sample beneficiary households in aggregate is Rs. 63819 in Jharkhand while the same for non-beneficiary households is Rs. 77410 in 2016-17. Average annual income for beneficiary households was Rs. 54716 in 2015-16 while it was Rs. 65308 for non-beneficiary households in the same year. For farming, the average income of non-beneficiary households is higher than beneficiaries; so is the average cost. For dairy, non-beneficiary households have to incur more cost. Average income from agriculture labour work, casual labour work is higher for beneficiary households, probably because of more dependence on these sources of income. For farming, the average income of beneficiary households is Rs. 50618 which is lower than non-beneficiaries (Rs. 63118); so is the average cost (Rs. 24075 and Rs. 28941 respectively). For dairy, average income and cost both are higher for non-beneficiary households.

Disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households shows that the rent on leased-in land is the major factor of the annual expenditure if it is needed. Apart from that major part of the cost of the households consists of expenditure as rent on agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation and expenditure on diesel. The component-wise analysis shows that rent average expenditure in majority of the categories are higher for non-beneficiaries than beneficiaries. In our sample in Jharkhand, for beneficiary households, landless, marginal and small farmers own significant amount of agricultural implements like tractor, trolley, manual/power sprayers, electrical pump set, diesel pump set, sprinkler set, fodder chopper, bullock cart etc. Marginal and small farmers from both beneficiary and non-beneficiary households have a significant proportion of ownership of livestock. Medium and large farmers in both the categories have less livestock. It is also observed that 40% of the households have

pucca houses for non-beneficiary households, while only 34% beneficiaries have pucca houses. 64% of beneficiary households possess TV; while for non-beneficiaries, it is higher (70%). In the case of mobile phones 99% of beneficiary households have reported to possess it, while for non-beneficiaries, it is 95%. Beneficiary households also have more bicycles, two-wheelers, but non-beneficiary households have more four-wheelers and refrigerator. This reinforces the fact that RKVY beneficiaries mainly belonged to the poorer classes.

It is seen from the sample that beneficiary households cultivated paddy, wheat, bajra, maize, tur, gram, moong, urad, mustard, vegetables etc. in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on only paddy, wheat, maize and vegetables. But, average production of paddy, wheat and maize is much higher for non-beneficiary as compared to non-beneficiary households. Price of the marketed quantity is more for paddy in the beneficiary household vis-à-vis non-beneficiary households. For wheat and maize, non-beneficiary households are getting better price. Disaggregated analysis shows that there is a difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For the majority of the crops, marginal farmers are getting a lesser price. This is evident that less price is obtained by the marginal farmers for crops like paddy, wheat, maize, urad etc. (for beneficiary households); and paddy, wheat, maize (for non-beneficiary households). In a comparison of the beneficiary and non-beneficiary marginal farmers, it can be said the average price received by the former is higher for paddy, wheat, maize, gram, urad etc. Efforts are needed for marketing and procurement of the production. It is seen that average income from livestock is much lower for beneficiary households as compared to non-beneficiary households, for both the years 2015-16 and 2016-17. Households, who have livestock, earn from livestock, mainly through milk and animal sale.

Regarding the awareness of RKVY, it is found that in our sample, 60% of the non-beneficiary households mostly are not aware of RKVY. 63% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. Increasing awareness appears to be the basic requirement for the success of government schemes, including RKVY.

RKVY has contributed in crop development in Jharkhand. It is found that crop seeds are made available through RKVY. Among the beneficiaries, 79% are marginal farmers, 19% are small farmers, 3% are medium farmers for one crop and 50% are small farmers, 50% are medium farmers for another crop. In Jharkhand, 76% of the farmers among beneficiaries of RKVY programme have reported that the soil has been tested to know the nature of the soil. Among them, only 33% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. In our study, it is found that majority of beneficiary households have faced problems as: Eligibility or criteria for availing the subsidy not known, subsidy paid after purchase, institutional financing facility not available, biased towards large land owners, Incidence of bribery and restricted choice. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in building infrastructure, providing financial assistance, increasing production, better price realization and procurement. However, it appears that RKVY has not been very successful in generating employment and capacity building.

Figure 10-1: Allocation, Release and Expenditure in RKVY for Jharkhand (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 10-1: List of selected project name and code

Project Code	Project Name
1	Bringing Green Revolution to Eastern India (H)
2	Tamarind processing (IA)
3	Line Sowing (H)

Table 10-2: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17) (No.)

	Beneficiary	Non-Beneficiary	Total
Landless	0	3	3
Marginal	63	13	76
Small	15	3	18
Medium	2	1	3
Large	0	0	0
Total	80	20	100

Table 10-3: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Landless	0	15	3
Marginal	79	65	76
Small	19	15	18
Medium	3	5	3
Large	0	0	0
Total	100	100	100

Table 10-4: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acres)				1.7	3.4	6.3	
Leased-in Land/share cropping (acres)					2.0		
Leased-out Land/share cropping (acres)							
Operated area (owned+LI-LO) (acres)				1.7	3.5	6.3	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rented	Electric		0.0	0.0	0.0	
		Diesel		27.2	0.0	0.0	
	Owned	Electric		37.7	50.3	0.0	
		Diesel		35.1	49.7	100.0	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	
Total Irrigated Area (%)				100	100	100	100

Table 10-5: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acres)					1.5	3.5	8.0
Leased-in Land/share cropping (acres)							
Leased-out Land/share cropping (acres)							
Operated area (owned+LI-LO) (acres)					1.5	3.5	8.0
Irrigated Area by canal (%)					0.0	0.0	0.0
Irrigated Area by tube well (%)	Rented	Electric			0.0	0.0	0.0
		Diesel			52.6	0.0	0.0
	Owned	Electric			0.0	55.2	100.0
		Diesel			47.4	44.8	0.0
Irrigated Area by Tanks (%)					0.0	0.0	0.0
Irrigated Area by Wells (%)					0.0	0.0	0.0
Irrigated Area by others (%)					0.0	0.0	0.0
Total Irrigated Area (%)					100	100	100

Table 10-6: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.3	2.6	5.8	
Leased-in Land/share cropping					5.0	7.0	
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.3	2.9	9.3	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rented	Electric		0.0	0.0	0.0	
		Diesel		37.3	0.0	0.0	
	Owned	Electric		31.8	49.6	0.0	
		Diesel		30.9	50.4	100.0	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	
Total Irrigated Area (%)				100	100	100	

Table 10-7: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

For Rabi 2016-17			Non-beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.4	3.2	6.0	
Leased-in Land/share cropping							
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.4	3.2	6.0	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rented	Electric		0.0	0.0	0.0	
		Diesel		52.9	0.0	0.0	
	Owned	Electric		0.0	59.3	100.0	
		Diesel		47.1	40.7	0.0	
Irrigated Area by Tanks				0.0	0.0	0.0	
Irrigated Area by Wells				0.0	0.0	0.0	
Irrigated Area by others				0.0	0.0	0.0	
Total Irrigated Area (%)				100	100	100	100

Table 10-8: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Total Sample Population		483	107	590
%f dependent members		8	5	7
Age group	<=15	35	27	34
	>15 to 25	17	22	18
	>25 to 40	24	25	25
	>40 to 59	16	16	16
	>59	7	9	7
	All Groups	100	100	100
Education	Illiterate	19	22	20
	Class 1 to 5	19	12	18
	Above Class 5 to 8	16	22	17
	Above Class 8 to 12	37	34	36
	Above Class 12	7	7	7
	Other diploma	0	1	0
	can read and write	0	1	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	2	1	2
	All Groups	100	100	100

Table 10-9: Occupational distribution of household members in the sample households (%)

		Beneficiary	Non-Beneficiary	Total
Occupation	1 cultivation	8	13	9
	2 agricultural labour	2	2	2
	3 dairy	0	0	0
	4 casual labour	10	8	10
	5 self-employment	3	7	4
	6 salaried employment	4	4	4
	7 forestry	0	0	0
	8 Horticulture	0	0	0
	9 Floriculture	0	0	0
	10 Sericulture	0	0	0
	11 Fishing	0	0	0
	12 Aquaculture	0	0	0
	13 Poultry	0	0	0
	14 beekeeping	0	0	0
	15 Student	39	0	32
	16 housewife	20	21	21
	17 non-working	12	25	15
	others (no separate income)	1	21	5
	All Groups	100	100	100

Table 10-10: Percentage distribution of households according to sources of income (2016-17)

Source	Beneficiary (%)	Non-Beneficiary (%)
Farming	42	44
Horticulture	0	0
Floriculture	0	0
Dairy	8	10
Poultry	1	0
Sericulture	0	0
Agricultural Labour	8	5
Casual Labour	27	26
Forestry	0	0
Fishing	0	0
Beekeeping	0	0
Salary	8	8
Other	5	8
Total	100	100

Table 10-11: Average income and cost of beneficiaries and non-beneficiaries (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)
Farming	60213	28548	31665	76412	35235	41176
Horticulture						
Floriculture						
Dairy	15615	5769	9846	27500	11250	16250
Poultry	300000	200000	100000			
Sericulture						
Agricultural Labour	32143			27500		
Casual Labour	72733			52500		
Forestry						
Fishing						
Beekeeping						
Salary	90957			173333		
Other	97733	39463	58270	170000	35600	134400
Total	63819	29953	33866	77410	31900	45510

Table 10-12: Average income and cost of beneficiaries and non-beneficiaries (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	50618	24075	26543	63118	28941	34176
Horticulture						
Floriculture						
Dairy	11615	4400	7215	16250	6750	9500
Poultry	250000	150000	100000			
Sericulture						
Agricultural Labour	27500			24500		
Casual Labour	61556			43500		
Forestry						
Fishing						
Beekeeping						
Salary	82100			161667		
Other	84291	38080	46211	146667	34214	112452
Total	54716	31900	22816	65308	27089	38218

Table 10-13: Change in Average income and cost of beneficiaries (2016-17)

<i>Source</i>	Beneficiary		
	Average Income	Cost	Average Profit
Farming	19	19	19
Horticulture			
Floriculture			
Dairy	34	31	36
Poultry	20	33	0
Sericulture			
Agricultural Labour	17		
Casual Labour	18		
Forestry			
Fishing			
Beekeeping			
Salary	11		
Other	16	4	26

Table 10-14: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
<i>items</i>	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.
Rent on leased-in land	22667	0	24000	0
Total rent on machinery (tractor, harvester, etc.)	6958	7969	5763	7300
Expenditure on purchased water for irrigation	3300	4857	2514	4214
Expenditure on electricity for irrigation	1400	2500	1079	1800
Expenditure on diesel	5126	6611	4312	6111
Expenditure on other fuels for agriculture	989	1817	777	1417
Any other	16588	21300	13903	16994
<i>Total expenditure on agriculture</i>	57028	45054	52349	37836

Table 10-15: % increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	-6	
Total rent on machinery (tractor, harvester etc.)	21	9
Expenditure on purchased water for irrigation	31	15
Expenditure on electricity for irrigation	30	39
Expenditure on diesel	19	8
Expenditure on other fuels for agriculture	27	28
Any other	19	25
<i>Total expenditure on agriculture</i>	9	19

Table 10-16: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 4)

	2016-17		2015-16	
items	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	20000		16000	
Total rent on machinery (tractor, harvester etc.)	8282	8444	6821	7811
Expenditure on purchased water for irrigation	3056	5625	2067	4625
Expenditure on electricity for irrigation	1417		1092	
Expenditure on diesel	6952	6700	5781	6200
Expenditure on other fuels for agriculture	1165	975	809	750
Any other	16905	17567	14214	13667
Total expenditure on agriculture	57776	9484	7319	7929

Table 10-17: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 5)

	2016-17		2015-16	
items	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	24000		28000	
Total rent on machinery (tractor, harvester, etc.)	5344	7357	4475	6643
Expenditure on purchased water for irrigation	3740	3833	3320	3667
Expenditure on electricity for irrigation	1300	2500	1000	1800
Expenditure on diesel	4061	6500	3456	6000
Expenditure on other fuels for agriculture	848	3500	750	2750
Any other	16270	25500	13593	20738
Total expenditure on agriculture	7646	11731	6576	9865

Table 10-18: Asset ownership by beneficiary households (% of number of implements) (2016-17)

Assets	Beneficiary					
	Landless	Marginal	Small	Medium	Large	Total
Tractor	50	33	17	0	0	100
Trolley	25	50	25	0	0	100
Weeder						
Manual/power sprayers	70	24	6	0	0	100
Threshers						
Drier						
Electrical Pump sets	67	33	0	0	0	100
Diesel Pump sets	74	23	4	0	0	100
Sprinkler sets/Drip Irrigation Equipment	50	0	50	0	0	100
Cane crusher/agro-processing equipment	0	100	0	0	0	100
Leveller	0	50	50	0	0	100
Fodder choppers	86	14	0	0	0	100
Bullock cart	80	0	20	0	0	100
Harvest Combine						
Others	100	0	0	0	0	100

Table 10-19: Asset ownership by non-beneficiary households (206-17)

Assets (% of number of equipment)	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Tractor	0	50	0	50	0	100
Trolley	0	50	0	50	0	100
Weeder	0	0	0	100	0	100
Manual/power sprayers	0	57	29	14	0	100
Electrical Pump sets	0	0	50	50	0	100
Diesel Pump sets	0	75	25	0	0	100
Leveller	0	75	0	25	0	100
Fodder choppers	20	60	0	20	0	100
Bullock cart	0	100	0	0	0	100

Table 10-20: Livestock ownership by beneficiary households (2016-17) (% number of livestock)

Livestock	Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0	80	16	4	0	100
Buffalo	0	73	27	0	0	100
Young Stock	0	76	17	7	0	100
Male Draught	0	74	26	0	0	100
Goat	0	73	21	6	0	100
Pig	0	100	0	0	0	100
Poultry	0	97	2	1	0	100

Table 10-21: Livestock ownership by non-beneficiary households (2016-17) (% number of equipment)

Livestock	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	18	71	0	12	0	100
Buffalo	12	65	24	0	0	100
Young Stock	33	60	0	7	0	100
Male Draught	0	100	0	0	0	100
Goat	0	77	23	0	0	100
Pig	0	100	0	0	0	100
Poultry	0	70	30	0	0	100

Table 10-22: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	24	25	24
Pucca	34	40	35
Semi-Pucca	43	35	41
Others	0	0	0
Total	100	100	100

Table 10-23: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes (%)	No (%)	Total (%)	Yes (%)	No (%)	Total (%)
TV	64	36	100	70	30	100
Telephone	1	99	100	0	100	100
Mobile phone	99	1	100	95	5	100
Cycle	91	9	100	90	10	100
Two wheeler	61	39	100	45	55	100
Four wheeler	5	95	100	90	10	100
Refrigerator	19	81	100	45	55	100

Table 10-24: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (qtls)	Marketed Quantity (quintals)	Price received (per quintals)	Total paid-out costs (Rs)	Profitability
paddy	2.0	2.6	28.5	36.6	1388.1	13031.6	37825.8
wheat	1.1	1.1	13.2	5.6	623.7	6365.4	-2879.0
bajra	1.0	1.0	10.0	6.0	3000.0	4000.0	14000.0
maize	0.6	0.6	3.8	2.5	557.1	2200.0	-787.2
tur	0.3	0.3	1.1	0.2	1333.3	833.3	-611.1
gram	0.6	0.6	3.0	2.5	6000.0	4000.0	11000.0
moong	0.2	0.2	0.7	0.2	2333.3	1533.3	-1144.4
urad	0.2	0.2	1.0	0.7	3000.0	1766.7	233.3
mustard	0.5	0.5	2.0	1.0	1058.3	1916.7	-902.4
vegetable 1	0.8	0.8	33.8	30.5	577.5	9460.8	8145.8
vegetable 2	0.3	0.3	10.0	9.8	889.5	3394.7	5312.7
vegetable 3	0.3	0.3	8.2	8.2	1246.7	3053.3	7111.2
spices 1	0.7	0.7	6.0	5.8	4544.4	10644.4	15612.3
others	0.3	0.3	4.4	4.3	2325.0	2375.0	7680.6

Table 10-25: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Non-beneficiary							
Crop	Cultivate d Area (in Acres)	Irrigate d Area (in Acres)	Productio n (Qtls)	Markete d Quantity (Qtls)	Price receive d (per qtl)	Total paid- out costs (Rs)	Profitabilit y
paddy	2.1	2.1	39.9	28.9	952.9	18176.5	9346.7
wheat	1.8	1.8	25.9	17.5	1346.7	13533.3	9988.4
maize	0.8	0.8	11.0	9.3	1100.0	3166.7	7100.0
vegetabl e 1	0.7	0.7	30.4	26.1	547.5	6150.0	8139.8
vegetabl e 2	0.5	0.5	35.0	35.0	400.0	5000.0	9000.0

Table 10-26: Difference in average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops among beneficiary and non-beneficiary households (2016-17)

Crop	% Difference between Beneficiary and Non- Beneficiary for 2016-17						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid- out costs (Rs)	Profitability
paddy	-4.59	28.20	-28.65	26.85	45.67	-28.30	304.70
wheat	-40.98	-40.98	-49.23	-68.00	-53.68	-52.97	-128.82
maize	-31.43	-31.43	-65.65	-72.83	-49.35	-30.53	-111.09

Table 10-27: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		994	3073	1150			785	1533	1400	
wheat		531	900	1550			1264	1567	1600	
bajra		3000								
maize		540	467	1000			1100			
tur		1333								
gram		6000	6000							
moong		2333								
urad		2000	5000							
mustard		1150	875							

Table 10-28: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		712	1265	1330			865	1470	1300	
wheat		443	854	1475			1268	1567	1550	
bajra		3000								
maize		370	0	1300			1133			
gram		4500	0							
urad		1750	0							
mustard		838	800							

Table 10-29: Distribution of income from livestock

		2016-17		2015-16	
Items		Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Milk		11308	16250	15154	27500
Animal sale		7733	12500	9250	12500
TOTAL		3288	4500	4313	6750

Table 10-30: Difference in average income of beneficiaries and non-beneficiaries and change in it for beneficiary households over the year 2015-16 to 2016-17

		% difference between Beneficiary and non- beneficiary for 2016- 17	% difference between 2016-17 and 2015-16 for beneficiary
<i>Items</i>			
Milk		-30	-25
Animal sale		-38	-16
TOTAL		-27	-24

Table 10-31: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary		
	Yes	No	Overall	Yes	No	Overall
Have you heard about RKVY?	100	0	100	40	60	100
Did you receive any benefits from RKVY in the year 2016-17?	100	0	100	0	100	100
Did you receive any benefits from RKVY in the last five years excluding this year?	63	38	100	0	100	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	5	95	100	0	100	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	59	41	100	35	65	100

Table 10-32: Source of Awareness regarding RKVY (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbours	19	100
Newspaper	0	0
Agriculture/horticulture department	70	0
SAU	0	0
KVK	1	0
Input suppliers	0	0
TV/Radio	0	0
Agri. Exhibitions	1	0
ZP/GP	9	0
Other sources	0	0
Total	100	100

Table 10-33: Percentage distribution of farmers according to the interventions made under crop development (From Kharif, Rabi & Summer 2016-17)

		Crop 1	Crop 2	Fertilizer s	Micro nutrient s	Bio- fertilizer s and bio- control agents	Pesticide s	Other s
Number of Beneficia ries	Landless	0	0					
	Marginal	79	0					
	Small	19	50					
	Medium	3	50					
	Large	0	0					
	Total	100	100					
Number of Non- Beneficia ries	Landless	15	3	3	3	3	3	3
	Marginal	65	77	76	76	76	76	76
	Small	15	17	18	18	18	18	18
	Medium	5	3	3	3	3	3	3
	Large	0	0	0	0	0	0	0
	Total	100	100	100	100	100	100	100

Table 10-34: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether the soil is tested in your area?			Soil health card issued? (among those who had soil tested)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless	76	24	100	33	67	100
Marginal	93	7	100	50	50	100
Small	100	0	100	100	0	100
Medium			100			100
Large	80	20	100	39	61	100
Total	76	24	100	33	67	100
Non-beneficiary						
Landless	0	100				100
Marginal	31	69		50	50	100
Small	67	33		50	50	100
Medium	100	0		100	0	100
Large						100
Total	35	65		57	43	100

Table 10-35: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	0	14	11	33		14
Contact details of the department which pay subsidy not available	0	68	72	33		66
Eligibility or criteria for availing the subsidy not known	0	83	83	67		80
Procedure for the subsidy very tedious	0	26	11	0		22
No of documents required for availing subsidy are too many	0	57	72	67		58
Subsidy paid after purchase while initial payment remains the highest problem	0	83	83	67		80
Delay in transfer	0	4	0	0		3
Prescribed machinery/asset not easily available in the market	0	79	83	67		77
Institutional financing facility not available	0	83	83	67		80
Capacity building/technical advice not provided	0	32	28	33		30
Long time gap between the purchase and receiving the subsidy amount	0	51	56	33		50
Biased towards large land owners	0	83	83	67		80
Poor quality of materials/machinery are supplied	0	22	33	0		23
Implementing agencies are located far away	0	61	50	67		57
Incidence of bribery	0	83	83	67		80
Lack of monitoring	0	41	39	33		39
Complementary inputs not available	0	42	44	33		41
Restricted choice	0	83	83	67		80
Lack of marketing support	0	53	50	67		51
Any other (specify)	0	30	33	0		29

Table 10-36: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	67	17	11	33		18
Contact details of the department which pay subsidy not available	33	0	6	0		2
Eligibility or criteria for availing the subsidy not known	100	17	17	33		20
Procedure for the subsidy very tedious	67	14	17	0		16
No of documents required for availing subsidy are too many	33	3	0	33		4
Subsidy paid after purchase while initial payment remains the highest problem	100	17	17	33		20
Delay in transfer	67	8	6	33		10
Prescribed machinery/asset not easily available in the market	33	9	11	0		10
Institutional financing facility not available	100	17	17	33		20
Capacity building/technical advice not provided	67	11	17	33		14
Long time gap between the purchase and receiving the subsidy amount	33	7	0	0		6
Biased towards large land owners	100	17	17	33		20
Poor quality of materials/machinery are supplied	33	12	17	33		14
Implementing agencies are located far away	67	5	0	0		6
Incidence of bribery	100	17	17	33		20
Lack of monitoring	67	12	17	33		15
Complementary inputs not available	33	5	0	0		5
Restricted choice	100	17	17	33		20
Lack of marketing support	33	9	11	33		11
Any other (specify)	67	8	6	0		9

Table 10-37: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landless										
Marginal	38	62	94	0	51	49	79	21	90	10
Small	67	33	87	0	80	20	67	33	100	0
Medium	100	0	100	0	0	100	100	0	100	0
Large										
Total	45	55	93	0	55	45	78	23	93	8

Table 10-38: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landless								
Marginal	90	10	29	71	54	46	78	65
Small	93	7	20	80	40	60	53	47
Medium	100	0	50	50	50	50	100	0
Large								
Total	91	9	28	73	51	49	74	60

Table 10-39: Details of projects for Implementing agency survey

Sl. No.	Project Name	Implementing agency
01	Tamarind processing	The Jharkhand State Minor Forest Produce Coopretive Department and Marketing Federation Ltd., Ranchi, Jharkhand

Table 10-40: General Information regarding the implementing agency

Issues\ Projects	Tamarind processing
Type of construction	10
New construction/Improvement of an older construction	New
Awareness about DAP	Yes
Included in DAP	No
Project proposed by	Implementing Agency
Level at which the project was proposed	Gram Panchayat Level

Table 10-41: Fund Flow in the project

Issues\ Projects	Tamarind processing
Funds required for the project in 2016-17	Rupees 1.6 crore
Funds approved for the project in 2016-17	Rupees 1.6 crore
Funds released for the project in 2016-17	Rupees 1.6 crore
Number of times funding released for the project in 2016-17	1
Major problems in the release of funds	Delayed release

Table 10-42: Physical Capacity of the projects

Issues\ Projects	Tamarind processing
Required physical capacity of the selected work. (in numbers)	1200 sq. ft
Existing physical capacity excluding the current project.	1200 sq. ft
Number of phases in the project	1
In case of multiple phases, ways for management of funds	Provisions for fund in phased manner in RKVY

Table 10-43: Tendering & Maintenance regarding the project

Issues\ Projects	Tamarind processing
Whether tender was called for execution of the work	Yes
e-tender issued	No
Opinion: e-tendering increases efficiency of tendering	Cant say
Opinion: e-tendering increases transparency	Cant say
Opinion: e-tendering has increased number and quality of responses from vendors	Cant say
Number of days given to respond to tenders	21
Number of vendors responded to the tenders	No, increased quality but not the numbers
Method for evaluating the tenders	Technical criteria and financial criteria
Any re-bidding made	No
Whether selected vendor worked with the agency before	No
Agency responsible for the maintenance of the constructed project in future years	Own agency
If same agency, whether any financial provision is there in the project for maintenance in future	Yes

Table 10-44: Benefits and Challenges regarding the projects

Issues\ Projects		Tamarind processing
Number of farmers expected to be benefitted from the construction	2017-18	1000
	2018-19	3000
	2019-20	10000
Beneficiaries from the project other than the farmers		Cooperatives, FPO's, Local Traders, SHGs
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Warehouse, Marketing Sheds, Cold-storage, Seed-bank. Training Centre, Rural roads, Extension / training services, Developing co-operatives, FPO s, WUA s , Rural electrification, Stable power supply, Government procurement centre
Problems associated with the existing project		Financial
Opinion: the project will complete in stipulated time		No
Reasons for delay in project		Short Delays and Logistical problems
Whether infrastructure is geo-tagged?		Yes
Whether any convergence with other schemes		No

11 KARNATAKA

Karnataka is in the southern part of India, with total geographical area of 191791 sq. km. (Karnataka Economic Survey, 2016-17²⁰). Per Capita state Income (i.e. per capita NSDP) of Karnataka at current prices is Rs.159893 during 2016-17. Agriculture & allied activities in Karnataka contributes to 11.68% of GSDP in 2016-17. The average area under agricultural crops grown in three seasons, i.e., kharif (69.20 lakh hectare), rabi (30.30 lakh hectare) and summer (5.90 lakh hectare) is 105.40 lakh hectares. Cereals, pulses, Oilseeds, Cotton, Sugarcane and Tobacco are major agricultural products. Net cropped area is 100.44 lakh hectare in the state, which is 52.7% of the total geographical area. In Karnataka, 78.32 lakh farm holdings are operating in 121.61 lakh hectare, in which small and marginal holdings account for 76.44% of total holdings. Average size of land-holding is 1.55 hectares. Average size of land-holding varies from 0.48 hectares for marginal farmers (less than 1 hectare) to 14.71 for large farmers (10 hectares and above). It can also be noted that 66% of the cultivated area in the state is under rainfed cultivation; and scarcity of rain for four consecutive months (August to November 2016) is expected to have a severe impact on agricultural production.

RKVY was started in 2007-08 in Karnataka. The state was allotted with Rs. 359.94 from central government in 2015-16 under this scheme. Rainfall during last year was very little in all districts, except in Bidar where it was normal and Uttara Kannada districts where it was in deficit. The state is now facing the challenge of reduction in production due to severe drought situation in major parts of the state, inadequate water storage in major/minor irrigation reservoirs and depleted groundwater. The state, through its policies on agriculture, aims in improving the income level and livelihood of small, marginal and women farmers; provision of quality educational opportunities, promotion of research, generation and use of appropriate technologies to address challenges in agriculture and allied areas.

²⁰ Economic Survey of Karnataka, 2016-17, Department of Planning, Programme Monitoring and Statistics, Government of Karnataka

Karnataka proposed 59 projects amounting to Rs. 656.9 Crores in 2016-17. Small projects are dominated by horticulture, research and fisheries and large projects are by animal husbandry in 2016-17. In aggregate, up to the date the data was accessed, 79 projects are pointed out which needs funds from RKVY in 2016-17, among which animal husbandry got priority in terms of cost; while in terms of number of projects, horticulture was given priority. Allocation of funds under RKVY was highest in 2014-15 in Karnataka, after which year it has reduced substantially. Figure 11-1 shows allocation, release and expenditure in RKVY in Karnataka over the years 2007-08 to 2015-16.

11.1 RESULTS FROM PRIMARY SURVEY

11.2 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

This study analyses performance of RKVY for year 2016-17 in Karnataka by collecting primary information from households dependent on agriculture and allied activities covering 10 projects under RKVY. Table 11-1 shows the list of projects under RKVY programme that are surveyed for this study.

In this study, both beneficiary and non-beneficiary households are surveyed to see the impact of RKVY interventions on farm households. Total 200 sample households were surveyed in Karnataka, out of which 160 households belong to beneficiary group. Information was collected on households' characteristics, income and expenditure, interventions of RKVY and their benefits, and problems related to implementation of RKVY and suggestions.

11.2.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

The households are categorized based on their operated area of land. Among them, the households who do not have any operated area of land are called landless farmers. Households, whose operated area is less than 2.5 acre, are called marginal farmers. Households, whose operated area is between 2.5 to 5 acres, are called small farmers. Households, whose operated area is 5 to 10 acres, are called medium farmers. Households, whose operated area is more than 10 acres, are called large farmers.

Table 11-2 shows the distribution of farmers in our sample according to their land-holding for 2016-17. In our sample, 18% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 26% of them are small farmers (operated area 2.5 to 5 acres), 31% is medium (operated area 5 to 10 acres) and 26% in large farmers (operated area more than 10 acres). In the non-beneficiary households, 18% are marginal, 43% are small, 28% are medium and 13% are large farmers.

In our sample in Karnataka, for kharif 2016-17, average area of owned land is higher for marginal category of land-holding among the beneficiary households as compared to non-beneficiary households. For rest of the categories, non-beneficiary has more amount of land. For small and large farmers, beneficiary households operate in more leased-in land. Both in kharif and rabi season, there are many sources of irrigation: canal, tube wells (electric and diesel), tank, wells etc. used by beneficiary and non-beneficiary households. Many households own tube wells. The details of the land-holding and irrigation facilities are described below (Table 11-3A to Table 11-4B).

11.2.1.2 DEMOGRAPHY OF SAMPLE HOUSEHOLDS

In our sample in Karnataka, total of 160 households are beneficiaries and 40 are non-beneficiaries. Total number of population covered is 1872, among them 1500 people belong to beneficiary households and 372 people belong to non-beneficiary households. Among them in beneficiary households, 16% of the population is below 15 age group, while 12% are in above 60 age group. 74% population in beneficiary households is in working-age-group. In non-beneficiary households, 12% of the population is below 15 age group, while 12% are in above 60 age group. Taking both the groups into consideration, 76.6% population is in working-age. In the education front, 2% of the population is illiterate. Around 80% population in both beneficiary and non-beneficiary households have attended school (class 1 to 12); while 13% population in beneficiary households and 14% population in non-beneficiary households have studied beyond class12. (Table 11-5)

11.2.1.3 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 26% of the beneficiary households have reported income from farming. For non-beneficiary households, 25% of households have reported farming as occupation. 30% of beneficiary households have reported income from horticulture while for non-beneficiary households, 31% reported income from them. Apart from that, households have income from horticulture, sericulture and income from work as agriculture labour (Table 11-6).

Average annual income of the sample beneficiary households in aggregate is Rs. 102633 in Karnataka while the same for non-beneficiary households is Rs. 122178 in 2016-17 (Table 11-7). Average annual income for beneficiary households was Rs. 93785 in 2015-16 while it was Rs.112229 for non-beneficiary households in the same year (Table 11-8). This shows that there is increase in income of beneficiary households in the current year. Major sources of income are farming, horticulture, floriculture, dairy, sericulture, agriculture labour work, casual labour work apart from salary. For farming, average income of non-beneficiary households is higher than beneficiaries; so is the average cost. Average income from horticulture is higher for non-beneficiary households. Average cost on horticulture is also higher for non-beneficiary households. It can be seen from Table 11-9 that average income for farming and horticulture have increased for beneficiary households and average cost for these have decreased; implying the positive intervention of RKVY programme.

Table 11-8 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, the average income of beneficiary households is Rs. 93785 which is lower than non-beneficiaries (Rs. 112229); so is the average cost (Rs. 39326 and Rs. 48231 respectively). Similar trend is followed for farming and horticulture.

In terms of percentage change in income (Table 11-9), average profit for farming has increased and for farming and horticulture in beneficiary households in 2016-17 over the previous year. Average income has increased by 10% in farming and horticulture for beneficiary households. Average cost has also decreased by 13% for beneficiary households in farming, while it has decreased by 10% for horticulture over the two years in Karnataka.

11.2.1.4 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 11-10 describes component-wise analysis of the average expenditure of agriculture for the beneficiary and non-beneficiary households in 2016-17 and 2015-16. Expenditure on agriculture is higher for non-beneficiaries in 2016-17 as compared to beneficiaries. It is evident from the table that both for the beneficiary and non-beneficiary households, rent on machinery (tractor, harvester etc.) (Rs. 10295 in 2016-17 for beneficiary and Rs. 11975 for non-beneficiary) is the major factor of the annual expenditure. Apart from that most of the households have reported expenditure as components that are clubbed in others (i.e. seed fertilizer etc.) which amount to Rs.41719 in 2016-17 for beneficiary households and Rs. 52417 for non-beneficiary households. Expenditure on purchased water for irrigation and electricity and diesel are other important components of agriculture expenditure. The component-wise analysis shows that rent on machinery (tractor, harvester etc.) is higher for non-beneficiaries and so is the expenditure on purchased water for irrigation and electricity and diesel.

Table 11-11 shows the percentage increase in expenditure on different components of inputs for beneficiary and non-beneficiary households in 2016-17 over 2015-16. It is evident that there is a decrease in rent on machinery (tractor, harvester etc.) and expenditure on electricity for irrigation, both for beneficiary and non-beneficiary households. Expenditure on purchased water for irrigation and expenditure on diesel has increased for both beneficiary and non-beneficiary households. But both have increased more for non-beneficiary households. In aggregate, total expenditure on agriculture has reduced both for beneficiary and non-beneficiary households, but the decrease is more for beneficiary households.

It is observed that there is significant variation in expenditure on agriculture for households who are beneficiaries of different projects. Project-wise data (project codes are provided in Table 11-1) for average expenditure on agriculture by households is provided in Table 11-12A to Table 11-12I.

11.2.1.5 OWNERSHIP OF AGRICULTURAL IMPLEMENTS AND LIVESTOCK

In our sample in Karnataka, for beneficiary households, the majority of agricultural instruments like a tractor, trolley, weeder, thrashers, electric pump sets, diesel pump sets, sprinkler sets,

leveller, fodder chopper, harvest combine etc. belong to medium and large farmers (Table 11-13A). Marginal farmers have limited access to instruments like tractor, trolley, manual/power sprayer, electric pump sets, sprinkler set, cane crusher, fodder chopper etc.

Comparison of the beneficiary and non-beneficiary households shows that marginal farmers from beneficiary households have more ownership of implements as compared to marginal non-beneficiary households in our sample. Ownership of assets is very much high for small, medium and large scale farmers as compared to marginal farmers for non-beneficiary households (Table 11-13B).

In our sample households in Karnataka, farmers from both beneficiary and non-beneficiary households have a significant proportion of ownership of livestock (Table 11-14A & Table 11-14B). For beneficiary households, large farmers has larger share in livestock while for non-beneficiary households, small and medium farmers have significant share.

11.2.1.6 ASSETS OF SAMPLE HOUSEHOLDS

In our sample in Karnataka, 24% of the beneficiary households and 30% of non-beneficiary households have kaccha houses. 46% of beneficiary households and 40% of non-beneficiary households have pucca houses (Table 11-15).

It is observed from our sample that beneficiary households have more access to information through TV. 88% of beneficiary households possess TV while for non-beneficiaries, it is 63%. In the case of the mobile phone almost 100% of both beneficiary (98%) and non-beneficiary households (100%) have reported to have it. Beneficiary households also have more two-wheelers and refrigerator. It can be said from the data on asset ownership that though beneficiary households have more TV, cycle or two-wheelers, non-beneficiary households have more four-wheelers on an average. (Table 11-16)

11.2.1.7 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, jowar, maize, ragi, tur, gram, moong, groundnut, sunflower, soyabean, cotton, oilseeds, sugarcane, etc. in the majority of the cultivated area (Table 11-17). Beneficiary households utilized more cultivated

area in paddy, maize, gram, groundnut, cotton etc. as compared to non-beneficiary households. On the other hand, non-beneficiary households have used more cultivated area in production of jowar, ragi, tur, soyabean, etc. as compared to beneficiary households (Table 11- 18). Average production of different crops is higher for beneficiaries as compared to non-beneficiaries for almost all crops except tur. Price received for different crops are also higher for beneficiary households as compared to non-beneficiaries for all crops. Profitability is higher for beneficiaries as compared to non-beneficiaries for paddy, jowar, maize, gram, groundnut, cotton, sugarcane etc., while it is opposite for ragi, tur, soyabean, etc.

A closer look says that for an average production of paddy is 42.6% higher for paddy for beneficiary households as compared to non-beneficiary households. As a net result, the profitability of paddy is 65.7% higher for paddy for beneficiaries (Table 11-19). Profitability is also higher for beneficiary households as compared to non-beneficiary households for jowar, maize, gram, groundnut, cotton, sugarcane, etc. Profitability is lower in beneficiary households for ragi, tur, soyabean, etc.

Disaggregated analysis shows that there is a difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 11- 20). For paddy, small and marginal farmers are getting a higher price as compared to marginal and large farmers. In a comparison of the beneficiary and non-beneficiary marginal farmers, it can be said the average price received is almost same for ragi and gram for which comparable data is present.

In 2015-16, it is seen that price received for paddy by small farmers is slightly higher in beneficiary households as compared to non-beneficiary households, while for medium farmers, it is opposite (Table 11-21).

11.2.1.8 RETURNS FROM LIVESTOCK

Apart from cultivation, the households have income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Karnataka, it is seen that average income from livestock is generated from milk only. Average income from milk is quite low for beneficiary households (Rs. 76810) as compared to non-beneficiary

households (Rs. 81149). This may be because of the reason that our sample was chosen for the beneficiaries who have livestock, not necessarily they are beneficiaries of dairy development projects.

The inter-temporal comparison shows that average income from the production of milk was higher for non-beneficiaries as compared to beneficiaries in both 2015-16 and 2016-17. It can be observed from our sample that income from milk has increased in 2016-17 from 2015-16 for both beneficiaries and non-beneficiaries (Table 11-22).

11.2.1.9 AWARENESS OF RKVY & ITS SOURCES

In our sample in Karnataka, the majority of the beneficiary households had received information regarding RKVY from Agriculture/Horticulture Department, friends and neighbours and agricultural exhibitions (Table 11-23). It is evident that for such government schemes to succeed, government departments and local bodies need to be active in disseminating the awareness regarding the programme.

11.2.1.10 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural mechanization through RKVY. 40 households in our beneficiary groups have received rotavator, 40 households received cultivators and 200 households had received sprinkler (Table 11-24).

Beneficiaries have received support for buying these implements from RKVY programme (Table 11- 25). They had to depend on bank for source of credit. Beneficiaries have reported that these implements have helped in solving labour problem, enabled timely operations and saved water.

RKVY has contributed in crop development in Karnataka. Farmers are benefitted through provision of crop seeds, fertilizer, micro nutrients, biofertilizer and pesticides (Table 11-26). Among the beneficiaries, majority is small farmers, both for beneficiaries and non-beneficiaries.

RKVY has helped farmers to build infrastructure for horticulture through providing financial help to construct field nursery (Table 11-27). Total number of beneficiaries benefitted is 120 under this. Average cost of building of field nursery is Rs. 53875 while subsidy amount from RKVY is Rs. 27350 on an average.

Under RKVY scheme, funds had been provided for composting under organic farming (Table 11- 28). Households have used these composts for their own purpose as well as for selling in the market. They have produced both earthworm compost and slurry compost with the help of subsidy provided by RKVY.

In case of sericulture, RKVY provided funds for two components: DFL and rearing (Table 11-29). For DFL, marginal farmers received subsidy which is 48% of the actual cost. Larger farmers received less subsidies. For rearing, small farmers received largest amount of subsidies (aggregate) among different categories of farmers.

In Karnataka, 100% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 11-30). Among them, 13% of the households (beneficiary) are provided with soil health card. The majority of those, whose soils are tested, belong to large category. The tests had been done in government institutes.

11.3 CONCLUSION

RKVY was started in 2007-08 in Karnataka. The state was allotted with Rs. 359.94 from central government in 2015-16 under this scheme. Rainfall during last year was very little in all districts, except in Bidar where it was normal and Uttara Kannada districts where it was in deficit. The state is now facing the challenge of reduction in production due to severe drought situation in major parts of the state, inadequate water storage in major/minor irrigation reservoirs and depleted ground water. The state, through its policies on agriculture, aims in improving the income level and livelihood of small and marginal farmers; provision of quality educational opportunities, promotion of research, generation and use of appropriate technologies to address challenges in agriculture and allied areas.

Karnataka proposed 59 projects amounting to Rs. 656.9 Crores in 2016-17. Small projects are dominated by horticulture, research and fisheries and large projects are by animal husbandry in 2016-17. In aggregate, up to the date the data was accessed, 79 projects are pointed out which needs funds from RKVY in 2016-17, among which animal husbandry got priority in terms of cost; while in terms of number of projects, horticulture was given priority. Allocation of funds under RKVY was highest in 2014-15 in Karnataka, after which year it has reduced substantially.

This study analyses performance of RKVY for year 2016-17 in Karnataka by collecting primary information from households dependent on agriculture and allied activities covering 10 projects under RKVY. Table1 shows the list of projects under RKVY programme that are surveyed for this study. In this study, both beneficiary and non-beneficiary households are surveyed to see the impact of RKVY interventions on farm households. Total 200 sample households were surveyed in Karnataka, out of which 160 households belong to beneficiary group and 40 are non-beneficiaries. Information was collected on households' characteristics, income and expenditure, interventions of RKVY and their benefits, and problems related to implementation of RKVY and suggestions.

In our sample, 18% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 26% of them are small farmers (operated area 2.5 to 5 acres), 31% is medium (operated area 5 to 10 acres) and 26% in large farmers (operated area more than 10 acres). In the non-beneficiary households, 18% are marginal, 43% are small, 28% are medium and 13% are large farmers. Total number of population covered is 1872, among them 1500 people belong to beneficiary households and 372 people belong to non-beneficiary households. In the sample of our study, 26% of the beneficiary households have reported income from farming. 30% of beneficiary households have reported income from horticulture. Apart from that, households have income from sericulture and income from work as agriculture labour. Average annual income of the sample beneficiary households in aggregate is Rs. 102633 in Karnataka while the same for non-beneficiary households is Rs. 122178 in 2016-17. The study also shows that there is increase in income of beneficiary households in the current year. For farming, average income of non-beneficiary households is higher than beneficiaries; so is the average cost. Average income from horticulture is higher for non-beneficiary households. Average cost on horticulture

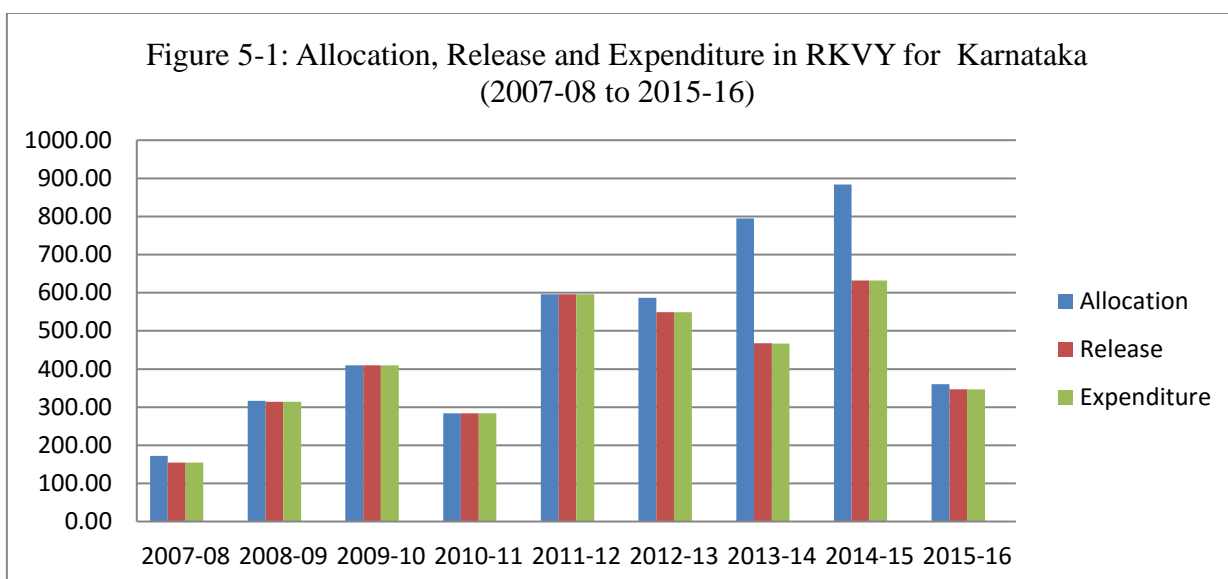
is also higher for non-beneficiary households. Average profit for farming has increased and for farming and horticulture in beneficiary households in 2016-17 over the previous year. Average income has increased by 10% in farming and horticulture for beneficiary households. Average cost has also decreased by 13% for beneficiary households in farming, while it has decreased by 10% for horticulture over the two years in Karnataka.

The study also highlights that both for the beneficiary and non-beneficiary households, rent on machinery (tractor, harvester etc.) is the major factor of the annual expenditure. Apart from that most of the households have reported expenditure as components that are clubbed in others (i.e. seed fertilizer, etc.). In our sample in Karnataka, for beneficiary households, the majority of agricultural instruments like a tractor, trolley, weeder, thrashers, electric pump sets, diesel pump sets, sprikler sets, leveller, fodder chopper, harvest combine etc. belong to medium and large farmers. Marginal farmers have limited access to instruments like tractor, trolley, manual/power sprayer, electric pump sets, sprinkler set, cane crusher, fodder chopper etc.

In our sample in Karnataka, 24% of beneficiary households and 30% of non-beneficiary households have kaccha houses. 46% of beneficiary households and 40% of non-beneficiary households have pucca houses. It is seen from the sample that beneficiary households cultivated paddy, wheat, jowar, maize, ragi, tur, gram, moong, groundnut, sunflower, soyabean, cotton, oilseeds, sugarcane etc. in the majority of the cultivated area. Beneficiary households utilized more cultivated area in paddy, maize, gram, groundnut, cotton etc. as compared to non-beneficiary households. On the other hand, non-beneficiary households have used more cultivated area in production of jowar, ragi, tur, soyabean etc. as compared to beneficiary households. Average production of different crops is higher for beneficiaries as compared to non-beneficiaries for almost all crops except tur. Price received for different crops are also higher for beneficiary households as compared to non-beneficiaries for all crops. Profitability is higher for beneficiaries as compared to non-beneficiaries for paddy, jowar, maize, gram, groundnut, cotton, sugarcane etc., while it is opposite for ragi, tur, soyabean etc. A closer look says that for an average production of paddy is 42.6% higher for paddy for beneficiary households as compared to non-beneficiary households. As a net result, the profitability of paddy is 65.7% higher for paddy for beneficiaries. Profitability is also higher for beneficiary

households as compared to non-beneficiary households for jowar, maize, gram, groundnut, cotton, sugarcane etc. Profitability is lower in beneficiary households for ragi, tur, soyabean etc.

In our sample in Karnataka, the majority of the beneficiary households had received information regarding RKVY from Agriculture/Horticulture Department, friends and neighbours and agricultural exhibitions. It is evident that for such government schemes to succeed, government departments and local bodies need to be active in disseminating the awareness regarding the programme. Under agricultural mechanization through RKV, 40 households in our beneficiary groups have received rotavator, 40 households received cultivators and 200 households had received sprinkler. RKVY has contributed in crop development in Karnataka. Farmers are benefitted through provision of crop seeds, fertilizer, micro nutrients, biofertilizer and pesticides. Among the beneficiaries, majority is small farmers, both for beneficiaries and non-beneficiaries. RKVY has helped farmers to build infrastructure for horticulture through providing financial help to construct field nursery. Majority of farmers in Karnataka have reported that the soil has been tested to know the nature of the soil. Under RKVY scheme, funds had been provided for composting under organic farming. Households have used these composts for their own purpose as well as for selling in the market. They have produced both earthworm compost and slurry compost with the help of subsidy provided by RKVY. In case of sericulture, RKVY provided funds for two components: DFL and rearing. For DFL, marginal farmers received subsidy which is 48% of the actual cost. To sum up, this can be concluded that RKVY programme has been quite helpful for farmers through intervention in different aspects of agriculture and allied sectors.



Source: <http://rkvy.nic.in/>

Table 11-1: List of RKVY projects surveyed in Karnataka

Project code	Name of the Selected projects
1	Micro Irrigation
2	Bhoo Chetna
3	Formation of FPO
4	Mechanization of Horticulture
5	Precision Farming in Agriculture
6	Enhancement of Soil Health supply and biofertilizer
7	Enhancement of leaf quality and yield of mulberry
8	Assistance of Construction of rearing houses
9	Market Infrastructure Facilities for remodelling APMC;
10	Crop diversification

Table 11-2: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	29(18)	7(18)	36(18)
Small	41(26)	17(43)	58(29)
Medium	49(31)	11(28)	60(30)
Large	41(26)	5(13)	46(23)
Total	160(100)	40(100)	200(100)

Table 11-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.79	3.88	7.54	15.34
Leased-in Land/share cropping				1.00	2.75	6.88	17.08
Total operated area (owned+LI-LO)				1.77	3.91	7.64	20.34
Irrigated Area by canal						1.00	
Irrigated Area by tube well	Rented	Electric		1.43	2.89	3.63	4.50
		Diesel		0.88	1.15	2.43	10.00
	Owned	Electric		2.00	3.33	5.58	14.64
		Diesel		0.50	1.50	2.92	5.06
Irrigated Area by Tanks					1.00	1.00	
Irrigated Area by Wells				1.13	2.00	5.00	3.33

Table 11-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.50	4.03	8.14	26.60
Leased-in Land/share cropping					1.00		12.00
Total operated area (owned+LI-LO)				1.50	4.09	8.14	29.00
Irrigated Area by canal					2.00		
Irrigated Area by tube well	Rented	Electric		1.20	2.10	7.60	7.00
		Diesel			1.50	1.50	2.00
	Owned	Electric		2.25	3.00	6.67	21.00
		Diesel			3.75	2.17	7.00
Irrigated Area by Tanks							
Irrigated Area by Wells							10.00

Table 11-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.79	3.85	7.55	14.71
Leased-in Land/share cropping				1.00	2.75	7.90	17.73
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.76	3.89	7.90	19.46
Irrigated Area by canal							
Irrigated Area by tube well	Rented	Electric		1.38	3.00	4.31	4.58
		Diesel		0.88	1.15	2.50	11.29
	Owned	Electric		2.00	3.21	5.50	14.11
		Diesel		0.50	1.50	2.97	4.47
Irrigated Area by Tanks					1.00	1.00	
Irrigated Area by Wells				1.13	2.00	5.00	3.33
Irrigated Area by others							

Table 11-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.50	3.91	8.14	26.60
Leased-in Land/share cropping					1.00		12.00
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.50	3.97	8.14	29.00
Irrigated Area by canal					2.00		
Irrigated Area by tube well	Rented	Electric		1.20	2.13	7.50	6.50
		Diesel			1.50	1.67	
	Owned	Electric		2.25	3.00	6.33	21.00
		Diesel			3.75	2.83	7.00
Irrigated Area by Tanks							
Irrigated Area by Wells							5.50
Irrigated Area by others							

Table 11-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	16	12	15
	>15 to 25	16	21	17
	>25 to 40	32	27	31
	>40 to 59	26	29	26
	>59	11	12	11
	All Groups	100	100	100
Education	Illiterate	2	2	2
	Class 1 to 5	27	22	26
	Above Class 5 to 8	16	17	16
	Above Class 8 to 12	39	41	40
	Above Class 12	11	13	11
	Other diploma	2	1	2
	can read and write	1	0	1
	can count only	1	0	0
	could not attend class 1	1	2	2
	All Groups	100	100	100

Table 11-6: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Percentage of households engaged	
	Beneficiary	Non-Beneficiary
Farming	26	25
Horticulture	11	12
Floriculture	0	0
Dairy	30	31
Poultry	0	0
Sericulture	11	11
Agricultural Labour	18	18
Casual Labour	4	4
Salary	0	1
Other	0	0
Total	100	100

Table 11-7: Average income and cost of beneficiaries and non-beneficiaries (2016-17)

	2016-17					
	Beneficiary			Non-Beneficiary		
<i>Items</i>	Average Income	Average Cost	Average Profitability	Average Income	Average Cost	Average Profitability
Farming	86336	24071	62265	99143	30129	69014
Horticulture	159996	52692	107304	204367	68355	136011
Floriculture	100000	70147	29853	15000	61401	-46401
Dairy	76810	28632	48179	89367	33582	55785
Poultry						
Sericulture	240545	86627	153918	290956	105902	185054
Agricultural Labour	68233	27507	40727	78884	33359	45526
Casual Labour	29762	54169	-24407	33333	57667	-24333
Forestry						
Fishing						
Beekeeping						
Salary	50000			60000		
Other	20000					
Total	102633	39840	62793	122178	47482	74696

Table 11-8: Average income and cost of beneficiaries and non-beneficiaries (2015-16)

	2015-16					
	Beneficiary			Non-Beneficiary		
<i>Items</i>	Average Income	Average Cost	Average Profitability	Average Income	Average Cost	Average Profitability
Farming	78397	27694	50703	89921	35355	54565
Horticulture	146065	58633	87432	192759	79038	113721
Floriculture	100000	45000	55000	20000	9000	11000
Dairy	74554	29033	45521	87911	34664	53247
Poultry						
Sericulture	208805	87967	120838	253307	105818	147489
Agricultural Labour	61357	28947	32410	70868	33528	37340
Casual Labour	25000	22500	2500	27778	25000	2778
Forestry						
Fishing						
Beekeeping						
Salary	192000	86400	105600	60000		
Other						
Total	93785	39326	54459	112229	48231	63998

Table 11-9: Change in Average income and cost of beneficiaries (2016-17) with respect to 2015-16

	Beneficiary		
<i>Items</i>	Average Income	Average Cost	Average Profitability
Farming	10	-13	23
Horticulture	10	-10	23
Floriculture	0	56	-46
Dairy	3	-1	6
Sericulture	15	-2	27
Agricultural Labour	11	-5	26
Casual Labour	19	141	-1076
Salary	-74	-100	-100

Table 11-10: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester etc.)	10295	11975	13989	16040
Expenditure on purchased water for irrigation	6028	11180	5861	14633
Expenditure on electricity for irrigation	8739	10063	9632	10375
Expenditure on diesel	9070	17600	8984	15865
Expenditure on other fuels for agriculture	8902	8000	9005	8000
Any other	41719	52417	46491	53386
<i>Total expenditure on agriculture</i>	84753	111235	93962	118300

Table 11-11: % increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
	% change in total expenditure from 2015-16	
Rent on leased-in land		
Total rent on machinery (tractor, harvester etc.)	-24	-21
Expenditure on purchased water for irrigation	3	62
Expenditure on electricity for irrigation	-9	-3
Expenditure on diesel	2	11
Expenditure on other fuels for agriculture	-23	0
Any other	-17	-5
<i>Total expenditure on agriculture</i>	-17	-6

Table 11-12A: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 1)

Items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester etc.)	28527.78	18000.00	28527.78	18000.00
Expenditure on purchased water for irrigation	5000.00		5000.00	
Expenditure on electricity for irrigation	925.00	0.00	925.00	0.00
Expenditure on diesel	9000.00		9000.00	
Expenditure on other fuels for agriculture	60000.00		60000.00	
Any other	61075.00	74800.00	77612.50	103300.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12B: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 2)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester etc.)	4400.00	6900.00	20000.00	20000.00
Expenditure on purchased water for irrigation				
Expenditure on electricity for irrigation	7675.00	4900.00	7675.00	4900.00
Expenditure on diesel	63300.00	173090.00	63300.00	128000.00
Expenditure on other fuels for agriculture	68000.00	150000.00	68000.00	150000.00
Any other	5950.00	3000.00	11000.00	11000.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12C: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 3)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester etc.)	8860.00	5000.00	20000.00	20000.00
Expenditure on purchased water for irrigation	79000.00	2900.00	79000.00	14500.00
Expenditure on electricity for irrigation	3860.00	5000.00	3860.00	5000.00
Expenditure on diesel	3300.00		3712.50	
Expenditure on other fuels for agriculture	0.00	0.00	0.00	0.00
Any other	3775.00	2000.00	77612.50	96300.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12D: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 4)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester, etc.)	6387.50	3600.00	26533.33	6900.00
Expenditure on purchased water for irrigation	0.00	6000.00	0.00	0.00
Expenditure on electricity for irrigation	19875.00	50000.00	19125.00	20000.00
Expenditure on diesel	1917.50	150.00	1917.50	150.00
Expenditure on other fuels for agriculture	12500.00		12500.00	
Any other	157628.13	6166.67	76376.25	6850.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12E: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 5)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester, etc.)	24102.94	15000.00	22132.35	15000.00
Expenditure on purchased water for irrigation				
Expenditure on electricity for irrigation	10526.32	10000.00	10368.42	10000.00
Expenditure on diesel		4500.00		4500.00
Expenditure on other fuels for agriculture		5000.00		5000.00
Any other	43563.16	41400.00	45017.11	44850.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12F: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 6)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester, etc.)	3342.11	15000.00	2990.79	6810.00
Expenditure on purchased water for irrigation				
Expenditure on electricity for irrigation	8831.58	10000.00	8831.58	10000.00
Expenditure on diesel	500.00	0.00	500.00	0.00
Expenditure on other fuels for agriculture	1833.33	0.00	1150.00	0.00
Any other	36335.92	31950.00	56952.11	47905.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12G: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 7)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land				
Total rent on machinery (tractor, harvester, etc.)	8424.14	6000.00	6602.70	
Expenditure on purchased water for irrigation	0.00		0.00	
Expenditure on electricity for irrigation	30769.23		30769.23	
Expenditure on diesel	4266.67	600.00	4266.67	600.00
Expenditure on other fuels for agriculture	1222.22		423.08	
Any other	47810.53		52052.63	89225.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12H: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 8)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land	0.00	0.00	0.00	0.00
Total rent on machinery (tractor, harvester, etc.)	7588.89	15000.00	31421.05	30000.00
Expenditure on purchased water for irrigation	545.45	8777.78	454.55	1333.33
Expenditure on electricity for irrigation	19580.00	9000.00	37333.33	14000.00
Expenditure on diesel	3357.14	0.00	2728.57	0.00
Expenditure on other fuels for agriculture	2923.08	3600.00	27461.54	3600.00
Any other	175641.10	164100.00	12944.44	10000.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-12I: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 9)

items	2016-17		2015-16	
	Beneficiary	Non-beneficiary	Beneficiary	Non-beneficiary
Rent on leased-in land	0.00	0.00	0.00	0.00
Total rent on machinery (tractor, harvester, etc.)	19583.33	20000.00	6380.00	4250.00
Expenditure on purchased water for irrigation	843.75	406.60	843.75	406.60
Expenditure on electricity for irrigation	5763.16	500.00	5763.16	500.00
Expenditure on diesel	9714.29	28888.89	9714.29	28888.89
Expenditure on other fuels for agriculture	2750.00	0.00	2750.00	0.00
Any other	5454.17	2680.00	19833.33	23000.00
Total expenditure on agriculture	0.00	0.00	0.00	0.00

Table 11-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

Assets	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0.00	3.85	16.67	30.77	48.72
Trolley	0.00	3.03	10.61	31.82	54.55
Weeder	0.00	0.00	0.00	45.45	54.55
Manual/power sprayers	0.00	8.00	28.00	40.00	24.00
Threshers	0.00	2.38	21.43	42.86	33.33
Drier	0.00	0.00	0.00	0.00	100.00
Electrical Pump sets	0.00	10.57	21.14	34.96	33.33
Diesel Pump sets	0.00	0.00	5.13	46.15	48.72
Sprinkler sets/Drip Irrigation Equipment	0.00	10.71	7.14	28.57	53.57
Cane crusher/agro-processing equipment	0.00	100.00	0.00	0.00	0.00
Leveller	0.00	0.00	6.25	18.75	75.00
Fodder choppers	0.00	9.52	27.38	33.33	29.76
Harvest combine	0.00	0.00	0.00	66.67	33.33
Others	0.00	0.00	50.00	0.00	50.00

Table 11-13B: Asset ownership by non-beneficiary households (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0.00	0.00	33.33	33.33	33.33
Trolley	0.00	0.00	30.00	30.00	40.00
Manual/power sprayers	0.00	9.09	45.45	36.36	9.09
Threshers	0.00	0.00	28.57	42.86	28.57
Electrical Pump sets	0.00	8.00	52.00	24.00	16.00
Diesel Pump sets	0.00	0.00	30.77	46.15	23.08
Sprinkler sets/Drip Irrigation Equipment	0.00	0.00	33.33	33.33	33.33
Cane Crusher/Agro-processing Equipment					
Leveller	0.00	0.00	25.00	25.00	50.00
Fodder choppers	0.00	11.76	29.41	35.29	23.53

Table 11-14A: Livestock ownership by beneficiary households (2016-17)

<i>Livestock</i>	Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0	13	22	32	33	100
Buffalo	0	13	24	29	34	100
Young Stock	0	13	23	33	31	100
Male Draught	0	0	0	0	100	100
Goat	0	40	60	0	0	100
Poultry	0	50	0	50	0	100

Table 11-14B: Livestock ownership by non-beneficiary households (2016-17)

<i>Livestock</i>	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0	19	33	38	10	100
Buffalo	0	8	46	15	31	100
Young Stock	0	17	38	31	14	100
Male Draught	0	100	0	0	0	100
Goat	0	0	100	0	0	100

Table 11-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	24	30	25
Pucca	46	40	45
Semi-Pucca	30	30	30
Others	0	0	0
Total	100	100	100

Table 11-16: Percentage distribution of households according to Other Assets (2016-17)

Other Assets	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	88	12	100	63	38	100
Telephone	1	99	100	0	100	100
Mobile phone	98	2	100	100	0	100
Cycle	47	53	100	20	80	100
Two wheeler	68	33	100	60	40	100
Four wheeler	8	92	100	13	88	100
Refrigerator	30	70	100	25	75	100
Others (specify)						

Table 11-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	1.6	1.6	43.4	34.7	1276.9	11495.0	32847.6
wheat	2.9	2.9	25.9	25.4	1500.0	28750.0	9286.3
jowar	1.3	1.3	12.1	11.7	1550.0	8515.4	9630.4
maize	2.0	2.0	42.5	40.8	1329.7	38387.3	15871.4
ragi	0.8	0.8	6.2	6.1	1100.0	3823.5	2903.2
tur	0.8	0.8	5.4	5.3	5000.0	15110.4	11273.6
gram	4.2	4.2	27.2	26.3	2500.0	8356.9	57506.1
moong	3.1	3.1	37.1	35.7	4500.0	71185.0	89259.8
groundnut	1.7	1.7	15.4	15.0	2500.0	19714.3	17700.0
sunflower	5.0	5.0	25.0	24.5	2000.0	24000.0	25000.0
soyabean	1.9	1.9	12.1	11.8	2000.0	9297.5	14392.5
cotton	2.6	2.6	31.4	30.4	1000.0	15798.5	14646.2
other oilseeds	1.0	1.0	6.5	6.4	2000.0	5000.0	7740.0
sugarcane	2.4	2.4	837.6	753.9	250.0	159987.8	28479.5
fruit 1	2.3	2.3	342.0	330.8	1125.6	144633.1	227742.6
fruit 2	1.4	1.4	315.6	305.5	914.3	133428.6	145909.2
vegetable	1.8	1.8	142.2	132.1	836.4	51736.4	58741.6
others	2.4	2.4	71.1	70.3	2983.7	100713.3	108916.2

Table 11-18: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	1.1	1.1	28.9	23.1	1205.3	8061.6	19829.3
jowar	1.4	1.4	12.2	11.8	1472.5	9058.1	8361.6
maize	1.6	1.6	30.8	29.6	1268.9	29285.7	8300.0
ragi	1.0	1.0	8.0	7.8	1045.0	5156.3	3026.1
tur	1.3	1.3	8.4	8.2	4750.0	24554.4	14158.1
gram	2.1	2.1	13.0	12.6	2375.0	4200.0	25677.5
groundnut	1.3	1.3	10.9	10.6	2375.0	14684.6	10466.6
soyabean	2.3	2.3	14.4	14.1	1900.0	11625.0	15108.0
cotton	2.1	2.1	24.0	23.3	950.0	12720.0	9405.5
sugarcane	3.0	3.0	997.5	897.8	237.5	190522.5	22693.1
fruit 1	2.8	2.8	425.0	411.2	1013.3	183733.3	232898.7
fruit 2	2.3	2.3	534.2	517.3	855.0	251675.0	190616.5
vegetable 1	1.9	1.9	148.1	140.4	820.5	51090.9	64109.1
vegetable 2	3.0	3.0	228.0	213.8	570.0	60000.0	61837.5
Spices	2.0	2.0	36.9	36.5	950.0	28000.0	6665.5
flower	1.0	1.0	9.5	9.0	14250.0	64125.0	64552.5
others	2.2	2.2	61.3	60.6	2908.1	101256.9	75000.3

Table 11-19: Difference in average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops among beneficiary and non-beneficiary households (2016-17)

Crop	% Difference between Beneficiary and Non- Beneficiary						
	Cultivated Area	Irrigated Area	Production	Marketed Quantity	Price received	Total paid-out costs	Profitability
paddy	42.6	42.6	50.1	50.1	5.9	42.6	65.7
jowar	-6.0	-6.0	-1.1	-1.0	5.3	-6.0	15.2
maize	30.0	30.0	37.8	37.8	4.8	31.1	91.2
ragi	-25.8	-25.8	-21.9	-21.9	5.3	-25.8	-4.1
tur	-38.5	-38.5	-35.2	-35.3	5.3	-38.5	-20.4
gram	99.0	99.0	109.4	109.4	5.3	99.0	124.0
groundnut	34.3	34.3	41.3	41.3	5.3	34.3	69.1
soyabean	-20.0	-20.0	-15.8	-15.8	5.3	-20.0	-4.7
cotton	24.2	24.2	30.7	30.7	5.3	24.2	55.7
sugarcane	-20.2	-20.2	-16.0	-16.0	5.3	-16.0	25.5

Table 11-20: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1200	1278	1225	1200			1275	1250	1200
wheat		1500	1500	1500						
jowar							1550	1550	1550	1550
bajra		1550	1550	1550	1550					
maize		1375	1302	1375	1320			1296	1375	1375
ragi		1100	1100	1100			1100	1100	1100	1100
gram		2500	2500	2500	2500		2500	2500		
groundnut		2500	2500	2500	2500			2500	2500	
sunflower			2000	2000						
soyabean		2000	2000	2000	2000		2000	2000	2000	2000
mustard										
cotton		1000	1000	1000	1000			1000	1000	1000
sugarcane		250	250	250	250		250	250	250	

Table 11-21: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Land less	Mar ginal	Small	Medi um	Large	Landle ss	Margin al	Small	Mediu m	Lar ge
paddy		1140	1214	1164	1140			1211	1188	1140
wheat			1425	1425	1425					
jowar		1473	1473	1473	1473		1473	1472	1473	1473
maize		1306	1237	1306	1254			1231	1306	1306
ragi			1045	1045	1045		1045	1045	1045	1045
gram		2375	2375	2375	2375		2375	2375		
moong					4275					
groundnut		2375	2375	2375	2375			2375	2375	
sunflower			1900	1900						
soyabean		1900	1900	1900	1900		1900	1900	1900	1900
mustard										
cotton		950	950	950	950			950	950	950
other oilseeds			1900							
sugarcane		237	237	237	237		237	237	237	

Table 11-22: Distribution of income from livestock

Average income from Milk	Beneficiary	Non-Beneficiary
2016-17	76810.5	81149.4
2015-16	74553.9	79827.6

Table 11-23: Source of Awareness regarding RKVY (%) (2016-17)

	Beneficiary
Friends & neighbours	52
News Paper	0
Agriculture/Horticulture Department	23
SAU	0
KVK	0
Input Suppliers	2
TV/radio	0
Agri. Exhibitions	22
ZP/GP	1
Other sources	0
Total	100

Table 11-24: Number of beneficiaries who bought the implements in 2016-17

<i>Implements</i>	Number of Beneficiaries
Rotavator	40
Cultivators	40
Sprinkler	200

Table 11-25: Details of intervention in agriculture mechanization for beneficiaries (Average No.)

		Rotav ator	Cutters & Thresher	Sprin kler
No of beneficiaries of RKVY (Total no.)		40	40	200
Number of benefits received (Total no.)		40	40	200
Total cost (Rs)		80000	66000	20862
Amount financed by loan (Rs.) (Average)		17500	1	5700
Source of Credit (%)				
	Bank	100	0	80
	MFI			
	Money lender			
	Other			
Subsidy amount from RKVY (Rs.) (Average)		62500	16000	14592
Mode of subsidy Transfer (%)				
	Price subsidy	100	100	0
	DBT			
If DBT, Number of days taken to receive subsidy? (average)		15	1	5
Benefits derived from the implement (Codes Below) (%)				
1	Solved labour problem	100	0	0
2	Enabled timely operations	100	0	0
3	Saved water	100	0	0
4	Helped in controlling weed			
5	Helped in good plant growth			
6	Reduced Drudgery			
7	Helped in transportation			
8	Reduced cost of Cultivation			
9	Increased cropping intensity			
10	Not useful			

Table 11-26: Percentage distribution of farmers according to the interventions made under crop development (From Kharif, Rabi & Summer 2016-17)

		Crop1	Crop2	Fertilizers	Micro nutrients	Bio-fertilizers and bio-control agents	Pesticides	Others
Number of Beneficiaries	Landless	0	0	0	0	0		0
	Marginal	28	29	27	28	17		42
	Small	56	54	58	49	66		44
	Medium	13	13	12	18	13		12
	Large	4	4	3	6	5		3
	Total	100	100	100	100	100		100
Number of Non-Beneficiaries	Landless	0	0	0	0	0	0	0
	Marginal	30	26	31	32	37	28	21
	Small	52	58	48	52	47	55	61
	Medium	12	11	15	12	12	12	13
	Large	6	5	7	4	4	4	5
	Total	100	100	100	100	100	100	100

Table 11-27: Details of intervention in horticulture infrastructure for beneficiaries (Average No.)

		Field Nursery
No of beneficiary of RKVY		120
Total Cost (Rs.) (average)		53875
Amount financed by loan (Rs.) (average)		36192
Source of Credit (%)		
	Own funds	67
	Bank	33
	MFI	
	Money lender	
	Other	
Subsidy amount from RKVY (Rs.) (average)		27350
Nature of subsidy (%)		
	Price subsidy	33
	DBT	67
	Bank loan at lower rate of interest	
	Bank loan at longer repayment period	
	Simplification of procedures	
	Any other	
If DBT, Number of days taken to receive subsidy? (average)		50

Table 11-28: Details of various types' compost supplied under RKVY (in the year 2016-17)

<i>Land size</i>	Actual cost of construction of pit or vermicompost structure (Rs)	Subsidy provided (Rs)	Value of Compost produced (Rs)	Value of Earthworm produced (Rs)	Value of Slurry produced (Rs)	Total quantity	No. of households who used it for own use	No. of households who sold it in market
Beneficiary								
Landless								
Marginal	868000	498800	1360330	320000	2311000	8410	99	198
Small	3181000	1738100	1658030	528000	3623000	11720	205	410
Medium	627200	360220	525390	120000	687000	3150	46	92
Large	173800	94880	140150	32000	197000	960	14	28

Table 11- 29: Details of Sericulture beneficiaries (in the year 2016-17)

	DFL beneficiaries					
	No	Average cost per unit (Rs).	Subsidy received (Rs).	Subsidy as a percentage of actual cost.	Mode of subsidy transfer.	
					Price subsidy	DBT
Beneficiary						
Landless						
Marginal	20	444200	213100	48	11	9
Small	78	1268400	578200	46	22	56
Medium	16	293200	136600	47	6	10
Large	6	56200	23100	41	1	5
	Rearing beneficiaries					
	No	Average cost per unit (Rs)	Subsidy received (Rs)	Subsidy as a percentage of actual cost	Mode of subsidy transfer	
					Price subsidy	DBT
Beneficiary						
Landless						
Marginal	20	10350000	3040000	29	20	0
Small	78	32560000	11955000	37	78	0
Medium	16	7350000	2400070	33	16	0
Large	6	2550000	925000	36	6	0

Table 11-30: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?			Soil health card issued? (who tested soil)			Place of soil test		
	Yes	No	total	Yes	No	total	Government Institute	Private organization	Do not know
Beneficiary									
Landless									
Marginal	100	0	100	13	87	100	100	0	0
Small	100	0	100	42	58	100	100	0	0
Medium	100	0	100	31	69	100	100	0	0
Large	100	0	100	57	43	100	100	0	0
Total	100	0	100	33	67	100	100	0	0
Non-beneficiary									
Landless									
Marginal	26	74	100	29	71	100	100	0	0
Small	13	87	100	50	50	100	100	0	0
Medium	36	64	100	75	25	100	100	0	0
Large	60	40	100	67	33	100	100	0	0
Total	22	78	100	50	50	100	100	0	0

12 KERALA

Kerala, situated in India's tropical Malabar Coast, with nearly 600 km of Arabian Sea shoreline, is often referred to as “God’s own country” because of its natural beauty. The state has a geographic area of 38863 square kilometres. Around 52.3% of the population lives in rural areas in the state. Agriculture and allied sector is one of the important sectors in the economy with its share of 10.38% in Gross State Domestic Product in 2015-16 (Economic Review of Kerala 2016). Gross cropped area in Kerala is 2627.5 thousand hectare in 2015-16. Net irrigated area to total cropped area is 15.75% in Kerala in 2015-16. Among the total number of operational holdings, 96% belong to marginal farmers (land less than 1 hectare) in 2010-11. According to land cultivated in production of crops, major crops in Kerala are coconut, rubber, paddy, areca nut, pepper, cardamom, tea, etc. Food crops (rice, tapioca, pulses) accounted for only 10.21% of total cultivated area while cash crops (cashew, coconut, rubber, tea and coffee) is grown in 62.8% of total cultivated area.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Kerala. Under RKVY scheme, Rs. 157.71 Crore was allocated for Kerala during 2016-17, among which Rs. 92.76 Crore has been released and Rs. 48.00 Crore is spent (and UC received for that) till 31st July 2017. According to MIS report, Kerala proposed 22 projects amounting to Rs. 132 Crores in 2016-17. Integrated Pest Management is the priority sector the very small-sized projects (cost < 1 crore), Horticulture in small size category (cost 1 to 5 crore) and Animal husbandry and fisheries in the medium-size category (cost 5 to 10 crore). Crop development is the only sector in the very large (cost > 25 crore) category with emphasis for paddy development as sub-sector. So small projects are dominated by Horticulture, Animal husbandry and Fisheries and large projects are by Crop development in 2016-17. Figure 12-1 shows allocation, release and expenditure in RKVY in Kerala over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Kerala. We have selected three projects for Kerala and analysed the performance of RKVY by collecting primary information. List of selected projects for Kerala is given below (Table 12-1).

12.1 RESULTS FROM PRIMARY SURVEY

12.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Kerala, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, 38% of the beneficiary households are landless, 47% are marginal farmers, 10% are small farmers, 3% are medium and another 3% belong to large category. In the non-beneficiary households, 45% are landless, 42% is marginal, 9% is small farmers, 3% are medium and 2% are large farmers (Table 12-2).

12.1.1.1 LAND-HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of operated land is higher for small and medium farmers among the beneficiary households as compared to non-beneficiary households. Households depend on canals, wells and tube-well (electric and diesel both) for irrigation in Kharif season (Table 12-3A & Table 12-3B).

We have collected separate data for land-holding and irrigation for Rabi season for beneficiary households (Table 12-4). Sources of irrigation for households for Rabi season are mainly canals and diesel tube-wells.

In our sample, a total of 120 households are beneficiaries and 30 are non-beneficiaries. A total number of the population covered is 676, among them, 563 people belong to beneficiary households and 113 people belong to non-beneficiary households. Among them in beneficiary households, 31% of the population is in below 15 age group, while 11 percent are in above 60 age group. Rest 59% population in beneficiary households is in working age group (Table 12-5). In non-beneficiary households, 29% of the population is below 15 age groups, while 5 percent are in above 60 age group. Rest 65% population in non-beneficiary households is in working age group. Taking both the groups into consideration, 60% population is in working age group. On the education front, 17% of the population in beneficiary group and 12% of non-beneficiary group is illiterate. 69% population in beneficiary households and 67% population in non-beneficiary households have attended school (class 1 to 12); while 11% population in beneficiary households and 18% population in non-beneficiary households have studied beyond school. Major occupation of beneficiary households is cultivation, while some members of the households are casual labour or self-employed. A large proportion of non-beneficiary households is salaried employees. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 12-6)

12.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 28% of the beneficiary households have reported income from farming. For non-beneficiary households, 19% of households have reported farming as an occupation. Apart from farming, income is reported from dairy, agriculture labour, casual labour, fishing and salary. More households have reported income for non-beneficiary households from casual labour as compared to the beneficiary households (Table 12-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 135822 in Kerala while the same for non-beneficiary households is Rs. 110566 in 2016-17 (Table 12-8). Average annual income for beneficiary households was Rs. 130333 in 2015-16 while it was Rs. 104453 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy, poultry, fishing apart from agriculture labour, casual labour, salary. For farming, the average income of

beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from salary is higher for non-beneficiary households as compared to beneficiaries (Table 12-8).

Table 12-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 133167, which is higher than non-beneficiaries (Rs. 82500); so is the average cost (Rs. 65836 and Rs. 39364 respectively).

In terms of percentage change in income (Table 12-10), average income has decreased by 2% in farming for beneficiary and increased by 8% for non-beneficiary households. Profitability has increased for farming, dairy and fishing both for beneficiary and non-beneficiary households.

12.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 12-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on electricity for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that Total rent on machinery, Expenditure on diesel and other fuels is higher for beneficiaries as compared to non-beneficiaries in 2016-17. On the other hand, expenditure on purchased water for irrigation and expenditure on electricity for irrigation are higher for non-beneficiaries than beneficiaries.

Table 12-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in all the components except expenditure on electricity for irrigation for non-beneficiary households.

12.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Kerala, for beneficiary households, landless farmers have electric pump sets and fodder choppers. Marginal farmers have small farmers have weeder, Manual / Power Sprayers, electric & diesel pump sets, fodder chopper and levellers. Small farmers have more access to implements like Threshers, Sprinkler sets / Drip Irrigation Equipment etc. Ownership of tractor and trolley are limited to large farmers in the beneficiary households (Table 12-13A). In non-beneficiary households, farmers own Manual / Power Sprayers, Threshers, Electrical & Diesel Pump sets, Fodder choppers etc. (Table 12-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 12-14). Farmers have cow, buffalo, young stock, male draught, sheep, goat and poultry animals. Majority of the livestock is reared by landless and marginal farmers.

In our sample, 72% of the households for beneficiary and 73% of non-beneficiary groups have pucca houses (Table 12-15). 1% of beneficiary households and 3% of non-beneficiary households have kachha houses.

It is observed from our sample that 80% of beneficiary and 100% of non-beneficiary households have reported to possess mobile phone (Table 12-16). Both beneficiary and non-beneficiary households own bicycles, two-wheelers, refrigerator, while ownership of four-wheeler is limited to non-beneficiary households.

12.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, fruit (banana, cashew, coconut etc.) and spices (ginger) in the majority of the cultivated area (Table 12-17). But non-beneficiary households only produced paddy in 2016-17 (Table 12-18). Average production of paddy is higher for beneficiary households (58 qtls) as compared to non-beneficiary households (52 qtls). Price of the marketed quantity for paddy is also more for the beneficiary household vis-à-vis non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 12-19). For the paddy, both for beneficiary and non-beneficiary households, marginal farmers are getting less prices.

12.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Kerala, it is seen that average income from livestock is slightly lower for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 98% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 47% (Table 12-20). Apart from that, some income comes from the selling eggs, animal sale and others.

The inter-temporal comparison shows that average income from the production of milk is higher for beneficiaries in 2016-17 and 2015-16. The situation is opposite for animal sale (Table 12-21).

12.1.1.7 AWARENESS REGARDING RKVY

Regarding the awareness of RKVY, it is found that in our sample, 68% of non-beneficiary households are not aware of RKVY. 38% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits throughout these years. 20% of the beneficiary households and 29% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 54% of the beneficiary households and 40% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. Increase in awareness regarding RKVY would positively affect implementation (Table 12-22).

In our sample in Kerala, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, ZP/GP and Agriculture / Horticulture Department (Table 12-23). For non-beneficiary households, majority of the households received information from friends and neighbours news paper and Agriculture / Horticulture Department.

12.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development has been recognized as very important for the overall development of agriculture in RKVY. This section looks into the aspects of crop development through RKVY. 77.5% of the beneficiaries are marginal farmers (Table 12-24). Beneficiaries have received support from the RKVY in Seeds / planting materials in Kerala (Table 12-25). The majority of them have received it through material subsidy. Average quantity of material subsidy is 98 Kg. Under the project “Agriculture Mechanization”, assistance is provided in villages like Mookkannoor, Kanayannur, Karumalloor, Kizhakkumbhagom, Ambalappuzha, Pallippad, Chennithala etc. in production of banana, paddy, coconut, tapioca etc. Under the project “Crop Development”, villages like Kumarakom and Thalavoor under the project “Development of Eri Sericulture”, villages Kizhuvilam, Velloor etc received help from RKVY for production of paddy.

Feed assistance for animals were also provided under RKVY. Farmers from villages like Kumarakom, Thalavoor, Kizhuvilam, Velloor etc. received feed assistance under RKVY in Kerala. Average amount of subsidy is highest for calcium and lowest for de-worming tablets (Table 12-26). Subsidy is mainly received by landless and marginal farmers.

In Kerala, 43% of the farmers in beneficiary group and 17% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil (Table 12-27A). Among them, 71% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 12-27B).

Within our sample in Kerala, farmers are provided assistance in fishery development. Average amount of subsidy in this regard varies from Rs. 15000 to Rs. 19200 (Table 12-28). All the benefits were provided through direct benefit transfer.

12.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of the RKVY as eligibility or criteria for availing the subsidy not known, procedure for availing subsidy very tedious, delay in transfer, restricted choice, lack of marketing support, among others. Apart from these, non-beneficiary farmers face major constraints in gathering information on RKVY or contact details of the department and Capacity building/technical advice not provided (Table 12-29A & Table 12-29B).

Feedback from beneficiary respondents on the RKVY suggests that it has been successful in employment generation, increasing production, providing financial assistance, capacity building, and in improving price realization and market facilities, though not very significantly, but not in post-harvesting storage and procurement (Table 12-30A & Table 12-30B).

12.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Kerala. Under RKVY scheme, Rs. 157.71 Crore was allocated for Kerala during 2016-17, among which Rs. 92.76 Crore has been released and Rs. 48.00 Crore is spent (and UC received for that) till 31st July 2017. According to MIS report, Kerala proposed 22 projects amounting to Rs. 132 Crores in 2016-17. Integrated Pest Management is the priority sector the very small-sized projects (cost < 1 crore), Horticulture in small size category (cost 1 to 5 crore) and Animal husbandry and fisheries in the medium-size category (cost 5 to 10 crore). Crop development is the only sector in the very large (cost > 25 crore) category with emphasis for paddy development as sub-sector. So proposals for small projects are dominated by Horticulture, Animal husbandry and Fisheries and large projects are by Crop development in 2016-17.

This study analyses performance of RKVY for the year 2016-17 in Kerala. We have selected three projects for Kerala and analysed the performance of RKVY by collecting primary information. In our sample in Kerala, total 150 households are considered for the survey, among

which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. The households are categorized based on their operated area of land. In our sample, 38% of the beneficiary households are landless, 47% are marginal farmers, 10% are small farmers, 3% are medium and another 3% belong to large category. In the non-beneficiary households, 45% are landless, 42% is marginal, 9% is small farmers, 3% are medium and 2% are large farmers.

In our sample, for Kharif 2016-17, the average area of operated land is higher for small and medium farmers among the beneficiary households as compared to non-beneficiary households. Households depend on canals, wells and tube-well (electric and diesel both) for irrigation in Kharif season. We have collected separate data for land-holding and irrigation for Rabi season for beneficiary households. Sources of irrigation for households for Rabi season are mainly canals and diesel tube-wells.

Total number of the population covered is 676, among them, 563 people belong to beneficiary households and 113 people belong to non-beneficiary households. Among them in beneficiary households, 31% of the population is in below 15 age group, while 11 percent are in above 60 age group. Rest 59% population in beneficiary households is in working age-group. In non-beneficiary households, 29% of the population is below 15 age groups, while 5 percent are in above 60 age group. Rest 65% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 60% population is in working age group. On the education front, 17% of the population in beneficiary group and 12% of non-beneficiary group is illiterate. 69% population in beneficiary households and 67% population in non-beneficiary households have attended school (class 1 to 12); while 11% population in beneficiary households and 18% population in non-beneficiary households have studied beyond school. Major occupation of beneficiary households is cultivation, while some members of the households are casual labour or self-employed. A large proportion of non-beneficiary households is salaried employees. A major part of the population belongs to the category of 'student' or 'housewife'.

In the sample of our study, 28% of the beneficiary households have reported income from farming. For non-beneficiary households, 19% of households have reported farming as an occupation. Apart from farming, income is reported from dairy, agriculture labour, casual

labour, fishing and salary. More households have reported income for non-beneficiary households from casual labour as compared to the beneficiary households.

Average annual income beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy, poultry, fishing apart from agriculture labour, casual labour, salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from salary is higher for non-beneficiary households as compared to beneficiaries.

Disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households shows that households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on electricity for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that Total rent on machinery, Expenditure on diesel and other fuels is higher for beneficiaries as compared to non-beneficiaries in 2016-17. On the other hand, expenditure on purchased water for irrigation and expenditure on electricity for irrigation are higher for non-beneficiaries than beneficiaries.

In our sample in Kerala, for beneficiary households, landless farmers have electric pump sets and fodder choppers. Marginal farmers have small farmers have weeder, Manual / Power Sprayers, electric & diesel pump sets, fodder chopper and levellers. Small farmers have more access to implements like Threshers, Sprinkler sets / Drip Irrigation Equipment etc. Ownership of tractor and trolley are limited to large farmers in the beneficiary households. In non-beneficiary households, farmers own Manual / Power Sprayers, Threshers, Electrical & Diesel Pump sets, Fodder choppers etc. Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock. Farmers have cow, buffalo, young stock, male draught, sheep, goat and poultry animals. Majority of the livestock is reared by landless and marginal farmers.

In our sample, 72% of the households for beneficiary and 73% of non-beneficiary groups have pucca houses. 1% of beneficiary households and 3% of non-beneficiary households have

kachha houses. It is observed from our sample that 80% of beneficiary and 100% of non-beneficiary households have reported to possess mobile phone. Both beneficiary and non-beneficiary households own bicycles, two-wheelers, refrigerator, while ownership of four-wheeler is limited to non-beneficiary households.

It is seen from the sample that beneficiary households cultivated paddy, fruit (banana, cashew, coconut, etc.) and spices (ginger) in the majority of the cultivated area. But non-beneficiary households only produced paddy in 2016-17. Average production of paddy is higher for beneficiary households (58 qtls) as compared to non-beneficiary households (52 qtls). Price of the marketed quantity for paddy is also more for the beneficiary household vis-à-vis non-beneficiary households. Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For the paddy, both for beneficiary and non-beneficiary households, marginal farmers are getting lesser prices.

Apart from cultivation, the households earn income from livestock. In our sample for Kerala, it is seen that average income from livestock is slightly lower for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 98% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 47%. Apart from that, some income comes from the selling eggs, animal sale and others.

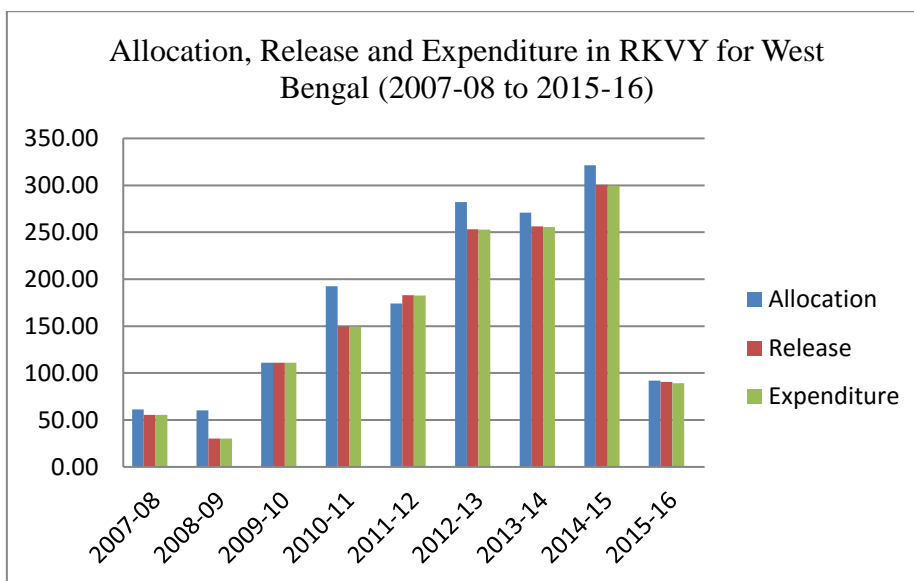
Regarding the awareness of RKVY, it is found that in our sample, 68% of non-beneficiary households are not aware of RKVY. 38% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits throughout these years. 20% of the beneficiary households and 29% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 54% of the beneficiary households and 40% of the non-beneficiary households had received some

benefits from Government Schemes other than RKVY in the year 2016-17. Majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, ZP/GP and Agriculture / Horticulture Department. For non-beneficiary households, majority of the households received information from friends and neighbours news paper and Agriculture / Horticulture Department.

Crop development has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. 77.5% of the beneficiaries are marginal farmers. Beneficiaries have received support from RKVY in Seeds / planting materials in Kerala. The majority of them have received it through material subsidy. Average quantity of material subsidy is 98 Kg. Under the project “Agriculture Mechanization”, assistance is provided in villages like Mookkannoor, Kanayannur, Karumalloor, Kizhakkumbhagam, Ambalappuzha, Pallippad, Chennithala etc. in production of banana, paddy, coconut, tapioca etc. Under the project “Crop Development”, villages like Kumarakom and Thalavoor under the project “Development of Eri Sericulture”, villages Kizhuvilam, Velloor etc received help from RKVY for production of paddy. Feed assistance for animals were also provided under RKVY. Farmers from villages like Kumarakom, Thalavoor, Kizhuvilam, Velloor etc. received feed assistance under RKVY in Kerala. Average amount of subsidy is highest for calcium and lowest for de-worming tablets. Subsidy is mainly received by landless and marginal farmers. Apart from these, farmers are provided assistance in fishery development. Average amount of subsidy in this regard varies from Rs. 15000 to Rs. 19200. All the benefits were provided through direct benefit transfer. In Kerala, 43% of the farmers in beneficiary group and 17% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil. Among them, 71% of the households are provided with soil health card. The tests have been done in government institutes for all the cases.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY as eligibility or criteria for availing the subsidy not known, procedure for the subsidy very tedious, delay in transfer, restricted choice and lack of marketing support among others. Apart from these non-beneficiary farmers face major constraints in gathering information on RKVY or contact details of the department and capacity building/technical advice not provided. According to the feedback from the beneficiary respondents about the success of RKVY, it is stated that the programme is successful in employment generation, increasing production, providing financial assistance and capacity building. It has also helped in better price realization and improving market facilities, though not very significantly. However, it appears that the RKVY has not been very successful in post-harvesting storage and procurement. Its interventions in crop development, feed assistance for animal husbandry and in fishery development in some regions in Kerala have been successful, but there is scope of improvement in improving monitoring of the programme and increase in awareness about it.

Figure 12-1: Allocation, Release and Expenditure in RKVY for Kerala (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 12-1: List of selected project name and code

Project No.	Project Name
1	Fresh water Fish culture in Ponds and tanks
2	Infrastructural development of Methran Kayal Padasekharam
3	Calf adoption Programme

Table 12-2: Distribution of farmers in our sample according to their land-holding (operated area)
(Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	46(38)	21(70)	67(45)
Marginal	56(47)	7(23)	63(42)
Small	12(10)	1(3)	13(9)
Medium	3(3)	1(3)	4(3)
Large	3(3)	0(0)	3(2)
Total	120(100)	30(100)	150(100)

Table 12-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Land less	Marginal	Small	Medium	Large
Owned land (acre)				1.4	3.2	5.3	13.3
Leased-in Land / share cropping (acre)				0.5	2.9	6.5	10.0
Leased-out Land / share cropping (acre)				3.5			
Total operated area (owned+ LI-LO) (acre)				1.4	4.1	9.7	16.7
Irrigated Area by canal (%)				17.0	21.6	42.4	27.3
Irrigated Area by tube-well (%)	Rented	Electric		0.0	0.0	0.0	0.0
		Diesel		14.5	23.1	0.0	0.0
	Owned	Electric		24.1	23.1	24.2	38.2
		Diesel		26.7	32.3	33.3	34.5
Irrigated Area by Tanks (%)				0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)				17.7	0.0	0.0	0.0
Irrigated Area by others (%)				0.0	0.0	0.0	0.0

Table 12-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Land less	Marginal	Small	Medium	Large
Owned land (acre)				1.4	1.0	8.0	
Leased-in Land / share cropping (acre)			5.0	1.0	3.0		5.0
Leased-out Land / share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.4	4.0	8.0	
Irrigated Area by canal (%)			40.0	0.0	0.0	0.0	40.0
Irrigated Area by tube-well (%)	Rented	Electric	0.0	0.0	0.0	0.0	0.0
		Diesel	60.0	30.4	25.0	0.0	60.0
	Owned	Electric	0.0	0.0	0.0	75.0	0.0
		Diesel	0.0	69.6	75.0	25.0	0.0
Irrigated Area by Tanks (%)			0.0	0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)			0.0	0.0	0.0	0.0	0.0
Irrigated Area by others (%)			0.0	0.0	0.0	0.0	0.0

Table 12-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	31	29	30
	>15 to 25	16	14	16
	>25 to 40	25	33	27
	>40 to 59	17	19	18
	>59	11	5	10
	All Groups	100	100	100
Education	Illiterate	17	12	16
	Class 1 to 5	17	21	18
	Above Class 5 to 8	15	9	14
	Above Class 8 to 12	37	37	37
	Above Class 12	11	18	12
	Other diploma	0	1	0
	can read and write	0	0	0
	can read only	0	0	0
	can count only	1	0	0
	could not attend class 1	2	3	2
	All Groups	100	100	100

Table 12-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
Cultivation	18	12	17
agricultural labour	0	3	1
Dairy	2	1	2
casual labour	2	6	3
self-employment (specify)	7	1	6
salaried employment	0	12	2
Student	30	35	31
housewife	25	25	25
non-working	13	5	12
others (no separate income)	2	1	1
All Groups	100	100	100

Table 12-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	28	19
Horticulture	0	0
Dairy	17	4
Poultry	1	2
Agricultural Labour	2	6
Casual Labour	7	23
Fishing	19	11
Salary	15	11
Other	12	25
Total	100	100

Table 12-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	130114	60143	69971	89000	42909	41800
Horticulture		132667				
Floriculture						
Dairy	119045	56841	62205	90000	32500	57500
Poultry	46000	11500	34500	200000	50000	150000
Sericulture						
Agricultural Labour	36000		36000	66667		66667
Casual Labour	52941		52941	65417		65417
Forestry						
Fishing	173125	86375	86750	126667	60167	66500
Beekeeping						
Salary	166447	12237	154211	168333	12000	158333
Other	144860	73100	88817	141154	55250	90154
Total	135822	58879	76944	110566	45162	65404

Table 12-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	133167	65836	63514	82500	39364	39200
Horticulture						
Floriculture						
Dairy	112727	54857	60364	83000	31000	52000
Poultry	42500	12000	30500	200000	50000	150000
Sericulture						
Agricultural Labour	34800		34800	66667		66667
Casual Labour	51882		51882	62917		62917
Forestry						
Fishing	147292	76313	70979	114167	51143	54500
Beekeeping						
Salary	164351	12161	154162	162500	11400	153000
Other	147345	58446	90914	133077	53455	87846
Total	130333	57190	73143	104453	41838	62615

Table 12-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	-2	-9	10	8	9	7
Dairy	6	4	3	8	5	11
Poultry	8	-4	13			
Agricultural Labour	3					
Casual Labour	2			4		
Fishing	18	13	22	11	18	22
Salary	1	1	0	4	5	3
Other	-2	25	-2	6	3	3

Table 12-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	39650	26000	39056	24333
Total rent on machinery (tractor, harvester etc)	6305	5120	5660	4590
Expenditure on purchased water for irrigation	2189	3800	2081	3500
Expenditure on electricity for irrigation	4407	9000	4153	9000
Expenditure on diesel	6935	3480	6305	3060
Expenditure on other fuels for agriculture	1631	480	1158	410
Any other	42618	25760	38330	23460
Total expenditure on agriculture	56968	21920	50451	20043

Table 12-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>Items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	2	7
Total rent on machinery (tractor, harvester etc)	11	12
Expenditure on purchased water for irrigation	5	9
Expenditure on electricity for irrigation	6	0
Expenditure on diesel	10	14
Expenditure on other fuels for agriculture	41	17
Any other	11	10
Total expenditure on agriculture	13	9

Table 12-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	0	33	0	67
Trolley	0	0	33	0	67
Weeder	0	100	0	0	0
Manual / Power Sprayers	0	67	22	4	7
Threshers	0	0	100	0	0
Electrical Pump sets	21	42	16	5	16
Diesel Pump sets	2	65	22	4	7
Sprinkler sets / Drip Irrigation Equipment	0	0	100	0	0
Leveller	0	33	33	0	33
Fodder Choppers	40	48	6	3	4
Others	0	0	50	0	50

Table 12-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Manual / Power Sprayers	14	57	0	14	14
Threshers	0	0	0	100	0
Electrical Pump sets	13	0	13	13	63
Diesel Pump sets	14	43	0	14	29
Fodder Choppers	15	7	2	2	74

Table 12-14: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	51	36	2	8	2
Buffalo	33	58	8	0	0
Young Stock	57	38	2	1	2
Male Draught	0	14	0	86	0
Sheep	11	89	0	0	0
Goat	0	100	0	0	0
Poultry	46	54	0	0	0

Table 12-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	1	3	1
Pucca	72	73	72
Semi-Pucca	28	23	27
Others	0	0	0
Total	100	100	100

Table 12-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	0	100	100	0	100	100
Telephone	0	100	100	0	100	100
Mobile phone	99	1	100	0	100	100
Cycle	83	18	100	93	7	100
Two wheeler	65	35	100	60	40	100
Four-wheeler	7	93	100	0	100	100
Refrigerator	45	55	100	30	70	100

Table 12-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	3	3	58	50	1723	45306	40617
fruit	3	3	8461	8461	6254	108625	52805526
spices	2	2	87	87	1367	49333	70022

Table 12-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	3	3	52	43	1689	42182	31063

Table 12-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1683	1873	1875	1767		1569	1900	1850	

Table 12-20: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
Milk		98	127756	47	90000
Eggs		0		39	150000
Animal sale		0	4500	13	50000
Others		2	46000	0	
TOTAL		100	127012	100	126667

Table 12-21: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	42	46	6	8
Animal sale	-91	-92	-50	0
TOTAL	0	-4	-93	4

Table 12-22: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary		
	Yes	No	overall	Yes	No	overall
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	68	32	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	38	63	100	0	100	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	20	80	100	29	71	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	54	46	100	40	60	100

Table 12-23: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	20.8	40.9	23.9
News Paper	0.0	36.4	5.6
Agriculture / Horticulture Department	63.3	22.7	57.0
SAU	0.0	0.0	0.0
KVK	0.0	0.0	0.0
Input Suppliers	0.8	0.0	0.7
TV/ Radio	0.0	0.0	0.0
Agri. Exhibitions	0.0	0.0	0.0
ZP/GP	15.0	0.0	12.7
Other sources	0.0	0.0	0.0
Total	100	100	100

Table: 12-24: Distribution of farmers for crop development programme (%)

	Distribution of farmers for crop development programme (%)
Landless	0.0
Marginal	77.5
Small	17.5
Medium	2.5
Large	2.5
Total	100.0

Table 12-25: Details of intervention in agriculture mechanization in Kerala for beneficiaries

	Seeds / planting materials
No of beneficiary of RKVY	40
Average actual cost of these materials (Rs.)	3934
Whether Material or Subsidy received from RKVY (%)	
Material	100
Subsidy	0
If Material, quantity supplied (Kg)	98
Area in acres	2

Table 12-26: Interventions made under animal husbandry and dairy (feed assistance for animals in the year 2016-17)

	Calcium		Protein		Vaccine		De-worming tablets		Others	
	Average Subsidy (Rs.)	Subsidy as % of actual cost	Average Subsidy (Rs.)	Subsidy as a % of actual cost	Average Subsidy (Rs.)	Subsidy as a % of actual cost	Average Subsidy (Rs.)	Subsidy as a % of actual cost	Average Subsidy (Rs.)	Subsidy as a % of actual cost
Landless	1545	40	537	2	765	46	102	38	476	27
Marginal	1029	26	500	3	338	29	58	32	265	8
Small	-	-	-	-	-	-	-	-	-	-
Medium	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-

12-27A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?			soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless	0.0	100.0	100.0			
Marginal	66.1	33.9	100.0	73.0	27.0	100.0
Small	83.3	16.7	100.0	60.0	40.0	100.0
Medium	66.7	33.3	100.0	50.0	50.0	100.0
Large	100.0	0.0	100.0	100.0	0.0	100.0
Total	43.3	56.7	100.0	71.2	28.8	100.0
Non-beneficiary						
Landless	4.8	95.2	100.0			
Marginal	42.9	57.1	100.0	100.0	0.0	100.0
Small	0.0	100.0	100.0	100.0	0.0	100.0
Medium	100.0	0.0	100.0	100.0	0.0	100.0
Large						
Total	16.7	83.3	100.0	100.0	0.0	100.0

Table 12-27B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large			
Total	100	0	0

Table 12-27: Interventions in fishery (in the year 2016-17) (Input-related)

	Input-related				
	No.	Average cost per unit (Rs.)	Average Subsidy received (Rs.)	Mode of subsidy transfer	
				Price Subsidy	DBT
Beneficiary					
Landless	17	38235	18353	0	100
Marginal	15	40667	19200	0	100
Small	5	35000	15700	0	100
Medium	2	40000	22500	0	100
Large	2	35000	15000	0	100

Table 12-29A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Landless	Marginal	Small	Medium	Large	Total
Information on RKVY not easily available	26	43	33	33	67	36
Contact details of the department which pay subsidy not available	20	23	0	67	0	20
Eligibility or criteria for availing the subsidy not known	59	54	25	33	0	51
Procedure for the subsidy very tedious	57	46	67	0	67	52
No of documents required for availing subsidy are too many	35	43	42	33	67	40
Subsidy paid after purchase while initial payment remains the highest problem	50	45	33	33	33	45
Delay in transfer	63	45	33	67	33	51
Prescribed machinery/asset not easily available in the market	46	48	50	33	67	48
Institutional financing facility not available	50	57	67	33	67	55
Capacity building/technical advice not provided	17	5	8	0	0	10
Long time gap between the purchase and receiving the subsidy amount	41	55	33	100	67	49
Biased towards large land owners	65	59	42	0	67	58
Poor quality of materials/machinery are supplied	41	27	50	0	0	33
Implementing agencies are located far away	35	34	42	67	33	36
Incidence of bribery	52	5	25	33	33	27
Lack of monitoring	43	39	58	0	67	43
Complementary inputs not available	57	43	42	33	0	47
Restricted Choice	50	55	42	67	67	53
Lack of marketing support	61	54	75	67	33	58
Any other	0	0	0	0	0	0

Table 12-29B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Landl ess	Margi nal	Sm all	Medi um	Lar ge	Tot al
Information on RKVY not easily available	86	71	100	0		80
Contact details of the department which pay subsidy not available	57	86	100	100		67
Eligibility or criteria for availing the subsidy not known	38	29	100	0		37
Procedure for the subsidy very tedious	43	57	0	100		47
No of documents required for availing subsidy are too many	52	71	100	100		60
Subsidy paid after purchase while initial payment remains the highest problem	43	29	0	100		40
Delay in transfer	52	57	100	0		53
Prescribed machinery/asset not easily available in the market	67	86	0	100		70
Institutional financing facility not available	76	71	100	100		77
Capacity building/technical advice not provided	90	100	100	100		93
Long time gap between the purchase and receiving the subsidy amount	57	57	0	100		57
Biased towards large land owners	38	29	100	0		37
Poor quality of materials/machinery are supplied	48	57	0	0		47
Implementing agencies are located far away	48	43	100	100		50
Incidence of bribery	57	57	100	100		60
Lack of monitoring	48	71	0	100		53
Complementary inputs not available	38	57	100	0		43
Restricted Choice	76	71	0	100		73
Lack of marketing support	67	100	100	100		77
Any other	0	0	0	0		0

Table 12-30A: Opinion of beneficiary households about RKVY (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	69	0	57	12	34	34	49	19	46	22
Marginal	81	8	79	10	65	24	59	30	75	30
Small	85	8	92	0	69	23	62	31	77	15
Medium	75	0	75	0	50	25	75	0	75	0
Large	100	0	100	0	67	33	100	0	100	0
Total	76	4	71	9	51	29	56	24	63	24

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 12-30B: Opinion of beneficiary households about RKVY (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	39	30	46	22	34	34	0	0
Marginal	68	21	76	14	60	29	0	0
Small	77	15	85	8	77	15	0	0
Medium	50	25	75	0	75	0	0	0
Large	100	0	67	33	100	0	0	0
Total	56	24	63	17	51	29	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

13 MADHYA PRADESH

Madhya Pradesh is one of the largest of the Indian states with geographic area of 307.58 lakh hectares (9% of India's total area) (State Of Agriculture In Madhya Pradesh)²¹. This landlocked state is situated in the middle of the country and consists of 51 districts. With over 7.26 crore population it is the fifth-largest state in India by population (Census, 2011). It borders the states of Uttar Pradesh to the northeast, Chhattisgarh to the southeast, Maharashtra to the south, Gujarat to the west and Rajasthan to the northwest.

Agriculture is the major economic activity in this state, with 69.8 % of the total workers and 85.6 % of the total workers in rural areas are dependent on agriculture for livelihood (Census, 2011). Total cropped area in Madhya Pradesh is 240.47 lakh hectares in 2014-15 (Madhya Pradesh Agriculture Economic Survey, 2016) while the same is 195246 thousand hectares for India.

Average size of land-holding is 3.07 hectares in Madhya Pradesh, while it varies from 0.49 hectares for marginal farmers (less than 1 hectare) to 17.45 hectares for large farmers (10 hectares and above). According to 2015-16 data, agriculture contributes 28.6 % to state's GDP (at 2004-05 prices). Marginal farmers are 43.85% of the total land-holding population, holding 12.09% of the total arable land in Madhya Pradesh. Small, medium and large farmers are 27.6%, 24.4% and 1% of the farming population, operating over 21.89%, 57.18% and 8.84% of cultivable land respectively (State of Agriculture).

We will look into some of the agricultural indicators, before describing the results found from sample survey conducted in Madhya Pradesh.

Table 1 shows changing patterns in various agricultural indicators. In the first block, we have taken periodic averages of Agricultural Gross Domestic Product (AGSDP). We can see the

21 Hari Om Sharma, Deepak Rathi, Ravi Singh Chouhan, Shiv Charan Meena, (2013). "State of Agriculture in Madhya Pradesh", Economic Research Centre For Madhya Pradesh And Chhattisgarh, Jawaharlal Nehru Krishi Vishwa Vidyalaya, Jabalpur (M.P.)
url: <http://jnkvv.org/PDF/AERC/Study-112.pdf> accessed on 1st July 2017

average AGSDP for the period of 2004-05 to 2007-08 was 3315390 lakh rupees, which increased to periodic average of 4054184 lakh rupees during 2008-09 to 2011-12. During the period of 2012-13 to 2014-15 it became 6504572 lakh rupees. If we restructure the time line on the basis of pre-RKVY and post-RKVY periods, we can see average of pre-RKVY period was 3315390 lakh rupees, that went to 5104350 lakh rupees during the post-RKVY period. The growth of AGSDP between the two periods (pre-RKVY and Post RKVY) was 54%.

The second section of Table 13-1 shows the trend growth rates of AGDSP over the periods mentioned above. During the period of 2012-13 to 2014-15, the trend growth rate was 19.62%. During the Pre-RKVY Period of 2004-05 to 2007-08, the trend growth was 2.55%, which became 13.69 in the post RKVY period of 2008-09 to 2014-15.

In the last block of Table 13-1, we can see the value of allied agricultural sector grew at 18.61% in the post-RKVY period over the pre-RKVY period. 2.55%, which become 13.19% during the post RKVY period. The trend growth allied series was 2.36% during the Pre-RKVY period and became 1.08% during post RKVY Period.

Similarly, Table 13-2 shows the changes in some of the elementary land use parameters over pre-RKVY and post RKVY period. The net sown area grew at 2.56% during this period. Total cropped area grew by 15.01%, gross irrigated area grew by 44.17%, net irrigated area grew by 42.3%, cropping intensity grew by 12.11% and the percentage of gross irrigated area to total cropped area grew by 36%.

13.1 RESULTS FROM PRIMARY SURVEY

13.1.1 RESULTS FROM HOUSEHOLD SURVEY

Rashtriya Krishi Vikas Yojana, in Madhya Pradesh started in 2007-08. From that year to 2014-15, central government has provided 100% funding to the selected agro-based projects to improve the agriculture situation in Madhya Pradesh. In 2015-16, the assistance has been reduced to 60:40 for centre and state. Under this scheme, central government has allocated Rs. 337.63 crore for Madhya Pradesh in 2015-16.

In our study, we have considered 10% of the projects for the state and analysed the performance of RKVY in Madhya Pradesh. The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to ultimate consumers and how it is benefiting cultivators.

In our sample, a total of 160 households are beneficiaries and 40 are non-beneficiaries. Total number of population covered is 1236, of which 1009 were beneficiaries and 227 were non-beneficiary households.

In Madhya Pradesh 200 agricultural households were surveyed in, of which 160 were beneficiaries of the RKVY project and 40 were non-beneficiaries. In all the states, the beneficiaries and the non-beneficiaries were chosen on 80:20 ratio. In case of Madhya Pradesh, same ratio was followed for the sample size. The following pair of tables (Table 13-3 and Table 13-4) explains the details of the sample selected from Madhya Pradesh. This pair of table records the replies of respondents about their source of income.

It may be noted that a sizeable section of the non-beneficiaries come from the small farm class size.

13.1.1.1 LAND AND IRRIGATION

Land is an important factor input for agriculture. Table 13-6A describes the land-holding of different size class farmers over beneficiaries and non-beneficiaries. Beneficiaries among marginal and small farmers have been owning more land than non-beneficiaries from the same size class, whereas small and medium farmers among non-beneficiaries have reported to own more land than beneficiaries. In terms of total operated area, only the beneficiary marginal farmers have been operating over more land than their non-beneficiary counterpart. For every other land class size the non-beneficiaries reported to operate on larger tract of land than the beneficiaries.

For irrigation (Table 13-7), no strong perceivable pattern is observable. Irrigation by tanks and tube-wells are dominant modes for irrigation. In case of irrigation by tanks and irrigation by wells, however, the beneficiaries stand out as being better off than non-beneficiaries in all the categories of land size class. Irrigation by wells and tanks have some users, mostly concentrated among beneficiaries.

13.1.1.2 INCOME: TOTAL AND PROJECT WISE

Income is definitely one of the best measures to evaluate impacts of a project. And it is not only the quantum of income, but also the diversification of income sources too is very important for agricultural household to maintain a steady state of income, as agricultural outputs often get impacted by unforeseen and uncertain consequence. Creating and broadening the scope for diversification of income sources was one of the objectives in RKVY. Here in this section we will assess the response patterns found in our survey to gauge the impact of RKVY in diversification of income sources for agricultural households.

Table 13-8 describes the incomes sources of the respondents of our survey. Dairy was reported to be the second major source of income (after agriculture, as only farming households were selected for surveying) for the most of the respondents: both for beneficiaries (36%) and non-beneficiaries (23%). Casual labour is reportedly the second highest reported source of income by the households, (14% for the beneficiaries and 18% for the non-beneficiaries). It will be interesting to note, that the higher percentage of participation was found for the beneficiaries in trades like dairy, whereas in occupations like casual labour or agricultural labour, where the scope for investment or capital investment is meagre, the percentage of non-beneficiaries exceeded that of the beneficiaries.

13.1.1.3 AVERAGE INCOME:

Now we will look into the income differences between beneficiaries and non-beneficiaries of RKVY. Table 13-9 shows average profit of beneficiaries and non-beneficiaries for the major

secondary sources of income, and Table 13-10 measures the percentage increase in income, cost and profit of beneficiaries and non-beneficiaries. Floriculture is the most lucrative trade in terms of profit (Table 13-10). Because of sharp decline in cost, beneficiaries reportedly enjoyed highest percentage (83%) increase in profit between 2015-16 and 2016-17.

On the other hand, in case of non-beneficiaries, it was farming where they received highest growth in their profit. The profit growth of the non-beneficiaries are higher than that of the beneficiaries; despite the fact that the cost of farming has grown faster for the non-beneficiaries (8%) than that of the beneficiaries (6%).

13.1.1.4 ANNUAL EXPENDITURE ON AGRICULTURE (TOTAL AND PROJECT WISE)

Rising agricultural cost has been one of the major causes of concern over last few years. Increasing spirals of expenditure in agriculture often dampen the profit and income of farmers, despite decent production and expected prices. This section attempts to trace the impact on agricultural production on beneficiaries and non-beneficiaries of RKVY.

Table 13-11 depicts the comparison of expenditures over the projects between beneficiaries and the non-beneficiaries over the financial year of 2015-16 and 2016-17. The percentage increase in cost of the non-beneficiaries, in all the projects is found to have superseded the beneficiaries. The expenditure growth was higher for the non-beneficiaries. Non-beneficiaries experienced highest expenditure growth in fuels for expenditure (22%), in which, the beneficiaries were spending at the same rate as that of previous year. Rent on machinery and expenditure on diesel, and rent on leased-in lands are the heads where the non-beneficiaries had to face considerable expenditure hike in comparison to the beneficiaries.

Table 13-12 describes the scenario in value terms for both the years. The beneficiaries in almost all the items (barring expenditure on diesel) have responded to have been spending more on both the recall period years.

The following five tables describe the percentage increase in expenditure over the years for beneficiaries and non-beneficiaries for different projects. We can observe the following pattern from these tables:

For project 1, in all the components (Table 13-13), the expenditure of the non-beneficiaries has grown at a faster rate: the highest growth being recorded in fuel for non-agricultural purposes for the non-beneficiaries (22%). Total rent on machinery and fuel expenditure are two other major heads (in all projects), where the expenditure for the non-beneficiaries have increased at a considerable rate.

Similarly, for the project 2 (shown in Table 13-14) in all the items, except for other activities the cost has grown at a faster rate for the non-beneficiaries. In case of project 3 (Table 13-15), the growth in cost is higher for the non-beneficiaries than the beneficiaries (barring rent on leased-in land). In project 4 (shown in Table 13-16), the expenditure growth is lesser for the beneficiaries than the non-beneficiaries. In this light, it can be argued that the beneficiaries may have enjoyed cost advantage because of various assistances offered to them through RKVY

13.1.1.5 HOUSEHOLD ROSTER

Of the two hundred households surveyed, 160 were beneficiaries of the RKVY project and 40 were non-beneficiaries. In terms of the total population, it was 1009 beneficiaries and 227 non-beneficiaries that were surveyed during the study. Table 17 describes the main characteristics of the sample size.

Sixty four percent of the beneficiaries (650 out of 1009 respondents) were dependent. Of the non-beneficiaries, 65% were dependent on other family members. In the cohort of beneficiaries, the maximum number of people were found to be from the age group of less than 15 years (27% or 272 out of 1009 non-beneficiaries). The next biggest age group were 15-20 and 25-40 (232 each, or 23% of the total number of beneficiaries from each age group). One hundred and ninety one respondents were found to be from the elderly age group of 40-59 (i.e. 19% of the total beneficiaries). Only 82 beneficiaries were found to be of more than 59 years of age (8%).

In the cohort of 227 non-beneficiaries, 55 (24%) were in the under-15 age bracket. The biggest age group, with 58 respondents (26%), was the 15-25 age group. The next age bracket of 25-40 years was less dense than that of beneficiaries; 10% of the respondents (205 of all non-beneficiaries) came from this age segment. Same number of people came from the next age group of 40-59. Only 23 non-beneficiaries were found to be of more than 59 years of age (10%).

Highest number of respondents in the case of both beneficiaries and non-beneficiaries was found to be educated between 8th to 12th standard. Almost 29% of the beneficiaries were from this educational group, whereas 35% of the non-beneficiary respondents are from this category; while considerable number of the respondents were found to be illiterate (15% and 17% for the beneficiaries and the non-beneficiaries, respectively). Only 23% of the beneficiaries and 17% of the non-beneficiaries were found to have reached between standards 1 and 5.

Previous subsections showed wide differences among indicators when compared between beneficiaries and non-beneficiaries, but in occupational patterns profiles seem to be less divergent. As shown in Table 13-18 maximum number of respondents was found to be students during the survey (29%, for the beneficiaries and non-beneficiaries each). The next biggest occupational segment appeared housewives (24% for the beneficiaries and 23% from the non-beneficiaries.) After these two segments, cultivation is found to be the occupation of maximum number of people surveyed. For both categories, it was 18%.

13.1.1.6 ASSET OWNERSHIP

Asset creation and capital accumulation in the rural and farm sector was one of the primary stated objective of RKVY. The survey attempted to trace this impact. Here the following few tables (Table 13-19 to Table 13-24) shows following findings:

In the study, the farmers were asked whether they own agricultural instruments like tractor, trolley, weeder, power sprayer etc. When compared in terms of numbers, for tractors and then their replies were arranged according to their land size classes and beneficiaries and non-beneficiaries. Table 13-19 gives a snapshot of asset distribution pattern in value terms of beneficiaries and non-beneficiaries according to their size classes. The distribution of assets were perfectly in line with the size of land-holding. The marginal farmers were found to possess

17% of total value of asset among the beneficiary category, whereas the marginal farmers from Non-beneficiaries categories were endowed with only 1%. Small farmers from both beneficiary and non-beneficiaries reported to hold 33% of asset value of their categories. Medium farmers from beneficiary category were holding 21% of the asset value, whereas, their counterparts from non-beneficiary category were holding 32% of the total assets, owned by the non-beneficiaries. Similarly, the asset holding percentage of the large farmers from beneficiaries and non-beneficiaries were 29% and 35% respectively. The smaller land holders from beneficiaries seem to hold more assets than the larger land-holding beneficiaries, but the trend is reversed in the case of non-beneficiaries.

Now we will discuss the asset holding pattern in terms of number of assets. This distribution is given in Table 13-20. It may be noted here, that since the size of the beneficiaries and non-beneficiaries differ, we have standardized the numbers of assets by the total assets of the categories. Of the total number of tractors possessed by the beneficiaries, 4% tractors were found to be with the marginal farmers, 17 % with the small farmers, 31% for the medium farmers and 33% for the large farmers. Where as in case of the non-beneficiaries only small, medium and large farmers were found in possession of tractors (all with 33% each)

Marginal farmers (from beneficiary segment) were found to be holding 17% of all assets possessed by the beneficiaries. This is the size class of farmers that seems to have benefited from the RKVY as far as asset creation is concerned. The counterpart of this segment from the cohort of non-beneficiaries is reportedly holding only 1% of the total wealth held by non-beneficiaries.

13.1.1.7 DISTRIBUTION OF LIVESTOCK AMONG THE FARMERS:

Much like agricultural assets, livestock too is found to be unevenly distributed in the favour of higher size class farmers (Table 13-21). Big animals like cow and buffalo are more than proportionately possessed by the medium and large farming households. However smaller/cheaper animals like goat and poultry was more likely to be possessed by the lower bracket of farmers (marginal to medium size farmers).

13.1.1.8 TYPE OF HOUSE:

Higher proportion of Beneficiaries responded to own pucca houses in comparison to the non-beneficiaries (46% versus 40%). The trends shown in the Table 13-below remain more or less unaltered when we look at the project wise details.

13.1.1.9 OTHER ASSETS:

In almost all the heads, it can be seen, that the beneficiaries are supposed to have own more assets than the non-beneficiaries (Table 13-23). It can be interesting topic to investigate causality of relationship between comparative affluence of the beneficiaries over the non-beneficiaries. The survey had collected the data on assets at project wise at disaggregated level too. But since the trend described in the above table remains unaltered, a detailed description of the projects is being avoided for now.

13.1.1.10 CROP DETAILS

For most of the crops, the beneficiaries have reported to have higher rate of profitability in comparison to the non-beneficiaries. Beneficiaries have reported higher profit than non-beneficiaries in every crop other than in soya bean and vegetables.

Table 13-24 offers a comparison between growth rate between the beneficiaries and non-beneficiaries, and between the two financial years of 2015-16 and 2016-17 for all size class disaggregation. It shows that the beneficiaries of 2016-17 have done better in comparison to both themselves in 2015-16 and to non-beneficiaries in 2016-17.

13.1.1.11 PERCENTAGE DISTRIBUTION OF HOUSEHOLD ACCORDING TO SOURCE OF INCOME (ANIMAL HUSBANDRY COMPONENT)

Upon inquiring the dairy related share of secondary source of income, milk was found to be produced in the largest quantity by both beneficiaries and non-beneficiaries. The dependence on milk as secondary source of income was found to be slightly bigger in the case for the non-beneficiaries, whereas the beneficiaries have responded to have opted for a few more options.

Table 13-25 depicts the growth rate of dairy products as secondary source of income. The last two columns of the table show the growth of dairy products of the beneficiaries and non-

beneficiaries over the time period of 2015-16 to 2016-17. And the two columns preceding it contain the growth figure of the share of dairy product as a component of secondary income for the mentioned years for beneficiaries over non-beneficiaries.

13.1.1.12 AWARENESS ABOUT RKVY:

Awareness is one of the key components for generating desired result of any government run programme. RKVY seems to have succeeded that yardstick, at least for Madhya Pradesh. All the beneficiaries (Table 13-27) and 80% of non-beneficiaries have acknowledged to have been in knowledge of the project. Of all the beneficiaries 98% accepted to have benefited from the project, 51% of the beneficiaries accepted to have benefited on the long-term basis of five years.

Table 13-28 assess the response pattern of the farmers' feedback on sources of their information about RKVY. For beneficiaries, 23% Agriculture/Horticulture department was the source of information for RKVY. Another 47% replied Gram Panchayats, and Zila Parishads to be their source of information. According to 21% of beneficiaries, they got information about RKVY from their friends and neighbours. For non-beneficiaries however, friends and neighbours appeared to be commonest source of information for RKVY.

13.1.1.13 AGRICULTURAL MECHANIZATION:

Agricultural asset building and asset building has been recognized very important for the overall development of agriculture, in RKVY. This section looks into the aspect of agricultural mechanization through RKVY. Though, question were asked about various agricultural instruments like tractors, rotavator, tiller and so on, however, responses could be procured for instruments like seed drill, sprayer, pump sets and sparkler. In terms of the numbers of these tools, the beneficiaries are definitely better off than non-beneficiaries, as none of the non-beneficiaries reported to have any of the tools (other than pump sets) asked for in the questionnaire. According to our sample survey, three beneficiaries were assisted in purchasing seed drills, two were in sprayers, six were in pump sets and four were in sprinklers. Assistances were provided either by subsidy or by direct benefit transfer. Of the three seed drill beneficiaries, one was given subsidy and another two were given cash transfer. Similarly, for sprayers, pump set and sprinkler, one, five and three beneficiaries received their assistance

through subsidy, when in rest of the case they were assisted through direct benefit transfer. In case of seed drill the, the beneficiaries had to wait for more than 30 days to get the DBT. In other cases, the waiting time for DBT was reported to be 30 days. Four out of the six beneficiaries to receive assistance to purchase pumping set reported that, it has helped them in timely operations, three of them reported to have benefited by plant growth with the pump set. Three of them reported that they would not purchase the pump set, had they been not given the assistance. In Table 13-29, we can see such details for all other items too.

It is only the beneficiaries to have reported to have received any subsidies. The non-beneficiaries were supposed to depend on loans from the local banks.

When asked about whether the farmers would have bought the same machine if the RKVY assistance were not there, three of the pump set owners (out of six beneficiaries) said that they would have purchased it anyway. Another three of the pump set owners said that they would have not purchased a pump. Similarly, of the four owners of sparklers (among beneficiaries), only one said that he would have bought it anyway; whereas, three said they would have not bought it in absence of subsidy through RKVY.

13.1.1.14 INTERVENTIONS MADE UNDER CROP DEVELOPMENT

Crop development was one of the thrust areas for RKVY. Table 13-31 shows the response pattern of farmers from different size class about the assistance that they received on various heads of crop development. The respondents were asked about the specific heads they had received assistance for crop development. The respondents were offered alternatives (seeds and planting materials (crop 1, crop 2), fertilizers, micronutrients, bio-fertilizers, pesticides, and others) to opt from, and their responses were collated and represented (Table 13-32). The table shows that for beneficiaries maximum assistance for crop development was provided for crop 1. Of the total beneficiaries, 80% of assistance for crop development was provided for crop 1 and 14% for crop 2, making 94% for the total assistance for seed and plantation material. Besides, fertilizers, micronutrients and pesticides received assistances of 2% each. However, for the non-beneficiaries the distribution is more even.

It is important to trace the impact of the financial assistance. It is expected that the money saved by the recipients due to the assistances bestowed upon them, will be re-invested in agriculture, creating a crowding in of investment. Table 13-33 tabulates the response of respondents when they were asked about what they do with the money that they receive as subsidy. Most of the respondents replied to have used the subsidy amount for other expenses for agriculture. The subsidy cash back in case of fertilizer, micronutrients and pesticides, reportedly was re-channelized into agricultural expenditure. It was found that 2% of the respondents said that they would re-invest the money in same input. Another 15% responded that they would spend it for other inputs. 76% of the respondents (who got assistance for crop production) said they want to use it for other expenses of agriculture. Another 5% said they want to use it for no agricultural expenses.

13.1.1.15 SOIL TESTING

Soil testing facility plays an important role. It helps farmers to choose best crops for their given soil condition and advices them to take necessary measures to prepare their soil for best production under given conditions. RKVY emphasizes on strengthening the soil testing facilities in order to increase agricultural productivity. RKVY gives special emphasis to offer easy and accessible soil testing facility.

Table 13-34 shows the response pattern regarding soil testing. RKVY seems to have benefited the lower land-holding farmers to avail this facility. Table 13-28 shows the percentage of farmers, who have availed this facility. It shows that all the small medium and large farmers have tested their soils. 54% of the small farmers from the beneficiaries too availed this facility. However the percentages drastically drop when we consider the non-beneficiaries.

Table 13-34 shows the response pattern of questions asked regarding soil testing. The propensity to have undergone soil test distinctly increases with land class size.

13.1.1.16 TRAINING

Training is an important tool enhance the productivity and profitability of farmers. In an ever-changing world of technologies, newer training keeps the farmers updated and equip them to use best possible methods in cultivation.

Table 13-35 sums up the responses of the farmers according to their size classes and categories, when they were asked about their experiences about training programmes they had undergone. Almost all of the beneficiaries reported to have undergone training programmes (Table 13-35); 47% of the marginal farmers, 68% of the small farmers, 58% of the medium farmers and 32% of the large farmer responded to have benefited from the training; and 65% of marginal farmers, 80% of the small farmers, 81% of the medium farmers and 84% of the large farmers expressed their desire to join such programmes in future.

13.1.1.17 INFORMATION REGARDING RKVY:

This section collects information about the respondents' perception about the accessibility of the RKVY. Expectedly, beneficiaries found it easier to access than non-beneficiaries. If we look further, within the beneficiaries, we can find that higher size class farmers having a better edge in accessing information.

13.1.1.18 EVALUATION AND FEEDBACK OF RKVY

The respondents were also asked to express their feedback regarding RKVY on a 1-5 scale, 1 being very good and 5 being very poor.

The respondents were asked to express their opinion about RKVY's impact on employment generation, expansion in production, improved marketing facilities, price realization, financial assistance, infrastructure building, capacity building, post harvesting storage, procurement and any other factor of their choice. Based upon their responses, Table 13-37 was produced. In this table, the score in the right column shows the percentage of those people who have ticked for satisfied performance as a share of all the respondents of the question.

13.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

In Madhya Pradesh, two projects were surveyed - (1) construction of agriculture solution centres and (2) Establishment of Composite Nursery for Expansion of area under SRI (Table 13-39). The first project belongs to construction category and second one is under community and services category. Under the project entitled 'Construction of agriculture solution Centres', new Marketing Sheds are being built. The first project was proposed by implementing agency at state level and the second project was proposed at district level (Table 13-40).

Table 13-41 describes fund flow in the first project. Full funding was not released for the second project. Uncertainty in amount released is the major problem.

Table 13-42 highlights the required physical capacity that the construction project aims to improve and the contribution of the project in achieving that. First project has four phases. For the project, e-tenders were called for execution of the works related to the projects. Respondent expressed the opinion that e-tendering improves efficiency of the tendering process. Both technical criteria and financial criteria were used for evaluating the tenders (Table 13-43). As per respondent's assessment, these projects are expected to benefit co-operatives apart from farmers. Some of the complementary/supplementary projects suggested by the respondent for the project could be warehouse, marketing sheds, cold-storage, soil-testing, demonstration unit, rural roads, extension/training services, developing co-operatives, FPOs, WUAs, rural electrification and stable power supply (Table 13-44). No convergence of the project with other schemes / programs has been reported (Table 13-45).

The second project relates to community & services and collective farming is undertaken under the project, which will benefit farmers through better inputs supply (Table 13-46). The project was proposed from district level. 97% of required fund was approved and released (Table 13-47). The major problem in the project cited is delayed release of funds (Table 13-47). The project aimed to benefit around 5000 farmers in 2016-17, which is expected to increase to 8000 in 2019-20 (Table 13-48).

13.2 CONCLUSION

Madhya Pradesh had proposed for 56 projects with cost of total 192.3 crore rupees 2016-17. Four projects were selected for surveying. These projects are project on subsidy of seed distribution, Mass Media, Kisan Sabha, incentive to farmers for purchase agricultural implements. The priority sector for small projects was animal husbandry and for big projects were seeds and agricultural mechanization.

For the purpose of survey, a sample of 200 households was selected, of which 160 were beneficiaries of RKVY and 40 were non-beneficiaries.

In our sample, the respondents were selected in the following percentage ratio. Maximum farmers were selected from the medium size of farmers. For the non-beneficiaries maximum farmers are selected from the small size category.

Dairy was found to be the most common secondary source of income. Distribution of income was perfectly in the line with the size of land-holding. The survey reveals beneficiaries to own more assets than the non-beneficiaries.

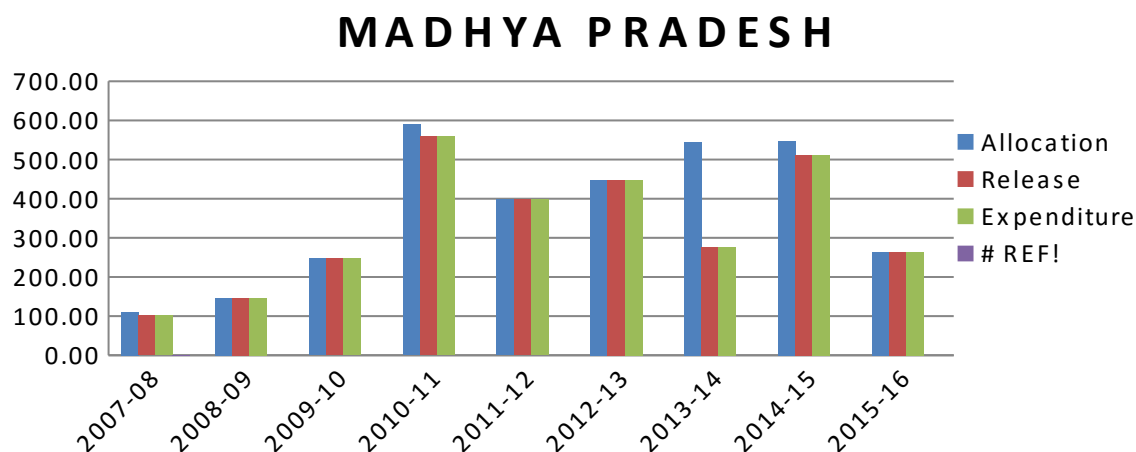
Income from agriculture was higher for beneficiaries than for non-beneficiaries. In dairy-based income sources, too, beneficiaries did better than non-beneficiaries. There is a distinct trend of lesser expenditure rise for the beneficiaries in comparison to the non-beneficiaries. Beneficiaries were reported to own more assets, in terms of agricultural instruments, livestock and houses or consumer durables than non-beneficiaries. Seed drills, sprayers, pump sets and sprinklers are the main items on which the beneficiaries received financial assistance. Financial assistance was provided in terms of both subsidy and direct benefit transfer. The beneficiaries have partially acknowledged that instruments purchased with assistance have increased productivity, lessened their drudgery, decreased labour problem and reduced cost of cultivation.

All the respondents have acknowledged to have been in knowledge of the projects irrespective of being beneficiary or non-beneficiaries. Beneficiaries found RKVY scheme to be more easily accessible than non-beneficiaries. Within the beneficiaries the higher land owning classes seem to have better edge in accessing information about RKVY.

According to the respondents, RKVY had a commendable impact in improving production, improving marketing facilities and price realization. Very few respondents were found to be satisfied with RKVY's role in terms of building infrastructure, capacity building and post harvesting storage.

The program needs some publicity so that farmers are aware of the benefits and can gain from it. The program should also invest in generating employment and building infrastructure in agriculture in Madhya Pradesh.

Figure 13-1: Yearly Allocation Release and Expenditure of Funds for RKVY



Source: RKVY website²²

Table 13-1: State Domestic Product from Agriculture (AGSDP) of Madhya Pradesh during pre and post RKVY periods (Unit Rupees Lakh, and percentage)

2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	Average of PRE-RKVY (2004-05 to 2007-08)	Average of POST RKVY (2008-09 TO 2014-15) *	% Increase
3315390	4054184	6504572	3315390	5104350	54
TREND Growth Rates of AGSDP across states during pre and post RKVY periods					
2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	PRE-RKVY (2004-05 to 2007-08)	POST RKVY (2008-09 TO 2014-15)	
2.55	6.64	19.62	2.55	13.19	
Value of Output: Agriculture and Allied Sectors (2004-05 prices)					
Average			Growth Rate		
Pre-RKVY	Post-RKVY	% increase	Pre-RKVY	Post-RKVY	
4602048	5458262	18.61	2.36	1.08	

²² <http://rkvy.nic.in/> accessed in March 2017

Source: Calculations done on data provided by Planning Commission²³

Table 13-2: Major Land Use Details of Madhya Pradesh

	Net area Sown (thousand Hectare)	% increase in Net area Sown	Total Cropped Area (thousand Hectare)	% increase in Total Cropped Area	Gross irrigated area (thousand Hectare)	% increase in Gross irrigated area	Net Irrigated area (thousand Hectare)	% increase in Net Irrigated area	Cropping Intensity	% increase in cropping Intensity	% of Gross Irrigated Area to Total Cropped Area
Pre-RKVY	14794.3	2.56	19389.4	15.01	5596.59	44.17	5473.621	42.3	131.04	12.11	36
Post RKVY	15174		22301		8068		7738		147		

Source: Land Use Statistics, directorate of Economics and Statistics²⁴

Table 13-3: Number and Percentage (in brackets) distribution between beneficiaries and non-beneficiaries

	Beneficiary	Non-Beneficiary	Total
LL ²⁵			0
ML	29 (81)	7 (19)	36 (100)
SL	41(71)	17 (29)	58 (100)
MD	41(82)	11(18)	52 (100)
LA	49 (89)	5 (11)	54 (100)
Total	160 (80)	40 (20)	200 (100)

Table 13-4: Project-Wise Number of Household And Percentage Distribution Between Beneficiaries And Non-Beneficiaries

Project1				Project2			Project3			Project4		
	B	NB	Total	B	NB	Total	B	NB	Total	B	NB	Total
LL	0	0	0	0	0	0	0	0	0	0	0	0
ML	7	1	8	6	1	7	11	4	15	5	1	6
SL	9	4	13	6	4	10	12	2	14	14	7	21
MD	15	4	19	12	3	15	9	2	11	13	2	15
LA	9	1	10	16	2	18	8	2	10	8	0	8
	40	10	50	40	10	50	40	10	50	40	10	50

23 Url:http://planningcommission.nic.in/data/datatable/data_2312/DatabookDec2014%2067.pdf accessed on March 2017

24 Source: Url: http://eands.dacnet.nic.in/LUS_1999_2004.htm, accessed on March 2017

25 LL, ML, SL, MD, LA are the abbreviations for Landless, Marginal, Small, Medium and Large land-holding Classes Respectively

Table 13-5: List of the Projects Surveyed

Project code	Name of the project
Project 1	Project on Subsidy of seed distribution
Project 2	Mass Media
Project 3	Kisan Sabha 2016
Project 4	Incentive to farmers for Purchase of Agricultural Implements

Table 13-6: Average Size of Land-Holding (in Hectare)

	Beneficiary					Non-Beneficiary				
	LL	ML	SM	MD	LA	LL	ML	SM	MD	LA
Owned land	--	1.79	3.86	7.55	15.0	--	1.5	3.97	8.14	26.6
Leased-in Land/share cropping	--	1.00	2.75	7.39	17.4	--	--	1.00	--	12.0
Leased-out Land/share cropping	--	--	--	--	--	--	--	--	--	--
Total operated area (owned+LI-LO)	--	1.76	3.90	7.77	19.9	--	1.5	4.03	8.14	29.0
Irrigated Area by canal	--	0	0	2	0	--	0	16	0	0

Table 13-7: Irrigation Pattern in Madhya Pradesh

Irrigation Source			Beneficiary					Non-Beneficiary				
			LL	ML	SM	MD	LA	LL	ML	SM	MD	LA
Irrigated Area by tube well	Rented	Electric	--	24	25	19	12	--	35	17	42	16
		Diesel	--	15	10	12	28	--	0	12	9	2
	Owned	Electric	--	34	28	26	38	--	65	24	36	48
		Diesel	--	8	13	14	13	--	0	30	14	16
Irrigated Area by Tanks			--	0	8	5	0	--	0	0	0	0
Irrigated Area by Wells			--	19	17	23	9	--	0	0	0	18
Irrigated Area by others			--	0	0	0	0	--	0	0	0	0
Total			--	100	100	100	100	--	100	100	100	100

Table 13-8: Scheme of income for the Surveyed household

Table: 8 A No. of Households

<i>Source</i>	B ²⁶	NB
Farming	160	40
Horticulture	0	0
Floriculture	1	0
Dairy	57	9
Poultry	2	0
Sericulture	0	0
Agricultural Labour	6	5
Casual Labour	22	7
Salary	6	3
Other	9	3

Table: 8B Percentage of Households

<i>Source</i>	B	NB
Farming	100	100
Horticulture	0	0
Floriculture	1	0
Dairy	36	23
Poultry	1	0
Sericulture	0	0
Agricultural Labour	4	13
Casual Labour	14	18
Salary	4	8
Other	6	8

Table 13-9: Comparison between Profit Levels of the Beneficiaries and Non-Beneficiaries between 2015-16 and 2016-17

	2016-17		2015-16	
	Beneficiaries	Non-Beneficiaries	Beneficiaries	Non-Beneficiaries
Farming	132528	111740	123171	92465
Floriculture	11000		6000	
Dairy	22609	16333	22275	15381
Poultry	2000			
Agricultural Labour	9500			
Casual Labour	29000		29429	
Salary	65867		60533	
Other	30833	29333	19250	24333

²⁶B and NB are the abbreviation for beneficiaries and non-beneficiaries, respectively

Table 13-10: Percentage Increase in income between the beneficiaries and non-beneficiaries over the years of 2015-16 to 2016-17

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	7	6	8	15	8	21
Horticulture						
Floriculture	25	-33	83			
Dairy	2	3	1	2	-2	6
Agricultural Labour	0			0		
Casual Labour	-1	0	-1	-19		
Salary	9	0	9	-62		
Other	44	5	60	24	31	21

Table 13-11: Percentage Increase In Average Expenditure 2016-17 Over 2015-16 (in All Projects)

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	8
Total rent on machinery (tractor, harvester, etc.)	8	12
Expenditure on purchased water for irrigation	9	6
Expenditure on electricity for irrigation	2	4
Expenditure on diesel	9	14
Expenditure on other fuels for agriculture	0	22
Any other	8	8
<i>Total expenditure on agriculture</i>	6	9

Table 13-12 : Average Annual Expenditure for Agriculture (Rs.)

Year	2016-17		2015-16	
Items	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	125316	43000	125556	40000
Total rent on machinery (tractor, harvester, etc.)	21034	17934	19503	15969
Expenditure on purchased water for irrigation	7961	7476	7320	7048
Expenditure on electricity for irrigation	17090	16323	16678	15688
Expenditure on diesel	29500	32353	26958	28353
Expenditure on other fuels for agriculture	4028	3917	4042	3214
Any other	57250	56125	53253	51755
<i>Total expenditure on agriculture</i>	125597	104185	118011	95835

Table 13-13: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project1</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	-8	--
Total rent on machinery (tractor, harvester etc)	6	1
Expenditure on purchased water for irrigation	7	-4
Expenditure on electricity for irrigation	2	2
Expenditure on diesel	5	2
Expenditure on other fuels for agriculture	--	--
Any other	2	8
<i>Total expenditure on agriculture</i>	3	5

Table 13-14: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project2</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	63	---
Total rent on machinery (tractor, harvester etc)	16	25
Expenditure on purchased water for irrigation	5	32
Expenditure on electricity for irrigation	1	1
Expenditure on diesel	6	21
Expenditure on other fuels for agriculture	-2	0
Any other	11	7
<i>Total expenditure on agriculture</i>	9	12

Table 13-15: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project3</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	4	0
Total rent on machinery (tractor, harvester etc)	9	20
Expenditure on purchased water for irrigation	8	-2
Expenditure on electricity for irrigation	2	7
Expenditure on diesel	19	22
Expenditure on other fuels for agriculture	1	22
Any other	2	2
<i>Total expenditure on agriculture</i>	6	6

Table 13-16: Percentage increase in average expenditure 2016-17 over 2015-16

<i>Items project4</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	8
Total rent on machinery (tractor, harvester etc)	2	3
Expenditure on purchased water for irrigation	14	6
Expenditure on electricity for irrigation	5	12
Expenditure on diesel	3	57
Expenditure on other fuels for agriculture	0	-10
Any other	19	18
<i>Total expenditure on agriculture</i>	11	13

Table 13-17: Profile of the Sample in Madhya Pradesh

	Beneficiary	Non-	Total
Total Sample Population	1009	227	1236
% of dependent members (codes 15,16,17)	64	67	65
Age group	<=15	27	24
	>15 to 25	23	26
	>25 to 40	23	20
	>40 to 59	19	20
	>59	8	10
	All Groups	100	100
Education	Illiterate	15	17
	Class 1 to 5	23	17
	Above Class 5 to 8	18	19
	Above Class 8 to 12	29	35
	Above Class 12	5	7
	Other diploma	1	0
	can read and write	5	3
	can read only	0	0
	can count only	0	0
	could not attend class 1	3	2
	All Groups	100	100

Table 13-18: Occupational profile of Madhya Pradesh in percentage

Total Sample Population	Beneficiary	Non-Beneficiary	Total
No. of dependent members	1009	227	1236
1 cultivation	650	152	802
2 agricultural labour	18	18	18
3 dairy	0	0	0
4 casual labour	0	0	0
5 self-employment (specify)	1	2	1
6 salaried employment	1	1	1
7 forestry	0	1	1
8 Horticulture	0	0	0
9 Floriculture	0	0	0
10 Sericulture	0	0	0
11 Fishing	0	0	0
12 Aquaculture	0	0	0
13 Poultry	0	0	0
14 bee-keeping	0	0	0
15 Student	0	0	0
16 housewife	29	29	29
17 non-working	24	23	24
888 others (no separate income)	11	15	12
All Groups	15	11	14
	100	100	100

Table 13-19: Occupational profile of Madhya Pradesh in percentage

Total Sample Population	Beneficiary	Non-Beneficiary	Total
No. of dependent members	1009	227	1236
1 cultivation	650	152	802
2 agricultural labour	18	18	18
3 dairy	0	0	0
4 casual labour	0	0	0
5 self-employment (specify)	1	2	1
6 salaried employment	1	1	1
7 forestry	0	1	1
8 Horticulture	0	0	0
9 Floriculture	0	0	0
10 Sericulture	0	0	0
11 Fishing	0	0	0
12 Aquaculture	0	0	0
13 Poultry	0	0	0
14 bee-keeping	0	0	0
15 Student	0	0	0
16 housewife	29	29	29
17 non-working	24	23	24
888 others (no separate income)	11	15	12
All Groups	15	11	14
	100	100	100

Table 13-20: Percentage wise Asset Distribution in Terms of Value across Beneficiaries and Non-Beneficiaries

	Beneficiaries						Non-Beneficiaries					
	LL ²⁷	ML	SL	MD	LA	Total	LL	ML	SL	MD	LA	Total
% share of the value of the total asset holding	0	17	33	21	29	100	0	1	33	32	35	100

27 LL, ML, SL, MD& LA are the abbreviations for Landless farmers, SL farmers, MD farmers and LA farmers respectively. These abbreviations are used only for tables.

Table 13-21: Asset distribution (number wise, the main agricultural equipment)

	<i>Assets</i>	Beneficiaries					Non-beneficiaries				
		LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
1	Tractor	0	4	17	31	49	0	0	33	33	33
2	Trolley	0	3	11	32	55	0	0	30	30	40
3	Weeder	0	0	0	45	55	--	--	--	--	--
4	Manual/Power Sprayers	0	8	28	40	24	0	9	45	36	9
5	Threshers	0	2	21	43	33	0	0	29	43	29
6	Drier	0	0	0	0	100	--	--	--	--	--
7	Electrical Pump sets	0	11	21	35	33	0	8	52	24	16
8	Diesel Pump sets	0	0	5	46	49	0	0	31	46	23
9	Sprinkler sets/Drip Irrigation Equipment	0	11	7	29	54	0	0	33	33	33
10	Cane Crusher/Agro-processing Equipment	0	100	0	0	0	--	--	--	--	--
11	Leveler	0	0	6	19	75	0	0	25	25	50
12	Fodder Choppers	0	10	27	33	30	0	12	29	35	24
13	Bullock cart	--	--	--	--	--	--	--	--	--	--
14	Harvest Combine	0	0	0	67	33	--	--	--	--	--
15	Others	0	0	50	0	50	--	--	--	--	--

Table 13-22: Number of livestock and their distribution over size class

		Beneficiary					Non-Beneficiary				
		LL	ML	SM	MD	LA	LL	ML	SM	MD	LA
1	Cow	0	13	22	32	33	0	19	33	38	10
2	Buffalo	0	13	24	29	34	0	8	46	15	31
3	Young Stock	0	13	23	33	31	0	17	38	31	14
4	Male Draught	0	0	0	0	100	0	100	0	0	0
5	Sheep	--	--	--	--	--	--	--	--	--	--
6	Goat	0	40	60	0	0	0	0	100	0	0
7	Pig	--	--	--	--	--	--	--	--	--	--
8	Poultry	0	50	0	50	0	--	--	--	--	--
9	Others	--	--	--	--	--	--	--	--	--	--

Table 13-23: Type of Houses

Type all projects	Beneficiary	Non-beneficiary	Total
Kachha	24	30	25
Pucca	46	40	45
Semi-Pucca	30	30	30
Others	0	0	0
Total	100	100	100

Table 13-24: Percentage of households possessing other assets

	Beneficiary	Non-beneficiary
TV	88	63
Telephone	1	0
Mobile phone	98	100
Cycle	47	20
Two wheeler	68	60
Four wheeler	8	13
Refrigerator	30	25

Table 13-25: Growth of Various Indicators of Beneficiaries over Non-Beneficiaries in 2016-17

	Beneficiary	Non-Beneficiary	% Difference in profitability between beneficiary and non-beneficiary
Crop	Profitability	Profitability	
Paddy	78766.7	37603.7	109.5
Wheat	75111.2	52308.1	43.6
Gram	39305.4	32958.8	19.3
MOONG	62592.9	23000.0	172.1
Soyabean	59782.0	61693.4	-3.1
Vegetable 1	126096.9	170000.0	-25.8
Total	15325.5	11441.3	33.9

Table 13-26: Animal Husbandry Component

		2016-17		
			Non-Beneficiary	
<i>Items</i>		Average income	% of Total dairy Income	Average income
Milk		40339.3	96	29222.2
Milk Products	Ghee	6153.8	0	
	Curd	7500.0	0	
Animal sale		3750.0	4	5000.0
Others			0	
TOTAL		40406.8	100	27300.0

Table 13-27: Percentage Change in Average Income between 2016-17 and 2015-16

		% difference in average income of beneficiaries over non-beneficiaries		% change in average income Between 2016-17 and 2015-16	
<i>Items</i>		2016-17	2015-16	Ben	Non-Ben
Milk		38	22	5	-7
Milk Products	Ghee	--	--	3	--
	Curd	--	--	-8	--
Animal sale		-25	138	-61	25
Others		--	--	--	--
TOTAL		48	40	1	-4

Table 13-28: Percentage distribution of People with Awareness about RKVY

	Beneficiary	Non-beneficiary
Have you heard about RKVY?	100	80
Benefits in 2016-17	98	0
Benefits in last 5 years	51	3
Benefits from any other government scheme in 2016-17	64	33
Benefits from any other government scheme in last 5 years	66	33

Table 13-29: Percentage Distribution of source of awareness

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	21	38	24
Newspaper	3	9	4
Agriculture/Horticulture Department	23	6	20
SAU	0	0	0
KVK	3	3	3
Input Suppliers	0	0	0
TV/Radio	1	9	3
Agri. Exhibitions	2	0	2
ZP/GP	47	29	44
Other sources	0	6	1
Total	100	100	100

Table 13-30: Intervention regarding Agricultural mechanization (for beneficiaries)

			Seed drill	Sprayers	Pump set	Sprinkler	Others (specify)
1	No of beneficiaries of RKVY		3	2	6	4	27
2	Number of benefits received		3	2	6	4	27
3	Total Cost (Rs.) (figure in brackets are for per household)		128700 (804.37)	20000 (125)	144000 (900)	63100 (394.37)	1757888 (10986.8)
10	Subsidy amount from RKVY (Rs.)		45000 (281.25)	9000 (56.25)	60000 (375)	26300 (164.37)	630380 (3939.87)
11	Mode of Subsidy Transfer:						
12		Price Subsidy	1	1	5	3	24
13		DBT	2	1	1	1	3
14	If DBT, Number of days taken to receive subsidy?		37.5	30	30	30	30
15	Benefits derived from the implement (Codes Below)						
16	1	Solved labour problem	1				2
17	2	Enabled timely operations		2	4		25
18	3	Saved water				4	1
19	4	Helped in controlling weed					
20	5	Helped in good plant growth	2		3	4	2
21	6	Reduced Drudgery	1	1	1		25
22	7	Helped in transportation					
			Seed drill	Sprayers	Pump set	Sprinkler	Others (specify)
23	8	Reduced cost of Cultivation	2	1	1		3
24	9	Increased cropping intensity		1	2	3	1
25	10	Not useful					
26	Subsidy received from any other scheme						
27	Subsidy not received from any other scheme		3	2	6	4	27
28	If subsidy not received, number of households who have said who would buy this implement		1	1	3	1	1
29	If subsidy not received, number of households who have said who would not buy this implement		2	1	3	3	26

Table 13-31: Intervention regarding Agricultural mechanization (for Non-beneficiaries)

			Seed drill	Sprayers	Pump set	Sprinkler	Others (specify)
1	No of non-beneficiary of RKVY in the sample		0	0	7	0	0
2	Total Cost (Rs.)				196500 (4912.5)		
3	Amount financed by loan (Rs.)				84000 (2100)		
4	Source of Credit						
5		Bank			1		
6		MFI					
7		Money lender			2		
8		Other			3		

Table 13-32: Percentage Distribution of Households by types of benefit

		Seeds and Planting Materials		Fertilizers	Micronutrients	Bio-fertilizers and bio-control agents	Pesticides	Others	Total
		Crop1	Crop2						
	LL	--	--	--	--	--	--	--	--
	ML	70	10	10	0	0	10	0	100
	SL	90	0	0	10	0	0	0	100
	MD	80	20	0	0	0	0	0	100
	LA	82	18	0	0	0	0	0	100
	Total	80	14	2	2	0	2	0	100
Non-Beneficiary	LL	--	--	--	--	--	--	--	--
	ML	12	14	14	15	15	14	15	100
	SL	12	15	15	14	15	15	15	100
	MD	11	14	15	15	15	15	15	100
	LA	12	14	15	15	15	15	15	100
	Total	12	14	15	15	15	15	15	100

Table 13-33: Subsidy on the Major Items and Number of Households In Each Land Category

<i>Seed</i>	Crop1				
	Number of Beneficiaries	Actual cost	Subsidy received		
			Kg	Rs.	Average Subsidy per hhld
LL					
ML	7	17875	550	3500	500
SL	9	32350	1000	5450	606
MD	16	73500	1990	14700	919
LA	9	30800	1050	5900	656
Total	41	154525	4590	29550	721
<i>Seed</i>	Crop2				
	Number of Beneficiaries	Actual cost	Subsidy received		
			Kg	Rs.	Average Subsidy per hhld
LL					
ML	1	3150	50	500	500
SL	0				--
MD	4	38100	600	3600	900
LA	2	12600	300	2000	1000
Total	7	53850	950	6100	871
<i>Fertilizer</i>					
LL					
ML	1	1250	50	200	200
SL					
MD					
LA					
Total	1	1250	50	200	200
<i>Micronutrients</i>	Number of Beneficiaries	Actual cost	Subsidy received		
			Kg	Rs.	Average Subsidy per hhld
LL					
ML					--
SL	1	1250	50	150	150
MD					--
LA					--
Total	1	1250	50	150	150
<i>Pesticides</i>	Crop1				
	Number of Beneficiaries	Actual cost	Subsidy received		
			Kg	Rs.	Average Subsidy per hhld
LL					
ML	1	400	150	150	150
SL					--
MD					--
LA					--
Total	1	400	150	150	150

Table 13-34: How Did You Use The Amount Saved By The Intervention? (% of Farmers)

		Crop1	Crop2	Fertilizers	Micronutrients	Pesticides
1	Used more of the same input for which subsidy/transfer was provided	2	0	0	0	0
2	Used more of other inputs for which subsidy/transfer was provided	15	0	0	0	0
3	Used for other expenses in agriculture	76	71	100	100	100
4	Used as non-agriculture expenses	5	14	0	0	0
5	Did not use	2	14	0	0	0
	Total No of beneficiaries	100	100	100	100	100

Table 13-35: Soil testing

	Soil Tested	Soil Health card Issued	Place of Soil Test		
			Govt. Inst.	Private. Inst	Don't Know
LL					
ML	16.7	13.3	20.0	--	8.3
SL	24.4	23.3	21.8	--	33.3
MD	28.2	33.3	23.6	--	37.5
LA	30.8	30.0	34.5	--	20.8
Total	100	100	100	--	100.0

Table 13-36: Other Information regarding RKVY

				Type of Training				
	Number of Beneficiary	Undergone Training	Average number of days of training	Demo	Field	Krishi Mela	% of Household who found it beneficiary	% of household who want more Training
LL		--		--	--	--	--	--
ML	18	100	1.3	100	0	0	47	65
SL	27	100	1.2	100	0	0	68	80
MD	29	96	1.3	96	0	0	58	81
LA	27	100	1.2	100	0	0	68	84
Total	100	100	1.2	99	0	0	61	78

Table 13-37: Constrains faced in availing RKVY benefit

	No. Beneficiaries						No. of Non-beneficiaries					
	LL	ML	SL	MD	LA	Total	LL	ML	SL	MD	LA	Total
Information about RKVY programme details not easily available	0	22	21	28	28	100	0	10	45	28	17	100
Contact details of the department which pay subsidy not available	0	15	23	30	31	100	0	16	42	26	16	100
Eligibility or criteria for availing the subsidy not known	0	18	20	32	28	100	0	15	50	25	10	100
Procedure for the subsidy very tedious	0	24	21	26	29	100	0	21	44	30	4	100
No of documents required for availing subsidy are too many	0	18	27	26	29	100	0	26	35	26	13	100
Subsidy paid after purchase while initial payment remains the highest problem	0	18	24	33	24	100	0	17	42	27	12	100
Delay in transfer	0	21	21	33	24	100	0	15	45	27	12	100
Prescribed machinery/asset not easily available in the market	0	21	26	24	29	100	0	5	60	25	10	100
Institutional financing facility not available	0	16	30	32	22	100	0	16	46	21	16	100
Capacity building/technical advice not provided	0	24	22	30	23	100	0	10	37	42	10	100
Long time gap between the purchase and receiving the subsidy amount	0	22	24	33	21	100	0	7	39	36	17	100
Biased towards LA land owners	0	24	21	24	30	100	0	12	44	28	16	100
Poor quality of materials/machinery are supplied	0	20	30	25	25	100	0	27	27	40	7	100
Implementing agencies are located far away	0	14	32	30	24	100	0	14	50	23	14	100
Incidence of bribery	0	22	19	31	27	100	0	17	39	28	17	100
Lack of monitoring	0	21	25	29	25	100	0	18	41	29	12	100
Complementary inputs not available	0	18	24	33	25	100	0	10	48	28	14	100
Restricted choice	0	21	24	31	23	100	0	14	43	32	11	100
Lack of marketing support	0	21	26	35	18	100	0	17	43	26	14	100
Any other (specify)	--	--	--	--	--	--	--	--	--	--	--	--

Table 13-38: Response of the Beneficiaries regarding RKVY

Employment Generation			Building Infrastructure	
Marginal	12.6		Marginal	13.8
Small	22.8		Small	17.9
Medium	19.0		Medium	17.7
Large	22.8		Large	15.4
Total	19.8		Total	16.5
Increase in Production			Capacity Building	
Marginal	23.0		Marginal	12.6
Small	30.1		Small	17.9
Medium	26.5		Medium	12.9
Large	26.0		Large	15.4
Total	26.7		Total	14.8
Improving Marketing Facility			Post Harvesting Storage	
Marginal	14.9		Marginal	5.7
Small	26.0		Small	10.6
Medium	20.4		Medium	12.9
Large	24.4		Large	13.0
Total	21.9		Total	11.0
Better Price Realization			Procurement	
Marginal	20.7		Marginal	14.9
Small	29.3		Small	21.1
Medium	20.4		Medium	19.0
Large	21.1		Large	15.4
Total	22.9		Total	17.9
Financial Assistance				
Marginal	13.8			
Small	21.1			
Medium	19.7			
Large	19.5			
Total	19.0			

Table 13-39: Project Details for implementing agency survey

Sl. No.	Project Name	Implementing agency
01	Construction of Agriculture Solution Centres	Madhya Pradesh Rajya Sahakari Vipanang Sangh, Jhabua , MP
02	Establishment of Composite Nursery for Expansion of area under SRI	DDA Betul, MP

Table 13-40: General Information regarding the implementing agency

Issues\ Projects	Construction of Agriculture Solution Centres
Type of construction	Marketing Sheds
New construction/Improvement of an older construction	New
Awareness about DAP	Yes
Included in DAP	Yes
Project proposed by	Implementing Agency
Level at which the project was proposed	State

Table 13-41: Fund Flow in the project

Issues\ Projects	Construction of Agriculture Solution Centres
Funds required for the project in 2016-17	3566.08 lakh
Funds approved for the project in 2016-17	3566.08 lakh
Funds released for the project in 2016-17	3066.08 lakh
Number of times funding released for the project in 2016-17	3
Major problems in the release of funds	Uncertainty in amount released

Table 13-42: Physical Capacity of the projects

Issues\ Projects		Construction of Agriculture Solution Centres
Required physical capacity of the selected work. (in numbers)		No answer
Existing physical capacity excluding the current project.		No answer
Capacity of current project. (numbers)		No answer
Number of phases in the project		4
In case of multiple phases, ways for management of funds		Provisions for fund in phased manner in RKVY
Fund management across the phases	Phase 1	4
	Phase 2	4
	Phase 3	4
	Phase 4	Supplement from other projects within RKVY

Table 13-43: Tendering & Maintenance regarding the project

Issues\ Projects		Construction of Agriculture Solution Centres
Whether tender was called for execution of the work		Yes
e-tender issued		Yes
Opinion: e-tendering increases efficiency of tendering		Yes
Opinion: e-tendering increases transparency		Yes
Opinion: e-tendering has increased number and quality of responses from vendors		Yes, increased both quality and number of vendors
Number of days given to respond to tenders		31
Number of vendors responded to the tenders		No Answer
Method for evaluating the tenders		Technical criteria and financial criteria
Any re-bidding made		No
Reasons for re-bidding		Did not meet technical criteria
Selected vendor a Government / Private Organization		Govt
Whether selected vendor worked with the agency before		Yes
Agency responsible for the maintenance of the constructed project in future years		Your own agency
If same agency, whether any financial provision is there in the project for maintenance in future		2018-19

Table 13-44: Benefits and Challenges regarding the projects

Issues\ Projects		Construction of Agriculture Solution Centres
Number of farmers expected to be benefitted from the construction	2017-18	No Answer
	2018-19	No Answer
	2019-20	No Answer
Beneficiaries from the project other than the farmers		Govt, Pvt, Co-operative, Other
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Warehouse, Marketing Sheds, Cold-storage, , Soil-testing, Demonstration unit, Rural roads, Extension / training services, Developing co-operatives, FPO s, WUA s , Rural electrification Stable power supply
Project needs enhancement / improvement		Yes
Problems associated with the existing project		Financial
Opinion: the project will complete in stipulated time		No
Reasons for delay in project		No
Whether infrastructure is geo-tagged?		Yes
Reasons for not being geo-tagged		Non-availability of smart phone

Table 13-45: Convergence with other projects

Issues\ Projects	Construction of Agriculture Solution Centres
Whether any convergence with other schemes	No

Table 13-46: General information about implementing agency for community and services project

Issues	Establishment of Composite Nursery for Expansion of area under SRI
What is the type of collective activity is undertaken in the project?	Collective farming
What is nature of benefits expected from the project?	Better input supply
At what level, was the project was proposed?	District

Table 13-47: Fund Flow

Issues		Establishment of Composite Nursery for Expansion of area under SRI
Funds required for the project in 2016-17		345.3
Funds approved for the project in 2016-17		337.9
Funds released for the project in 2016-17		337.9
How many times the funding was released for this project in 2016-17?		3
What are the major problems related to release of the funding?		Delayed release
How many phases are needed?		1
If there are multiple phases, then how the funds are managed across the phases?		
If there are multiple phases, how the project is designed to fulfil the physical target?	Ph1	Yes
	Ph	Yes
	Ph3	Yes
	Ph4	Yes

Table 13-48: Benefits and Challenges

Issues		Establishment of Composite Nursery for Expansion of area under SRI
How many farmers are expected to get benefit from the activity?	1. 2017-18	5000
	2. 2018-19	6000
	3. 2019-20	8000
Apart from farmers, who are the other beneficiaries from the project? (Multiple options might apply)		No
Is the collectivization effective?		Yes
If not, what are the reasons?		No
Is there any convergence with other schemes?		No
If yes, then what is the scheme?		No
How is this convergence achieved?		No

14 MAHARASHTRA

Maharashtra is the third biggest state of the Indian Union (with a geographical area of 307.58 lakh hectare. This state consists 36 districts and occupies 9% of India's total area (Agriculture Maharashtra)²⁸. In terms of population it is the second (only next to Uttar Pradesh) most populated state with 11.32 crore population (census 2011). It is bordered by the Arabian Sea to the west and the Indian states of Karnataka, Telangana, Goa, Gujarat, Chhattisgarh, Madhya Pradesh, Dadra and Nagar Haveli.

Maharashtra is the state with highest Gross State Domestic Product (Planning Commission²⁹). Agriculture is the major economic activity in this state, almost 13% of the GSDP is contributed by agriculture and allied services. According to NSSO data (2004 and 2005) with 69.8 % of the total workers and 85.6 % of the workers in rural areas are dependent on agriculture for livelihood (Census, 2011). The cultivated area (17.43 million hectare) is about 80% of the total geographical area and the irrigated area is about 17% (2.94 million hectare). Maharashtra produces 5% of the total cereals 16% of the total pulses 20% of the total cotton and 19% of the total sugarcane of India³⁰. It may be noted that 148 talukas of 25 district (159 lakh hectare or 52% total land) of Maharashtra is drought prone zone. (Agriculture Maharashtra)

Maximum farmers in Maharashtra come from marginal farming size class (53.06 lakh farmers constituting 43.71% of total number of farming population). Small and semi-medium farmers account for 29.71% and 18.73% respectively. Medium and large farmers are 7.13% and 0.72% of the total farming population.

28 Agriculture Maharashtra. Source: rkvy.nic.in/static/download/strategy/Maharashtra.ppt Accessed on 1st July, 2017

29 Planning Commission Data Base
Url: http://planningcommission.nic.in/data/datatable/data_2312/DatabookDec2014%2067.pdf accessed on March 2017

³⁰ Source: <http://www.icar.org.in/files/state-specific/chapter/79.htm>

Rashtriya Krishi Vikas Yojana, in Maharashtra begun in 2007-08. From that year to 2014-15, central government has provided 100% funding to the selected agriculture based projects to improve the agriculture situation in Maharashtra. In 2015-16, the assistance was reduced to 60:40% for centre and state. Under this scheme, central government has allocated Rs. 483.11 Crore for Maharashtra in 2015-16.

Table 14-1 gives a detailed list of the projects undergoing in the current financial year in Maharashtra. Here it would be important to note that horticulture and animal husbandry are the two most prioritized projects for Maharashtra in the present financial year. It has been noted that after implementation of RKVY, pulse production in Maharashtra has started coming down, whereas the vegetable production has increased.

Before discussing the results of our sample survey, we will briefly look into some of the agricultural growth patterns of the state. Table 14-2 provides trends and patterns of agricultural production of the Maharashtra, over post-RKVY and pre-RKVY periods.

The first section of the table AGDSP is 16% more than the pre-RKVY AGDSP. On the other hand, the second block (Table 14-2) shows that AGDP growth trends in Maharashtra, after various zig-zag movements have started settle for a steady and positive growth in the post-RKVY period. It is worth mentioning that the trend growth of agriculture and allied services has increased to 12.27% from 10.20% of the pre-RKVY period.

The first block of Table 14-2 shows the periodic yearly average of AGSDP of Maharashtra over the periods of pre and post-RKVY. For the period of 2004-05 to 2007-08, the AGSDP average was 3315390 lakh rupees, which increased to 4054184 lakh rupees during the period of 2008-09 to 2011-12. For the period of 2012-13 to 2014-15, the yearly average of AGSDP was 6504572 lakh rupees. If we re-define the time line as pre-RKVY and post-RKVY periods, we can see that pre-RKVY AGSDP yearly average was 3315390 lakh rupees, which became 5104350 lakh rupees in the post-RKVY period. The percentage difference between post-RKVY and pre-RKVY periodic average growth rate was 54%.

In the second block of Table 14-1, Trend growth rates of pre- and post-RKVY is shown in the second block of this table. The trend growth rate for the period of 2004-05 to 2007-08 was

12.48% which became 7.40% during the period of 2008-09 to 2011-12. For the period of 2012-13 to 2014-15 the trend growth rate was -0.73%. During the pre-RKVY period of 2004-05 to 2007-08, the trend growth of AGDSP was 12.48%, but it came down to 3.49% and during post-RKVY period of 2008-09 to 2014-15.

In the third section of Table 14-2, growth rate and patterns of agriculture and allied sector has been discussed. During the pre-RKVY period the yearly average value of agriculture and allied sector were 8024056 lakh rupees. In the post-RKVY period it became 853567 lakh rupees. The percentage difference between the values of post-RKVY period over pre-RKVY period was 6.10%. The trend growth rate of agriculture and allied sector during pre-RKVY period was 10.20% and post-RKVY period was 12.27%

Table 14-3 presents some of the basic land use score of Maharashtra for pre and post-RKVY period. It shows that net sown area has grown by -0.9% (actually shrunk), total cropped area grew by 1.05% and gross irrigated area have grown by 6.50% and cropping intensity have grown by 18%.

14.1 RESULTS FROM PRIMARY SURVEY

14.1.1 RESULTS FROM HOUSEHOLD SURVEY

In our study, we have considered 10% of the projects for the state and analysed the performance of RKVY in Maharashtra. The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefiting the cultivators.

In our sample of 100 households, 80 households are beneficiaries and 20 are non-beneficiaries. Total number of population covered is 495, of which 406 were beneficiaries and 89 were non-beneficiary households.

Table 14-5 and Table 14-6 present a size class wise breakup of the respondents interviewed during the survey. It may be noted that none of the respondents were from landless farmer

category. In case of large farmers, no one was interviewed from the non-beneficiary category. Table 14-6 shows the project wise details of our sample design.

14.1.1.1 LAND AND IRRIGATION

Land is an important factor input for agriculture. The table below describes the land holding of different size class farmers over beneficiaries and non-beneficiaries.

In all of the cases the beneficiaries have responded to have possessing more land, than their counterparts of the non-beneficiary. All categories of farmers were simultaneously leasing in and leasing out lands. Nut the medium-size farmers from the beneficiary category was found to lease out lands at very higher rate than the rest of the size classes.

Table8 tabulates the irrigation usage pattern of the respondents of our survey. Irrigation by Tanks, or wells was completely confined to the beneficiaries. The beneficiaries have a greater access to irrigation by rented tube well. Its only the marginal farmers from non-beneficiary category who have reported to have used this mode of irrigation. None of the non-beneficiaries reportedly used rented diesel engine driven tube-wells. None of the non-beneficiaries reported to have accesed methods like irrigation by tanks and wells.

14.1.1.2 INCOME: TOTAL AND PROJECT WISE

Income is one of the best measures to measure impacts of a project. And its not only the amount of income, but also the diversification of income sources too is very important for agricultural household to maintain a steady state of income, as agricultural outputs often get impacted by unforeseen and uncertain consequence. Creating and broadening the scope for diversification of income sources was one of the objectives in RKVY. Here in this section we will assess the response patterns found in our survey to gauge the impact of RKVY in diversification of income sources for agricultural households.

Table 14-9 shows the beneficiary and non-beneficiary wise distribution of household according their varied sources of income. Highest number of respondents among both beneficiaries and non-beneficiaries reported dairy as their profession (after agriculture, since the survey was conducted among agricultural households only). However, a higher percentage of beneficiaries

reported to be engaged with dairy. Both beneficiaries and non-beneficiaries are engaged in multiple sources for their earning. Almost all the income sources mentioned in Table 14-9, are showing considerable frequency of respondents. This phenomenon, not so common in other states may be interpreted as an indicator of existence of diversified income sources for agricultural population in Maharashtra.

14.1.1.3 AVERAGE INCOME:

In this section we will concentrate on the amount of income and profit are for the beneficiaries and non-beneficiaries.

There is a visible increase in the profit of both beneficiaries and non-beneficiaries.

Table 14-8 shows the trajectory of the major indicators like income and expenditure and profit. it is evident that profit margin for all the trades (listed in Tables 8 and 9) has increased during this period between 2015-16 to 2016-17. But quite strikingly, the profit growth rate for the beneficiaries is much lesser than the non-beneficiaries, as far as farming is concerned. When looked for further details, it is found that, though RKVY beneficiaries responded to have experienced considerable less growth in cost than that of the non-beneficiaries, the growth rate of the income of the non-beneficiaries has far more surpassed the income of the beneficiaries.

For respondents engaged in dairy, the beneficiaries have done better. their responses record for 31% growth in average profit whereas the non-beneficiaries responded to have negative growth in both income and profit.

On the other hand, in case of non-beneficiaries, it was farming where they received highest growth in their profit. The profit growth of the non-beneficiaries is higher than that of the beneficiaries; despite the fact that the cost of farming has grown faster for the non-beneficiaries (14%) than that of the beneficiaries (9%).

14.1.1.4 ANNUAL EXPENDITURE ON AGRICULTURE (TOTAL AND PROJECT WISE)

Rising agricultural cost has been one of the major cause of concern over the last few years. Increasing spirals of expenditure in agriculture often dampen the profit and income of farmers, despite decent production and expected prices. This section attempts to trace the impact on agricultural production on beneficiaries and non-beneficiaries of RKVY.

Table 14-12 depicts the growth in expenditures over different heads between beneficiaries and the non-beneficiaries over the financial year of 2015-16 and 2016-17.

The expenditure shows a strange pattern in this case. In case of rent on leased-in lands and total rent of machinery the non-beneficiaries report a drastic reduction in expenditure. Whereas, in all other heads, the cost growth for beneficiaries much lesser than that of non-beneficiaries. The second phenomena, as commonly seen in the cases of other states as well could be understood in the light of the fact that RKVY has assisted them to reduce their cost over the period of time. But this argument does not seem to work with equal consistency in the case of drastic cost reduction in the case of rent on leased-in lands or total rent on machinery. Another interesting part is, the beneficiaries having reported considerably steeper rate of hike in fuel expenditure.

Table 14-13, describes the scenario, with slightly more elaboration and nuance. This table also helps us to understand the discrepancy of drastic decrease in expenditure in first two heads. In 2015-16 the average expenditure for rent of leasing in was 1 lakh rupees a year, which was cut the following year by almost half, to Rs. 52,000. This may have been caused by decrease in lease in rate or people deserting agriculture as their occupation. Similarly, the average spending of Rs. 11226 on rent on machinery was also reduced to Rs. 8842.

Now, for further details, the project wise expenditure has been shown below in Table 14-14.

For project 1, total expenditure growth for beneficiaries was much higher than for beneficiaries. Total expenditure for beneficiaries grew at 3% but at-7% for non-beneficiaries; or, income for non-beneficiaries dropped. But, for project 2, the expenditure of beneficiaries have grown at a slower rate than the non-linearities.

14.1.1.5 HOUSEHOLD ROSTER:

Of the one hundred households surveyed, 80 were beneficiaries of the RKVY project and 20 were those who were not. In terms of the total population, it was 406 beneficiaries and 89 non-beneficiaries that were surveyed during the study. Table 14-14 gives a brief description about the main characteristics of the sample size.

14.1.1.6 AGE GROUP-WISE CLASSIFICATION

Here, in the case of Maharashtra, maximum respondents were from the age group of 25-40 only 5% of the respondents from beneficiaries and 7 % from the non-beneficiaries responded to be dependent upon their household. Highest number of respondents was from the age group of 25-40 (29% for beneficiaries, and 30% for non-beneficiaries)

14.1.1.7 CLASSIFICATION ACCORDING TO EDUCATIONAL LEVEL:

Highest number of respondents both in the case of beneficiaries and non-beneficiaries were found to be educated between 8th to 12th standard. Almost 42% of the beneficiaries were from this educational group, whereas 39% of the non-beneficiary respondents were from this category; while considerable numbers of the respondents were found to be illiterate. (11% and 7% for the beneficiaries and the non-beneficiaries, respectively).

14.1.1.8 ASSET OWNERSHIP

Asset creation and capital accumulation in the rural and farm sector is one of the primary stated objective of RKVY. The survey attempted to trace this impact. Here the following few tables conjures up following findings:

Before moving further, it should be noted that, in case of this state, none of the non-beneficiary respondents were from large farmers category; this problem may create some biases while commenting on the rest of the scenario. With this handicap in consideration, it can be observed that beneficiaries from marginal farmers have reported to have more assets than those from the non-beneficiaries In the study questions were asked regarding possession of the agricultural instruments like tractor, trolley, weeder, power sprayer etc. When compared in terms of

numbers, for tractors, the distribution of assets were perfectly in line with the size of land holding.

ML farmers (from beneficiary segment) were found to be holding 13% of all tractors possessed by the beneficiaries (Table 14-15). This is the size class of farmers that seems to have benefited most from the RKVY, as far as asset creation is concerned. The counterpart of this segment from the cohort of non-beneficiaries is reportedly holding no wealth at all. Similar are the observation of asset distribution of trolleys and weeder, threshers and driers. In case of capital assets like manual/ power Sprayers, Electrical pump sets, and Sprinklers & Drip irrigation equipment, the marginal farmers from the non-beneficiaries have done better than the beneficiaries.

14.1.1.9 DISTRIBUTION OF LIVESTOCK AMONG THE FARMERS:

Dairy and animal farming has been reported to be one of the major sources of secondary income by the respondents. Livestock possession can be one of the important indicator in this regard to measure asset possession. Much like agricultural assets, livestock too is found to be unevenly distributed in the favour of higher size class farmers (Table 14-16). But, in case of non-beneficiaries, the livestock possession is more intensely concentrated around the bigger farmers.

Big animals like cow and buffalo are more than proportionately possessed by the medium and larger farming households. However smaller / cheaper animals like goat and poultry are more likely to be possessed by the lower bracket of farmers (ML to MD size farmers). The LL farmers are found to have not a single animal irrespective of beneficiary or not.

14.1.1.10 TYPE OF HOUSE:

Higher proportion of beneficiaries responded to own pucca houses in comparison to the non-beneficiaries (65% versus 35%) (Table 14-17). The trends shown in the table below remain more or less unaltered when we look at the project wise details. On the other hand, higher percentage of non-beneficiaries has reported to own Kachha houses.

14.1.1.11 OTHER ASSETS:

The beneficiaries, according to the survey, evidently, possess more assets than the non-beneficiaries (Table 14-18). It can be interesting topic to investigate causality of relationship between comparative affluence of the beneficiaries over the non-beneficiaries. The survey had collected the data on assets at project wise disaggregated level too. But since, the trend remains unaltered, detailed description of the projects are being avoided for now.

14.1.1.12 CROP DETAILS

For most of the crops, the beneficiaries have distinctively reported higher profitability over the non-beneficiaries. In case of wheat and gram the beneficiaries responded to have 106% and 103% more profitability than the non-beneficiaries respectively (Table 14-19).

14.1.1.13 PERCENTAGE DISTRIBUTION OF HOUSEHOLD ACCORDING TO SOURCE OF INCOME (ANIMAL HUSBANDRY COMPONENT)

Upon inquiring the dairy related share of secondary income, milk was found out to be commodity to be produced both by the beneficiaries and the non-beneficiaries. The dependence on milk as secondary source of income was found to be slightly bigger in the case for the non-beneficiaries, whereas the beneficiaries have responded to have opted for few other trades.

Table 14-20 depicts the growth rate of dairy products as secondary source of income. The last two columns of the table show the growth of dairy products of the beneficiaries and non-beneficiaries over the time period of 2015-16 to 2016-17. And the two columns preceding it contain the growth figure of the share of dairy product as a component of secondary income for the mentioned years for beneficiaries over non-beneficiaries.

It can be seen that the income of beneficiaries have grown faster for livestock in 2016-17 than 2016-16 (Table 14-21). The last two columns show us that beneficiaries' income have grown on a higher rate than the non-beneficiaries from sources like milk, manure, dung cake and animal sales. No doubt, in both the comparisons the beneficiaries grown faster over the non-beneficiaries and over the years.

14.1.1.14 AWARENESS ABOUT RKVY:

Awareness is one of the key components for generating desired result of any government run programme. RKVY seems to have succeeded that yardstick for Maharashtra. Almost 60% of the non-beneficiaries and obviously all the beneficiaries the respondents have acknowledged to have been in knowledge of the project. Table 14-22, shows that all the beneficiaries have acknowledged that they benefited because of RKVY in the present year. 63% of them accepted of long term beneficiary impact.

When asked about their source of information (Table 14-23), about the project; 42% replied to have known about RKVY from Agriculture or Horticulture department (49% from beneficiaries, but none of the non-beneficiaries). Maximum number respondents from the cluster of non-beneficiaries, responded to have known about RKVY from their friends or other informal sources. Gram Panchayat and Zila Parishad were source of information for another 33% of the beneficiaries.

14.1.1.15 INTERVENTION REGARDING SOIL TESTING

The response was mixed when the respondents were asked about regularity of the soil testing. The non-respondents reportedly found to be more under the coverage of soil testing than the beneficiaries (Table 14-24). And all those responded to have their soil tested, got the soil health card issued. According to the respondents its government institutions to have tested the soil.

14.1.1.16 OTHER INFORMATION REGARDING RKVY:

All the respondents from the category of beneficiaries, reported to have gone through training (Table 14-25). In all these cases the trainings were of one day. In most of the cases, the training took place by demonstration (76% for the marginal farmers, 81% for the small farmers, 53% of the medium farmers, and 89% of the large farmers). The respondents from higher size echelon reportedly were more benefited from the training programmes. The average training period was reported to be 1 day. 85% of the beneficiaries who received training found the training useful, 81% of those who got training expressed their will to join if more training programmes are offered.

14.1.1.17 INFORMATION REGARDING RKVY:

This section collects information about the respondents' perception about accessibility of RKVY scheme. Expectedly, the beneficiaries found it more easily accessible than the non-beneficiaries. If we look further, within the beneficiaries, we can find that higher size class farmers having a better edge in accessing information. Table 14-26 show the response pattern of the farmers when they were asked about the hurdles they faced in RKVY. The non-beneficiaries found accessing information regarding RKVY more difficult than the non-beneficiaries. At the same time, within the cohort of beneficiaries, respondents from medium land holding found it more difficult to access information about RKVY.

14.1.1.18 EVALUATION OF RKVY:

Farmers were asked about their feed backs during the survey. The Table 14-27A and Table 14-27B record the size class wise and beneficiary non-beneficiary wise responses of the farmers on various dimensions of RKVY. The first cell of each block of the table below describes the questions asked to the farmers during survey. According to beneficiaries RKVY had a commendable impact in improving production, price realization, financial assistance and procurement of commodities. Very few respondents were found to be satisfied with RKVY's role in terms of building infrastructure, capacity building and post harvesting storage.

14.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

In Maharashtra, four projects were chosen for collecting information from implementing agencies. Amongst chosen projects, two projects are of nature of construction, one project of nature of extension and training, one project of nature of community and services (Table 14-28). In both the projects of category of construction, cold-storage was built up. Demand for both projects came from block level indicating local needs of cold-storage (Table 14-29).

Table 14-30 shows details of fund flow in the construction projects. For both of them, 100% of required fund was approved and released in 2016-17. Table 14-31 highlights the required physical capacity that the project aims to achieve and the contribution of the projects in attaining

that. For first project, required capacity is ripening chamber of 100 MT, pre-cooling facility of 5 MT, civil work of cold storage of 25 MT, and 2 pack houses. For second project, required capacity is precooling facility of 5MT/6Hr, cold storage of 100MT, pack house, and flower grading line.

For both the projects, tender was called for execution of the work. For the project “Pre-Cooling Ripening and Cold Storage Facility for Banana at Indapur”, e-tender was not issued, but for “Flower Export Facility Project”, e-tender was issued. Respondent for second project has opined that e-tendering improves the efficiency of the tendering process. For both projects, both technical and financial criteria were considering in evaluating the tenders. Selected vendor was private agencies for both the cases (Table 14-32).

In the first project, about 3000 farmers benefited while about 257 farmers benefited from the second project in 2016-17, as is reported by respondents. From these projects, FPOs and local traders could also get benefit apart from farmers. Complementary/supplementary projects for the ongoing projects could be cold storage and government procurement center (Table 14-33). There does not appear any convergence of these projects with other schemes (Table 14-34).

In the chosen project related to the category of extension and training, implementing agency is KVK Baramati. In the survey, implementing agency representative informed that the project was proposed by the nodal agency and the project was designed at district level (Table 14-35). It is observed from Table 14-36 **Error! Reference source not found.**that funds are quarterly released and reduced amount was observed as the major problem in implementation of the project. The project hired workers and availed infrastructure as per their requirement for 2016-17 (Table 14-37). Personal visit, both digital and print media, pamphlet, field demo, farmer field schools were found the main mode of campaign for the project. In year 2016-17, about two lakhs farmers benefited from this project. Implementing agency of the project expects significant increase in outreach to farmers in upcoming years. It estimated that about four lakh farmers will get benefit from this project by 2019-20. Co-operatives, FPO's, Local traders, Local Government, SHG's are the expected beneficiaries from the project other than the farmers (Table 14-38). According to the representative, developing seed banking, soil testing, research labs, demonstration, trainings centers and FPO's could be complementary/ supplementary

projects here. It has been realized that this project has strong convergence with other schemes in both technical and financial ways. The project was found converged with other centrally sponsored schemes like NABARD, ATMA, National horticulture mission etc (Table 14-39).

The project selected for from the category of community and services was Strengthening Primary Societies under Apex Partnership of Agricultural Marketing Societies. In this project, collective activity was promoted. It benefits farmers through lower cost of inputs, higher production due to pooling resources, and improved bargaining ability (Table 14-40). Demand for this project came from gram panchayat level. Table 14-41 shows fund flow in the project. Reduced amount is the major problem for the project. Table 14-42 shows the benefits and challenges for the project. The project is aimed to benefit Cooperatives, FPO's apart from farmers in 2016-17. Number of beneficiary farmers reported by implementing agency is about 2400 in 2016-17.

14.2 CONCLUSION

Maharashtra has proposed projects with cost 77.68 Crores in 2016-17. No project is proposed in very small-sized project (cost < 1 crore) category and small size category (cost 1 to 5 crore). In the medium-size category (cost 5 to 10 crore), important sector is crop development and fertilizer. For large projects with cost 10 to 25 crore, priority area is animal husbandry, horticulture and sericulture. No project is proposed with cost more than 25 crore. So small projects are dominated by crop development and fertilizer and large projects are by animal husbandry, horticulture and sericulture in 2016-17. In aggregate, up to the date the data was accessed, five projects are pointed out which needs funds from RKVY in 2016-17, among which horticulture is given highest priority in terms of cost. In terms of number of projects, five projects are from five different sectors.

Among these projects two were selected, namely Promotion of Hybrid Pigeon Pea (ICIH 2740) through production program, and integrated management of Control of leaf blight disease.

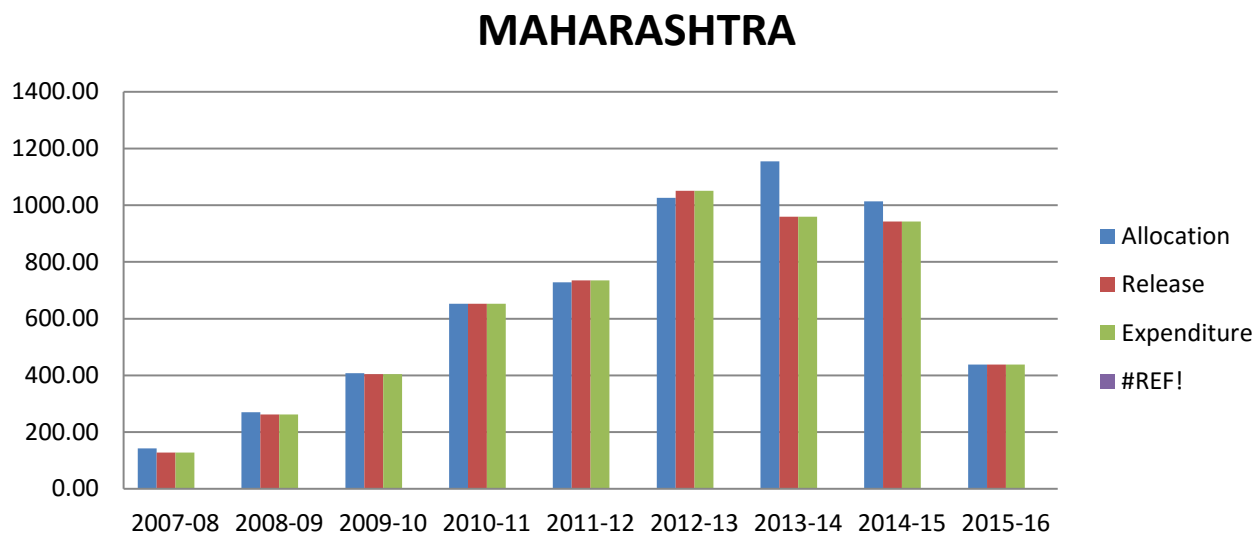
Average annual income of the sample beneficiary households in aggregate is Rs. 332500 in Maharashtra while the same for non-beneficiary households is Rs. 242750 in 2016-17. Average

annual income for beneficiary households was Rs. 293813 in 2015-16 while it was Rs. 204000 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households is higher than non-beneficiary households. Major sources of income are farming, dairy, poultry, agriculture labour work, casual labour work apart from salary. It is evident from the study that RKVY has intervened successfully in some aspects of agriculture in Maharashtra. In our sample, the beneficiaries got help from RKVY in seeds, training and demonstration and soil testing.

According to the respondents RKVY had a commendable impact in improving production, price realization, financial assistance and procurement of commodities. Very few respondents were found to be satisfied with RKVY's role in terms of building infrastructure, capacity building and post harvesting storage.

The program needs some publicity so that farmers are aware of the benefits and can gain from it. The programme should also invest in generating employment, building infrastructure and procurement in agriculture in Maharashtra. In our study, it is found that beneficiary households have faced problem in subsidy paid after purchase while initial payment remains the highest problem, Restricted Choice and Delay in transfer as major constraints. Marginal farmers felt that the program is biased to large landowners; they are also facing the problem in lack of monitoring, lack of marketing support, Restricted Choice and Information about RKVY programme details not easily available and unavailability of contact details of department or lack of information regarding Eligibility or criteria for availing the subsidy.

Figure 14-1: Allocation release and Expenditure of RKVY funds in Maharashtra (unit: crore Rupees)



Source:Source: RKVY website³¹

Table 14-1: Distribution of Number of Projects and Total Cost across sectors in proposed fund requirement by Maharashtra (2016-17)

	< 1	1-5	5-10	10-25	>25	Project Cost (Rs. Crore)	Number of projects	Average cost of project (Rs. Crore)	Sector-wise share (%) (cost)	Sector-wise share (%) (no.of projects)
Total (Animal Husbandry)	0	0	0	1	0	24.1	1	24.1	100	100
Total (Crop Development)	0	0	1	0	0	10.0	1	10.0	100	100
Fertilizers And Inn										
Soil Testing Labs	0	0	1	0	0	7.6	1	7.6	100	100
Total (Fertilizers And Inn)	0	0	1	0	0	7.6	1	7.6	100	100
Horticulture										
Total (Horticulture)	0	0	0	1	0	25.0	1	25.0	100	100
Total(Sericulture)	0	0	0	1	0	11.0	1	11.0	100	100

³¹ <http://rkvy.nic.in/> accessed in March 2017

Table 14-2: State Domestic Product from Agriculture (AGSDP) across States during pre and post-RKVY periods

Post RKVY periods					
2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	PRE-RKVY (2004-05 to 2007-08)	POST-RKVY (2008-09 TO 2014-15) *	% Increase
5339390	5949439	6571237	5339390	6215924	16
: Growth Rates of AGSDP across states during pre and post-RKVY periods					
2004-05 to 2007-08	2008-09 to 2011-12	2012-13 to 2014-15	PRE-RKVY (2004-05 to 2007-08)	POST-RKVY (2008-09 TO 2014-15)	
12.48	7.40	-0.73	12.48	3.49	
Value of Output: Agriculture and Allied Sectors (2004-05 prices)					
Average			Growth Rate		
Pre-RKVY	Post-RKVY	% increase		Pre-RKVY	Post-RKVY
8024056	8513567	6.10		10.20	12.27

Table 14-3: Major Land Use Details of Madhya Pradesh

	Net area Sown (thousand Hectare)	% increase in Net area Sown	Total Cropped Area (thousand Hectare)	% increase in Total Cropped Area	Gross irrigated area (thousand Hectare)	% increase in Gross irrigated area	Net Irrigated area (thousand Hectare)	% increase in Net Irrigated area	Cropping Intensity	% increase in cropping Intensity	% of Gross Irrigated Area to Total Cropped Area
Pre-RKVY	17548.2	-0.9	22340.85	1.05	4061.85	6.50	4061.85	3.18	127.33	1.97	18
Post-RKVY	17388		22576		4326		4326		130		

Source: Land Use Statistics, directorate of Economics and Statistics³²

Table 14-4: Project code of Maharashtra

Project Code	Name of Projects
1	promotion of Hybrid Pigeon Pea (ICIH 2740) Through Production Programme
2	Integrated Management of Control of leaf Blight Disease

32 Source: Url: http://eands.dacnet.nic.in/LUS_1999_2004.htm, accessed on March 2017

Table 14-5: Number of Household and percentage distribution between beneficiaries and non-beneficiaries (number in parenthesis show percentage values)

	Beneficiary	Non-Beneficiary
LL	--	--
ML	26 (33)	11 (55)
SL	29 (36)	6 (30)
MD	16 (20)	3(15)
LA	9 (11)	0 (0)
Total	80 (100)	20 (100)

Table 14-6: project wise number of Household and percentage distribution between beneficiaries and non-beneficiaries

	Project 1		Project 2	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
LL				
ML	77	23	67	33
SL	68	32	100	0
MD	91	9	75	25
LA	100	0	100	0
Total	80	20	80	20

Table 14-7A: Average Size of Land Holding (in hectare)

	Beneficiary					Non-Beneficiary				
	LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
Owned land	0	2.87	5.09	10.47	16.72	--	1.69	4.50	10.83	--
Leased-in Land / share cropping	0	1.50	1.50	0.50	4.25	--	1.00	0.50	3.00	--
Leased-out Land / share cropping	0	0.50	0.50	4.00	0.50	--	0.50	0.50	0.50	--
Total operated area (owned+LI-LO)	0	1.92	3.14	5.55	9.28	--	1.39	2.75	7.00	--
Irrigated Area by canal	--	21	0	0	0	--	0	0	0	--

Table 14-8: Irrigation Pattern

			Beneficiary					Non-Beneficiary				
			LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
Irrigated Area by tube well	Rented	Electric	--	24	3	12	15	--	45	0	0	--
		Diesel	--	9	12	23	13	--	0	0	0	--
	Owned	Electric	--	37	20	43	47	--	55	61	64	--
		Diesel	--	9	13	23	24	--	0	39	36	--
Irrigated Area by Tanks			--	0	12	0	0	--	0	0	0	--
Irrigated Area by Wells			--	0	23	0	0	--	0	0	0	--
Irrigated Area by others			--	0	18	0	0	--	0	0	0	--
Total			--	100	100	100	100	--	100	100	100	--

Table-9A: Number of Households Table-9B: Percentage of Household

<i>Source</i>	B	NB	<i>Source</i>	B	NB
Farming	80	20	Farming	100	100
Horticulture	40	10	Horticulture	50	50
Floriculture	40	10	Floriculture	50	50
Dairy	46	11	Dairy	58	55
Poultry	41	10	Poultry	51	50
Sericulture	40	10	Sericulture	50	50
Agricultural Labour	41	10	Agricultural Labour	51	50
Casual Labour	41	11	Casual Labour	51	55
Forestry	40	10	Forestry	50	50
Fishing	40	10	Fishing	50	50
Beekeeping	40	10	Beekeeping	50	50
Salary	41	10	Salary	51	50
Other	45	12	Other	56	60

Table 14-9: Comparison between income cost and profit between the beneficiaries and non-beneficiaries (unit: thousand rupees)

	2016-17						2015-16					
	Beneficiaries			Non-beneficiaries			Beneficiaries			Non-beneficiaries		
<i>Source</i>	Income	Cost	Profit	Income	Cost	Profit	Income	Cost	Profit	Income	Cost	Profit
Farming	332.5	155.6	176.8	242.7	108.7	134	293.8	142.7	151.1	204	95	109
Dairy	7.60	4.72	2.89	1.81	.82	1	5.82	3.27	2.55	2.54	1.18	1.36
Poultry	0.49	0.19	0.29					0.29				
Agricultural Labour	1.09		1.09	3			1.17	0		3		
Casual Labour	0.97	0	0.97	0.41			0.14	0	0.14	4.54		
Salary	2.78	1.45	26.3	1.8			24.6	1.43	23.2	15		
Other	20.9	7.09	13.8	9.16	4.33	4.83	22.4	7.93	14.5	7.91	3.75	4.16

Table 14-10 : Percentage Increase in income between the beneficiaries and non-beneficiaries over the years of 2015-16 to 2016-17

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average income	Cost	Average Profit	Average income	Cost	Average Profit
Farming	13	9	17	19	14	23
Dairy	31	44	13	-29	-31	-27
Agricultural Labour	-6			0		
Casual Labour	-30		-30	-10		
Salary	13	1	14	20		
Other	-7	-11	-5	16	16	16

Table 14-11: Percentage increase in average expenditure 2016-17 over 2015-16 (in all projects)

<i>Items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	6	-48
Total rent on machinery (tractor, harvester etc)	8	-21
Expenditure on purchased water for irrigation	7	11
Expenditure on electricity for irrigation	5	11
Expenditure on diesel	12	9
Expenditure on other fuels for agriculture	49	23
Any other	9	14
<i>Total expenditure on agriculture</i>	9	9

Table 14-12 : Average Annual Expenditure for Agriculture (Rs.)

<i>Items</i>	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	59333	52000	56000	100000
Total rent on machinery (tractor, harvester etc)	17026	8842	15727	11226
Expenditure on purchased water for irrigation	9400	4429	8806	4000
Expenditure on electricity for irrigation	17972	17846	17173	16015
Expenditure on diesel	23690	45000	21075	41200
Expenditure on other fuels for agriculture	2552	3800	1709	3100
Any other	107300	68950	98012	60450
<i>Total expenditure on agriculture</i>	237274	200867	218506	235992

Table 14-13: Average Annual Expenditure Growth in Agriculture (project wise) (Rs.)

	Growth rate for non-beneficiary	Growth rate for Beneficiary
Project 1 items		
Rent on leased-in land		7
Total rent on machinery (tractor, harvester etc)	-35	3
Expenditure on purchased water for irrigation	7	7
Expenditure on electricity for irrigation	13	2
Expenditure on diesel	-2	6
Expenditure on other fuels for agriculture	14	14
Any other	-5	3
Total expenditure on agriculture	-7	3
Project 2 items		
Rent on leased-in land	-48	0
Total rent on machinery (tractor, harvester etc)	1	12
Expenditure on purchased water for irrigation	13	7
Expenditure on electricity for irrigation	9	7
Expenditure on diesel	13	17
Expenditure on other fuels for agriculture	25	107
Any other	27	14
Total expenditure on agriculture	20	13

Table 14-14: Profile of the Sample in Maharashtra

		Beneficiary	Non-Beneficiary	Total
Total Sample Population		100	100	100
No. of dependent members		5	7	5
Age group	<=15	25	20	24
	>15 to 25	16	18	17
	>25 to 40	29	30	29
	>40 to 59	21	24	21
	>59	9	8	9
	All Groups	100	100	100
Education	Illiterate	11	7	10
	Class 1 to 5	17	21	18
	Above Class 5 to 8	15	15	15
	Above Class 8 to 12	42	39	42
	Above Class 12	12	11	12
	Other diploma	0	4	1
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	3	2	3
	All Groups	100	100	100
Occupation	1 cultivation	54	56	54
	2 agricultural labour	0	0	0
	3 dairy	0	0	0
	4 casual labour	0	0	0
	5 self-employment (specify)	3	0	2
	6 salaried employment	4	3	4
	All Groups	100	100	100

Table 14-15: Percentage Distribution of Assets in terms of number among beneficiaries and Non-beneficiaries

	Assets	Beneficiary					Non-Beneficiary				
		LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
1	Tractor	0	13	27	27	33	0	0	50	50	0
2	Trolley	0	13	27	27	33	0	0	50	50	0
3	Weeder	0	12	36	28	24	0	0	40	60	0
4	Manual / Power Sprayers	0	21	38	26	16	0	20	50	30	0
5	Threshers	0	0	14	57	29	0	0	67	33	0
6	Drier						0	0	0	100	0
7	Electrical Pump sets	0	24	41	23	13	0	31	46	23	0
8	Diesel Pump sets	0	16	28	32	24	0	0	50	50	0
9	Sprinkler sets / Drip Irrigation Equipments	0	17	40	20	23	0	67	0	33	0
10	Cane Crusher / Agro-processing Equipments										
11	Leveller	0	0	100	0	0	0	0	100	0	0
12	Fodder Choppers	0	21	33	36	9	0	0	50	50	0
13	Bullock cart	0	25	36	25	14	0	33	33	33	0
14	Harvest Combine										
15	Others	0	0	100	0	0	0	0	0	100	0

Table 14-16: Distribution of Livestock (in value terms) among beneficiaries and Non-beneficiaries

		Beneficiary					Non-Beneficiary				
		LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
1	Cow	0	16	39	30	15	0	9	46	45	0
3	Buffalo	0	31	27	34	9	0	0	36	64	0
5	Young Stock	0	20	36	32	12	0	6	38	56	0
7	Male Draught	0	25	34	22	18	0	40	29	32	0
9	Sheep										
11	Goat	0	96	4	0	0					
13	Pig										
15	Poultry	0	4	96	0	0					
17	Others										

Table 14-17: percentage distribution type of Houses

Type	Beneficiary	Non-beneficiary	Total
Kachha	11	30	15
Pucca	65	35	59
Semi-Pucca	24	35	26
Others	0	0	0
Total	100	100	100

Table 14-18: Percentage of households possessing other assets

Name of Asset	Beneficiary	Non-beneficiary
TV	69	50
Telephone	10	5
Mobile phone	98	0
Cycle	55	20
Two wheeler	48	35
Four wheeler	5	5
Refrigerator	36	35

Table 14-19: Comparison of profitability among beneficiaries and non-beneficiaries

(1)	Beneficiary (2)	Non-Beneficiary (3)	% Difference in profitability between beneficiary and non-beneficiary $=((2-3)/2)*100$
Wheat	43267	20990	106
Gram	56391	27767	103
Moong	12142	10000	21
Soya bean	38067	21872	74

Table 14-20: Animal husbandry component

		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total income	Average income	% of Total income	Average income
Milk		84	35000.0	100	20000.0
Milk Products	Ghee	0		0	
	Curd	0		0	
	Butter	0		0	
	Paneer	0		0	
	Others	0		0	
Eggs		1		0	
Manure		4		0	
Dung cake		1		0	
Animal sale		10	8120.0	0	--
TOTAL		100	29714.3	100	20000.0

Table 14-21: Percentage Change In Average Income Between 2016-17 And 2015-16

<i>Items</i>	% difference in average income of beneficiaries over non-beneficiaries		% change in average income Between 2016-17 and 2015-16	
	2016-17	2015-16	Ben	Non-Ben
Milk	75	15	8	-29
Eggs	--	--	-2	--
Manure	--	--	50	--
Dung cake	--	--	0	--
Animal sale	--	--	7	--

Table 14-22: Percentage Distribution of people with Awareness about RKVY

	Beneficiary	Non-Beneficiary
Have you heard about Rashtriya Krishi Vikas Yojana?	100	60
Benefits in 2016-17	100	0
Benefits in last 5 years	63	0
Benefits from any other government scheme in 2016-17	50	25
Benefits from any other government scheme in last 5 years	86	85

Table 14-23: Percentage Distribution of source of awareness

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	11	92	22
Newspaper	0	0	0
Agriculture/Horticulture Department	49	0	42
SAU	6	0	5
KVK	1	0	1
Input Suppliers	0	0	0
TV/Radio	0	0	0
Agri. Exhibitions	0	0	0
ZP/GP	33	8	29
Other sources	0	0	0
Total	100	100	100

Table 14-24: Soil Testing

Land Size	Soil Tested	Soil Health Card Issued	Place of soil Testing	
			Govt. Inst	Pvt. Org
Beneficiary				
LL				
ML	25	25	25	--
SL	32.5	32.5	32.5	--
MD	22.5	22.5	22.5	--
LA	20	20	20	--
Total	100	100	100	--
Non-Beneficiaries				
LL				--
ML	33.3	33.3	33.3	--
SL	33.3	33.3	33.3	--
MD	33.03	33.03	33.03	--
LA				--
Total	100	100	100	--

Table 14-25: Other Information regarding RKVY

	Beneficiary percentage	Undergone Training	Average no. of days of training	Type of training					No. of households found training beneficial	No. of households want more training?
				Demo	Field Visit	Krishi Mela	Others	Overall		
LL		--		--	--	--	--	--	--	--
ML	25	100	1	76	24	0	0	100	76	76
SL	24	100	1	81	19	0	0	100	85	73
MD	22	100	1	53	40	7	0	100	87	87
LA	13	100	1	89	11	0	0	100	100	100
Total	100	100	1	75	24	1	0	100	85	81

Table 14-26: Constrains faced in availing RKVY benefit

	No. Beneficiaries						No. of Non-beneficiaries					
	LL	ML	SL	MD	LA	Total	LL	ML	SL	MD	LA	Total
Information about RKVY programme details not easily available	0	22	21	28	28	100	0	10	45	28	17	100
Contact details of the department which pay subsidy not available	0	16	23	30	31	100	0	16	42	26	16	100
Eligibility or criteria for availing the subsidy not known	0	18	20	33	28	100	0	15	50	25	10	100
Procedure for the subsidy very tedious	0	24	21	26	29	100	0	22	43	30	4	100
No of documents required for availing subsidy are too many	0	18	27	26	29	100	0	26	35	26	13	100
Subsidy paid after purchase while initial payment remains the highest problem	0	18	24	33	24	100	0	18	43	28	13	100
Delay in transfer	0	21	21	33	24	100	0	15	45	27	12	100
Prescribed machinery/asset not easily available in the market	0	21	26	24	29	100	0	5	60	25	10	100
Institutional financing facility not available	0	16	30	32	22	100	0	17	46	21	17	100
Capacity building/technical advice not provided	0	24	22	30	24	100	0	11	37	42	11	100
Long time gap between the purchase and receiving the subsidy amount	0	22	24	33	21	100	0	7	39	36	18	100
Biased towards large land owners	0	24	21	24	30	100	0	12	44	28	16	100
Poor quality of materials/machinery are supplied	0	20	30	25	25	100	0	27	27	40	7	100
Implementing agencies are located far away	0	14	32	30	25	100	0	14	50	23	14	100
Incidence of bribery	0	22	19	31	28	100	0	17	39	28	17	100
Lack of monitoring	0	21	25	29	25	100	0	18	41	29	12	100
Complementary inputs not available	0	18	24	33	25	100	0	10	48	28	14	100
Restricted Choice	0	21	24	32	23	100	0	14	43	32	11	100
Lack of marketing support	0	21	26	35	18	100	0	17	43	26	14	100
Any other (specify)	--	--	--	--	--	--	--	--	--	--	--	--

Table 14-27A: Evaluation response of RKVY

		Satisfied	Not satisfied
Employment generation	LL		
	ML	17	83
	SL	13	87
	MD	12	88
	LA	4	96
	Total	15	85
Increasing production	LL		
	ML	22	78
	SL	22	78
	MD	23	77
	LA	17	83
	Total	21	79
improving marketing facilities	LL		
	ML	18	82
	SL	16	84
	MD	23	77
	LA	30	70
	Total	17	83
Better Price realization	LL		
	ML	24	76
	SL	22	78
	MD	21	79
	LA	22	78
	Total	22	78
Financial Assistance	LL		
	ML	33	67
	SL	31	69
	MD	33	67
	LA	33	67
	Total	32	68

Table 14-28B: Evaluation response of RKVY

		Satisfied	Not satisfied
Building Infrastructure	LL		
	ML	5	95
	SL	8	92
	MD	2	98
	LA	17	83
	Total	7	93
Capacity Building	LL		
	ML	2	98
	SL	7	93
	MD	4	96
	LA	7	93
	Total	5	95
Post harvesting storage	LL		
	ML	2	98
	SL	7	93
	MD	0	100
	LA	0	100
	Total	3	97
Procurement	LL		
	ML	28	72
	SL	31	69
	MD	27	73
	LA	30	70
	Total	29	71

Table 14-28: Details of the projects for implementing agency survey

Sl. No.	Project Name	Implementing agency
01	promotion of Hybrid Pigeon Pea (ICIH 2740) Through Production Programme	Director (Extension & Training) Commissionerate of Agriculture, Maharashtra
02	Integrated Management of Control of leaf Blight Disease	Director Horticulture Commissionerate of Agriculture, Maharashtra
03	Grape III (2 years)- KVK Baramati	KVK Baramati
06	Strengthening Primary Societies Under Apex (Partnership Agricultural MARKETING Societies	MAHAGRAPES PUNE
04	Pre Cooling Ripening and Cold Storage Facility for Banana at Indapur	Maharashtra State Agricultural Marketing Board Pune
05	Flower Export Facility Project	Maharashtra State Agricultural Marketing Board Pune

Table 14-29: General Information regarding the implementing agency

Issues\ Projects	Pre-Cooling Ripening and Cold Storage Facility for Banana at Indapur	Flower Export Facility Project
Type of construction	Cold-storage	Cold-storage
New construction/Improvement of an older construction	New	New
Awareness about DAP	Yes	Yes
Included in DAP	Yes	Not aware
Project proposed by	Implementing Agency	Implementing Agency
Level at which the project was proposed	Block	Block

Table 14-30: Fund Flow in the project

Issues\ Projects	Pre-Cooling Ripening and Cold Storage Facility for Banana at Indapur	Flower Export Facility Project
Funds required for the project in 2016-17	200000	182.10 Lakh
Funds approved for the project in 2016-17	200000	182.10 Lakh
Funds released for the project in 2016-17	200000	182.10 Lakh
Number of times funding released for the project in 2016-17	1	1

Table 14-31: Physical Capacity of the projects

Issues\ Projects	Pre-Cooling Ripening and Cold Storage Facility for Banana at Indapur	Flower Export Facility Project
Required physical capacity of the selected work. (in numbers)	Ripening Chamber 100MT, Precooling facility 5 MT, Civil work of Cold Storage 25 MT, 2 Pack House	Precooling facility capacity 5MT/6Hr, Cold Storage 100MT, Pack house, Flower grading line
Existing physical capacity excluding the current project.	0	0
Capacity of current project. (numbers)	As above	As above
Number of phases in the project	0	0

Table 14-32: Tendering & Maintenance regarding the project

Issues\ Projects	Pre-Cooling Ripening and Cold Storage Facility for Banana at Indapur	Flower Export Facility Project
Whether tender was called for execution of the work	Yes	Yes
e-tender issued	No	Yes
Opinion: e-tendering increases efficiency of tendering	Don't Know	Yes
Opinion: e-tendering increases transparency	Don't Know	Yes
Opinion: e-tendering has increased number and quality of responses from vendors		Yes, increased both quality and number of vendor
Number of days given to respond to tenders	25	25
Number of vendors responded to the tenders	2	4
Method for evaluating the tenders	Technical criteria and financial criteria	Technical criteria and financial criteria
Any re-bidding made	Yes	Yes
Reasons for re-bidding		Did not receive enough tenders
Selected vendor a Government / Private Organization	Private	Private
Whether selected vendor worked with the agency before	yes	No
Agency responsible for the maintenance of the constructed project in future years	Own Agency	Own Agency
If same agency, whether any financial provision is there in the project for maintenance in future	Yes	Yes

Table 14-33: Benefits and Challenges regarding the projects

Issues\ Projects		Pre-Cooling Ripening and Cold Storage Facility for Banana at Indapur	Flower Export Facility Project
Number of farmers expected to be benefitted from the construction	2017-18	3000	257
	2018-19	3500	300
	2019-20	4000	350
Beneficiaries from the project other than the farmers		FPO's and Local Traders	FPO's
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Cold storage and Govt. procurement centre	
Project needs enhancement / improvement		No	No
Opinion: the project will complete in stipulated time		Yes	Yes
Whether infrastructure is geo-tagged?		No	No
Reasons for not being geo-tagged		Project is ongoing	Project is ongoing

Table 14-34: Convergence with other projects

Issues\ Projects	Pre-Cooling Ripening and Cold Storage Facility for Banana at Indapur	Flower Export Facility Project
Whether any convergence with other schemes	No	No

Table 14-35: General Information regarding the implementing agency

Issues\ Projects	Grape III (2 years)- KVK Baramati
Type of knowledge and training imparted	Others
Whether project mentioned in DAP	No
Project was proposed by	Nodal agency
Level at which the project was proposed.	District

Table 14-36: Fund flow in the projects

Issues\ Projects	Grape III (2 years)- KVK Baramati
Funds required for the project in 2016-17	As per mandate , work is going on
Number of times were the funding released for the project in 2016-17	Quarterly
Major problems in the release of funds.	Reduced amounts
Number of phases required	3
In case of multiple phases, ways for management of funds.	Action plan prepared & Approved by taking suggestion from university scientists

Table 14-37: Physical capacity of the projects

Issues\ Projects		Grape III (2 years)- KVK Baramati
If there are multiple phases, how the project is designed to fulfill the physical target?	Phase 1	No response
	Phase 2	No response
	Phase 3	No response
	Phase 4	No response
Required capacity in the selected work for the agency in terms of physical infrastructure.		We have required infrastructure as per need
Required capacity in the selected work for the agency in terms of human resources		All posts are filled
Present capacity in the selected work for the agency in terms of physical infrastructure		All physical infrastructure are available in agency
Present capacity in the selected work for the agency in terms of human resources.		As per requirement all posts are filled

Table 14-38: Benefits and Challenges regarding the projects

Issues\ Projects		Grape III (2 years)- KVK Baramati
Mode of campaign for the project (multiple choices may apply)		Personal visit, tv, radio, mobile phone, newspaper, pamphlet, field demo, farmer field schools.
Number of farmers are expected to get benefit from the project?	2017-18	200000
	2018-19	300000
	2019-20	400000
Beneficiaries from the project other than the farmers		Co-operatives, FPO's, Local traders, Local Government, SHG's
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Seed banking, Soil Testing, Research Labs, Demonstration, Trainings centers and FPO's

Table 14-39: Convergence with other projects

Issues\ Projects	Grape III (2 years)- KVK Baramati
Whether any convergence with other schemes	Yes
Name of the schemes converged	NABARD, ATMA, National horticulture mission etc
Ways by which convergence achieved	Financial supplement and technical services
Opinion: Whether the project will meet the target of beneficiaries	Yes

Table 14-40: General Information regarding the implementing agency

Issues	Strengthening Primary Societies Under Apex (Partnership Agricultural MARKETING Societies
What is the type of collective activity is undertaken in the project?	Production Co-operative
What is nature of benefits expected from the project?	Lower cost of inputs, Higher production due to collectivization, Improved bargaining ability
Whether the project was mentioned in DAP?	District
Who proposed the need for the project?	Implementing agency
At what level, was the project was proposed?	Gram Panchayat Level

Table 14-41: Fund flow in the projects

Issues		Strengthening Primary Societies Under Apex (Partnership Agricultural MARKETING Societies)
What are the major problems related to release of the funding?		Reduced amounts
How many phases are needed?		NA
How many farmers are expected to get benefit from the activity?	1. 2017-18	2400
	2. 2018-19	3000
	3. 2019-20	3800

Table 14-42: Benefits and Challenges regarding the projects

Issues		Strengthening Primary Societies Under Apex (Partnership Agricultural MARKETING Societies)	
How many farmers are expected to get benefit from the activity?	1. 2017-18	2400	
	2. 2018-19	3000	
	3. 2019-20	3800	
Apart from farmers, who are the other beneficiaries from the project? (Multiple options might apply)		Cooperatives, FPO's	
Is the collectivization effective?		Yes	

15 MANIPUR

Manipur became a full-fledged State of India on the 21th January, 1972. Geographical area of the state is 22327 sq.km³³. Agriculture and allied services is one of the important sector in the economy; 52.81 % of the workers in Manipur are engaged as cultivators and agricultural labourers³⁴. Primary sector, which consists of crops, livestock, forestry & logging, fishing & aquaculture, and mining & quarrying sectors; contributed about 18.88% to the Gross State Domestic Product in 2015-16 (Manipur Economic Survey 2016-17). Net sown area in Manipur is 377 thousand hectares in 2013-14. The average size of holdings in the state was 1.14 hectares in 2010-11³⁵. Major crops are paddy, sugarcane, potato, tobacco, mustard and pulses, horticultural trees and plants like pineapple, banana, lemon, pears, peach, etc. Teak, pine, oak, uningthou, leihao, bamboo, cane, etc. are important forest resources. In addition, rubber, tea, coffee, orange, cardamom, etc. are also grown in hill areas.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Manipur. Under RKVY scheme, Rs. 29.77 crore was allocated, among which Rs. 12.83 crore was released and Rs. 11.86 crore was spent for Manipur for 2016-17 till 5th February, 2018³⁶. Figure 19-1 shows allocation, release and expenditure in RKVY in Manipur over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Manipur. We have selected 3 projects for Manipur and analysed the performance of RKVY by collecting primary information. List of selected projects for Manipur is given below (Table 15-1).

³³ http://manipur.gov.in/?page_id=3507

³⁴ Manipur Economic Survey 2016-17

³⁵ Agriculture Statistics at a glance 2016

³⁶ No data could be accessed for project proposals of Manipur for the year 2016-17, because of unavailability of data for Manipur in MIS report for 2016-17 in RKVY website

15.1 RESULTS FROM PRIMARY SURVEY

15.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Manipur, total 100 households are considered for the survey, among which 80 households are beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, the majority of the beneficiary households (91% of beneficiary households) are marginal farmers, 5% are small farmers, and 1% belongs to medium category. In the non-beneficiary households, 55% are landless 40% are marginal and 5% are small farmers (Table 15-2).

15.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. Marginal households in beneficiary category depend on diesel tube well for irrigation in Kharif season (Table 15-3 A & Table 15-3B).

We have collected separate data for land-holding and irrigation for Kharif and Rabi season. For Rabi 2016-17 also, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households (Table 15-4 A & Table 15-4B). Households depend on diesel tube well for irrigation in Kharif season; some of it is rented.

A total number of the population covered is, 501 among them, 406 people belong to beneficiary households and 95 people belong to non-beneficiary households (Table 15-5). Among them in

beneficiary households, 22% of the population is below 15 age group, while 12% are in above 60 age group. Rest 67% population in beneficiary households is in working age-group. In non-beneficiary households, 21% of the population is below 15 age-groups, while 8 percent are in above 60 age group. Rest 71% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 67% population is in working age group. On the education front, 19% of the population in beneficiary group and non-beneficiary group is illiterate. 70% population in beneficiary households and 67% population in non-beneficiary households have attended school (class 1 to 12); while 7% population in beneficiary households and 8% population in non-beneficiary households have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife' in beneficiary households (Table 15-6).

15.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 37% of the beneficiary households have reported income from farming. For non-beneficiary households, 25% of households have reported farming as an occupation. 3% of beneficiary households have reported income from dairy. 21% of beneficiary and 28% of beneficiary households have reported income from work as casual labour (Table 15-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 51051 in Manipur while the same for non-beneficiary households is Rs. 47440 in 2016-17 (Table 15-8). Average annual income for beneficiary households was Rs. 45743 in 2015-16 while it was Rs. 42421 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it (for beneficiary household) has increased from 2015-16 to 2016-17. Major sources of income are farming, fishing, poultry and dairy apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost (Table 15-8).

Table 15-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of

beneficiary households is Rs. 39231 which is higher than non-beneficiaries (Rs. 24800); so is the average cost (Rs. 14850 and Rs. 9073 respectively).

In terms of percentage change in income (Table 15-10), average income has increased by 8% in farming for beneficiary households. Average income has decreased by 5% for non-beneficiary households in 2016-17 over 2015-16. However, the average cost has increased more for beneficiary households in farming than non-beneficiary households.

15.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 15-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and other fuels. Apart from these, major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on all the individual categories is higher for beneficiaries than non-beneficiaries in 2016-17. Non-beneficiary household did not report any expenditure on electricity for irrigation, expenditure on diesel and other fuels.

Table 15-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in all the inputs for both beneficiary households.

15.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Manipur, for beneficiary households, marginal farmers own agricultural implements like tractor and trolley, weeder, diesel pump sets and fodder choppers (Table 15-13 A). In non-beneficiary households, medium farmers own equipments like Manual/Power Sprayers and fodder choppers (Table 15-13B).

Marginal, small and medium farmers from beneficiary households have a significant proportion of ownership of livestock (Table 15-14B). Marginal farmers among the beneficiaries have more cows, buffalos, young stock, male draught, goat, pig and poultry as compared to other classes.

In our sample, 19% of the households for beneficiary and 25% of non-beneficiary groups have pucca houses (Table 15-15). 55% households in beneficiary category and 55% of non-beneficiary category have semi-pucca houses.

It is observed from our sample that 76% of beneficiary households possess TV while for non-beneficiaries; it is 85% (Table 15-16). In the case of mobile phones 99% of beneficiary households and 95% of non-beneficiary households have reported to possess it. For both the categories of households, ownership of bicycles and two-wheelers are there, but four wheelers and refrigerator are not reported. Only 6% of beneficiary households and 5% of non-beneficiary households have refrigerator.

15.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, maize, urad, soyabean, mustard and vegetables in the majority of the cultivated area (Table 15-17). But for non-beneficiary households, the emphasis is on paddy and urad (Table 15-18). Average production of paddy is almost higher for beneficiary households (27 qtls) as compared to non-beneficiary households (23qtls). Price of the marketed quantity for paddy is more for the non-beneficiary household vis-à-vis beneficiary households; while for urad; average price is higher for beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 15-19). For paddy, marginal farmers in beneficiary category are getting less price as compared to medium farmers (Table 15-19).

In 2015-16 also, it is seen that price received by marginal farmers is low for paddy as compared to medium farmers for beneficiary households.

15.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. Among the households who have livestock, 95% of the income from livestock comes from animal sale for beneficiary households (Table 15-20).

15.1.1.7 AWARENESS REGARDING RKVY PROGRAMME

Regarding the awareness of RKVY, it is found that in our sample, non-beneficiary households mostly are not aware of RKVY. 79% of the non-beneficiaries have not heard about RKVY. 23% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 9% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 26% of the beneficiary households and 50% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 15-21 that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Manipur, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours, newspaper, Agriculture/Horticulture Department, agriculture exhibitions and Zila Panchayat and Gram Panchayat (Table 15-22). For non-beneficiary households, households received information from friends and neighbours and Agriculture/Horticulture Department.

15.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

One of the important aspects for development of agriculture is agriculture mechanization. Under RKVY programme, farmers are provided financial assistance in purchase of sprayers, tillers and others in villages like Sagoltongba Makha, Lairinjam, Patsoi, Kangmong Langoliam, Maibam, Khulakpam Mayai, Wangoo sabal, Moirang etc. under the project “Assistance for Farm Machineries and Implements”. All the benefits are provided through price subsidy (Table 15-23).

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY (Table 15-23 A). Crop seed or planting material is distributed to farmers through the RKVY programme

in Manipur under the project “Integrated Programme for crop Production” in the villages like Athokpam Mayai Leik, Lilong, Khangabok Awang leikai, Kakching, Wangkhem Muslim, Sanlungdhan, Charaepart, Gairipok kekru, Keirao Muslim, Kamuching, Lamboikhul, Bashikhong, Ngammkhong, Naharup, Yamben, Yumnam likai, Ehanam Sandrok, Sangomsang, Sanasabi, Wakha and Jaritkhul. The majority of the farmers have received benefit through direct benefit transfer (Table 15-23B).

In Manipur, 85% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil (Table 15-24 A). Among them, 37% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 15-24B).

Within our sample in Manipur, 79% of beneficiary households had undergone training and demonstration (Table 15-25). 79% of the households found training beneficial and 56% want more training.

15.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as subsidy paid after purchase, Biased towards large land owners, Lack of monitoring, Incidence of bribery, Lack of marketing support, Long time gap between the purchase and receiving the subsidy amount, Institutional financing facility not available (Table 15-26 A & Table 15-26B). For non-beneficiary households, major problems are: Contact details of the department which pay subsidy not available, Information about RKVY programme details not easily available, subsidy paid after purchase while initial payment remains the highest problem, Biased towards large land owners, Lack of monitoring, Lack of marketing support, Institutional financing facility not available.

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in increasing production, increasing market facilities, better price realization, providing financial assistance, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in

generating employment, Post-harvesting storage and procurement (Table 15-27 A & Table 15-27B).

15.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Manipur. Under RKVY scheme, Rs. 29.77 crore was allocated, among which Rs. 12.83 crore was released and Rs. 11.86 crore was spent for Manipur for 2016-17 till 5th February, 2018. This study analyses performance of RKVY for the year 2016-17 in Manipur. We have selected 3 projects for Manipur and analysed the performance of RKVY by collecting primary information. The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Manipur, total 100 households are considered for the survey, among which 80 households are beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed. In our sample, the majority of the beneficiary households (91% of beneficiary households) are marginal farmers, 5% are small farmers, and 1% belongs to medium category. In the non-beneficiary households, 55% are landless 40% are marginal and 5% are small farmers.

In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. Marginal households in beneficiary category depend on diesel tube well for irrigation in Kharif season. For Rabi season 2016-17 also, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. Households depend on diesel tube well for irrigation in Rabi season; some of it is rented.

A total number of the population covered is, 501 among them, 406 people belong to beneficiary households and 95 people belong to non-beneficiary households. Among them in beneficiary households, 22% of the population is below 15 age group, while 12% are in above 60 age group. Rest 67% population in beneficiary households is in working age-group. In non-beneficiary households, 21% of the population is below 15 age-groups, while 8 percent are in above 60 age group. Rest 71% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 67% population is in working age group. On the education front, 19% of the population in beneficiary group and non-beneficiary group is illiterate. 70% population in beneficiary households and 67% population in non-beneficiary households have attended school (class 1 to 12); while 7% population in beneficiary households and 8% population in non-beneficiary households have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife' in beneficiary households.

In the sample of our study, 37% of the beneficiary households have reported income from farming. For non-beneficiary households, 25% of households have reported farming as an occupation. 3% of beneficiary households have reported income from dairy. 21% of beneficiary and 28% of beneficiary households have reported income from work as casual labour.

Average income for beneficiary households are higher than non-beneficiary households and it (for beneficiary household) has increased from 2015-16 to 2016-17. Major sources of income are farming, fishing, poultry and dairy apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. In terms of percentage change in income, average income has increased by 8% in farming for beneficiary households. Average income has decreased by 5% for non-beneficiary households in 2016-17 over 2015-16. However, the average cost has increased more for beneficiary households in farming than non-beneficiary households.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and other fuels. Apart from these, major expenditure is clubbed under "other" category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on all the individual

categories is higher for beneficiaries than non-beneficiaries in 2016-17. Non-beneficiary household did not report any expenditure on electricity for irrigation, expenditure on diesel and other fuels.

In our sample in Manipur, for beneficiary households, marginal farmers own agricultural implements like tractor and trolley, weeder, diesel pump sets and fodder choppers. In non-beneficiary households, medium farmers own equipments like Manual/Power Sprayers and fodder choppers.

Marginal, small and medium farmers from beneficiary households have a significant proportion of ownership of livestock. Marginal farmers among the beneficiaries have more cows, buffalos, young stock, male draught, goat, pig and poultry as compared to other classes.

In our sample, 19% of the households for beneficiary and 25% of non-beneficiary groups have pucca houses. 55% households in beneficiary category and 55% of non-beneficiary category have semi-pucca houses. It is observed from our sample that 76% of beneficiary households possess TV while for non-beneficiaries; it is 85%. In the case of mobile phones 99% of beneficiary households and 95% of non-beneficiary households have reported to possess it. For both the categories of households, ownership of bicycles and two-wheelers are there, but four wheelers and refrigerator are not reported. Only 6% of beneficiary households and 5% of non-beneficiary households have refrigerator.

It is seen from the sample that beneficiary households cultivated paddy, maize, urad, soyabean, mustard and vegetables in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy and urad. Average production of paddy is almost higher for beneficiary households (27 qtls) as compared to non-beneficiary households (23 qtls). Price of the marketed quantity for paddy is more for the non-beneficiary household vis-à-vis beneficiary households; while for urad; average price is higher for beneficiary households. Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For paddy, marginal farmers in beneficiary category are getting less price as compared to medium farmers. Apart from cultivation, the households earn income from livestock. Among the

households who have livestock, 95% of the income from livestock comes from animal sale for beneficiary households.

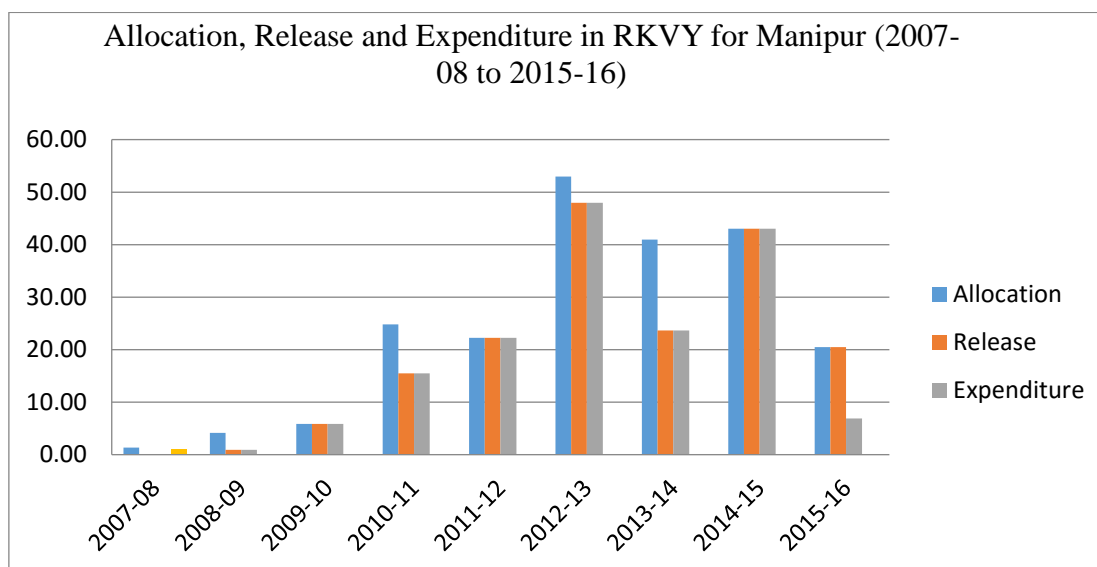
Regarding the awareness of RKVY, it is found that in our sample, non-beneficiary households mostly are not aware of RKVY. 79% of the non-beneficiaries have not heard about RKVY. 23% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 9% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 26% of the beneficiary households and 50% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17. Beneficiary households, in Manipur, have better awareness regarding RKVY or other government programmes. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY. In our sample in Manipur, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours, newspaper, Agriculture/Horticulture Department, agriculture exhibitions and Zila Panchayat and Gram Panchayat. For non-beneficiary households, households received information from friends and neighbours and Agriculture/Horticulture Department.

One of the important aspects for development of agriculture is agriculture mechanization. Under RKVY programme, farmers are provided financial assistance in purchase of sprayers and tillers in villages like Sagoltongba Makha, Lairinjam, Patsoi, Kangmong Langoliam, Maibam, Khulakpam Mayai, Wangoo sabal, Moirang etc. under the project “Assistance for Farm Machineries and Implements”. Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. Crop seed or planting material is distributed to farmers through the RKVY programme in Manipur under the project “Integrated Programme for crop Production” in the villages like Athokpam Mayai Leik, Lilong, Khangabok Awang leikai, Kakching, Wangkhem muslim, Sanlungdhan, Charaepart, Gairipok kekru, Keirao Muslim, Kamuching, Lamboikhul, Bashikhong, Ngammkhong, Naharup, Yamben, Yumnam likai,

Ehanam Sandrok, Sangomsang, Sanasabi, Wakha and Jaritkhul. The majority of the farmers have received benefit through direct benefit transfer. In Manipur, 85% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil. Among them, 37% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Manipur, 79% of beneficiary households had undergone training and demonstration. 79% of the households found training beneficial and 56% want more training.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as subsidy paid after purchase, biased towards large land owners, lack of monitoring, incidence of bribery, lack of marketing support, long time gap between the purchase and receiving the subsidy amount, institutional financing facility not available. For non-beneficiary households, major problems are: contact details of the department which pay subsidy not available, information about RKVY programme details not easily available, subsidy paid after purchase while initial payment remains the highest problem, biased towards large land owners, lack of monitoring, lack of marketing support, institutional financing facility not available. According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in increasing production, increasing market facilities, better price realization, providing financial assistance, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in generating employment, Post-harvesting storage and procurement.

Figure 19-1: Allocation, Release and Expenditure in RKVY for Manipur (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 15-1: List of selected project name and code

Project Code	Project Name
1	Integrated Programme for crop production
2	Assistance for Farm Machineries and Implements
3	Providing of Mechanized Equipment

Table 15-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	2(3)	11(55)	13(13)
Marginal	73(91)	8(40)	81(81)
Small	4(5)	1(5)	5(5)
Medium	1(1)	0(0)	1(1)
Large	0(0)	0(0)	0(0)
Total	80(100)	20(100)	100(100)

Table 15-3 A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.3	4	9	
Leased-in Land/share cropping (acre)				1.3			
Leased-out Land/share cropping (acre)				2.0			
Total operated area (owned+LI-LO) (acre)				1.3	4	9	
Irrigated Area by canal (%)				0	0		
Irrigated Area by tube well (%)	Rente d	Electric		0	0		
		Diesel		45	0		
	Owne d	Electric		0	0		
		Diesel		55	0		
Irrigated Area by Tanks (%)				0	0		
Irrigated Area by Wells (%)				0	0		
Irrigated Area by others (%)				0	100		

Table 15-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			2	0.8	3		
Leased-in Land/share cropping (acre)			0.3				
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)			2	0.8	3		
Irrigated Area by canal (%)				0			
Irrigated Area by tube well (%)	Rente d	Electric		0			
		Diesel		0			
	Owne d	Electric		0			
		Diesel		0			
Irrigated Area by Tanks (%)				0			
Irrigated Area by Wells (%)				0			
Irrigated Area by others (%)				100			

Table 15-4 A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.4	4		
Leased-in Land/share cropping (acre)							
Leased-out Land/share cropping (acre)				2			
Total operated area (owned+ LI-LO) (acre)				1.3	4		
Irrigated Area by canal (%)				0	0		
Irrigated Area by tube well (%)	Rente d	Electric		0	0		
		Diesel		54	0		
	Owne d	Electric		0	0		
		Diesel		46	0		
Irrigated Area by Tanks (%)				0	0		
Irrigated Area by Wells (%)				0	0		
Irrigated Area by others (%)				0	100		

Table 15-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.5	0.2			
Leased-in Land/share cropping (acre)							
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)			0.5	0.2			
Irrigated Area by canal (%)				0			
Irrigated Area by tube well (%)	Rente d	Electric		0			
		Diesel		0			
	Owne d	Electric		0			
		Diesel		0			
Irrigated Area by Tanks (%)				0			
Irrigated Area by Wells (%)				0			
Irrigated Area by others (%)				100			

Table 15-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	22	21	22
	>15 to 25	20	25	21
	>25 to 40	22	18	21
	>40 to 59	24	27	25
	>59	12	8	11
	All Groups	100	100	100
Education	Illiterate	19	19	19
	Class 1 to 5	12	12	12
	Above Class 5 to 8	16	12	15
	Above Class 8 to 12	42	44	43
	Above Class 12	7	8	7
	Other diploma	0	0	0
	can read and write	1	4	2
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	2	1	2
	All Groups	100	100	100

Table 15-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	12	11	5
agricultural labour	3	6	4
casual labour	8	28	12
self-employment	4	18	5
salaried employment	8	36	9
Student	26	0	27
housewife	23	0	22
non-working	14	0	15
others (no separate income)	1	0	0
All Groups	100	100	100

Table 15-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	37	25
Dairy	3	0
Poultry	1	0
Sericulture	0	3
Agricultural Labour	7	10
Casual Labour	21	28
Fishing	1	0
Salary	16	20
Other	15	15
Total	100	100

Table 15-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	42493	17135	22838	23510	10045	12460
Dairy	29000	11800	17200			
Poultry	2000		2000			
Agricultural Labour	35769	4750	34308	35500	10000	33000
Casual Labour	48026	5000	47256	50636	6500	48273
Fishing	80000	20000	60000			
Salary	89933	11227	81700	74375	7714	67625
Other	46143	17560	30464	56417	20600	39250
Total	51051	15252	35800	47440	10839	36601

Table 15-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	39231	14850	21411	24800	9073	14820
Dairy	23000	9800	13200			
Poultry	1500		1500			
Sericulture				18000		18000
Agricultural Labour	31692	4000	30769	30500	8000	28500
Casual Labour	42590	5000	42077	45182	5250	43273
Fishing	70000	15000	55000			
Salary	80833	6929	75983	71429	6500	65857
Other	38704	14011	24693	45400	19667	21800
Total	45743	12792	32951	42421	10207	32214

Table 15-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	8	15	7	-5	11	-16
Dairy	26	20	30			
Poultry	33		33			
Sericulture				67		67
Agricultural Labour	13	19	12	16	25	16
Casual Labour	13	0	12	12	24	12
Fishing	14	33	9			
Salary	11	62	8	4	19	3
Other	19	25	23	24	5	80

Table 15-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	11000		10667	
Total rent on machinery (tractor, harvester etc)	2759	2380	2448	6150
Expenditure on purchased water for irrigation	3167	2700	2850	3000
Expenditure on electricity for irrigation				
Expenditure on diesel	5100		4440	
Expenditure on other fuels for agriculture	2000		1500	
Any other	12327	7800	10912	7010
Total expenditure on agriculture	15718	1306	55845	6730

Table 15-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	3	
Total rent on machinery (tractor, harvester etc)	13	-61
Expenditure on purchased water for irrigation	11	-10
Expenditure on electricity for irrigation		
Expenditure on diesel	15	
Expenditure on other fuels for agriculture	33	
Any other	13	11
Total expenditure on agriculture	-72	-81

Table 15-13 A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	100	0	0	0
Trolley	0	100	0	0	0
Weeder	0	50	50	0	0
Diesel Pump sets	0	100	0	0	0
Fodder Choppers	0	97	3	0	0
Others	0	83	17	0	0

Table 15-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Manual/Power Sprayers	33	33	33	0	0
Fodder Choppers	33	50	17	0	0
Others	0	100	0	0	0

Table 15-14 A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	2	93	4	0	0
Buffalo	0	100	0	0	0
Young Stock	3	94	3	0	0
Male Draught	0	100	0	0	0
Goat	0	92	8	0	0
Pig	0	33	33	33	0
Poultry	0	100	0	0	0

Table 15-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	26	20	25
Pucca	19	25	20
Semi-Pucca	55	55	55
Others	0	0	0
Total	100	100	100

Table 15-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	76	24	100	85	15	100
Telephone	0	100	100	0	100	100
Mobile phone	99	1	100	95	5	100
Cycle	95	5	100	95	5	100
Two wheeler	64	36	100	65	35	100
Four wheeler	0	100	100	0	100	100
Refrigerator	6	94	100	5	95	100

Table 15-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivate d Area (in Acres)	Irrigated Area (in Acres)	Producti on (Qtls)	Markete d Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitabi lity
paddy	1.3	0.3	26.9	18.7	1178.8	11692.3	10298
maize	0.9	0.3	11.3	9.0	1123.3	5166.7	4943
urad	1.0	0.7	5.8	5.4	3300.0	8125.5	9694
soyabean	0.4	0.4	2.4	2.3	3366.7	1500.9	6130
mustard	0.8	0.5	5.1	4.6	3323.1	5884.6	9453
vegetable	1.5	1.3	173.5	173	646	48458	63271

Table 15-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non-beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivat ed Area (in Acres)	Irrigated Area (in Acres)	Producti on (Qtls)	Markete d Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitabi lity
paddy	1	0	23	15	1218	9250	8533
urad	1	0	3	3	3200	3000	5640

Table 15-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Land less	Margin al	Small	Medi um	Lar ge	Land less	Margin al	Small	Medi um	Lar ge
paddy		1220	375	1370		1360	1178	1400		
maize		1123								
urad		3300				3200				
soyabean		3367								
mustard		3323								

Table 15-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landl ess	Marg inal	Small	Medi um	Large	Landl ess	Marg inal	Small	Medi um	Large
paddy		1133	363	1330		1320	1151	1340		
maize		1080								
urad		3150				3000				
soyabea n		3233								
mustard		2962								

Table 15-20: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
Items	% of Total Income	Average Annual income (Rs.)	% of Total Income	Average Annual income (Rs.)
Egg	5	2000.0		
Animal Sale	95	18000.0		
Total	100	12666.7		

Table 15-21: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about Rashtriya Krishi Vikas Yojana?	95	5	100	21	79	100	81	19	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	95	5	100	5	95	100	78	22	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	23	78	100	0	100	100	18	82	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	9	91	100	0	100	100	7	93	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	26	74	100	50	50	100	27	73	100

Table 15-22: Source of Awareness regarding RKVY (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbours	26	50
Newspaper	14	0
Agriculture/Horticulture Department	50	50
SAU	0	0
KVK	1	0
Input suppliers	0	0
TV/Radio	1	0
Agri. Exhibitions	3	0
ZP/GP	3	0
Other sources	1	0
Total	100	100

Table 15-23 A: Details of Interventions made under agriculture mechanization (in 2016-17) in Manipur for beneficiaries

		Tiller	Sprayers	Others
No of beneficiaries of RKVY		1	36	10
Average Cost (Rs.)		200000	1619	3500
Average mount financed by loan (Rs.)		70000		
Average subsidy amount from RKVY (Rs.)		100000	849	1750
Mode of subsidy Transfer (%)				
	Price subsidy	100	100	100
	DBT	0	0	0

Table 15-23B: Details of Interventions made under crop development (in 2016-17) in Manipur for beneficiaries

		Seeds/planting materials
No of beneficiary of RKVY		40
Average actual cost of these materials (Rs.)		658
Whether Material or subsidy received from RKVY (%)		
	Material	3
	Subsidy	98
If Material, quantity supplied (Kg)		
If subsidy, then	quantity of subsidized input (Kg) (average)	1213
	Unit price (average)	738
	Price paid by beneficiary (average)	551
	Market price (average)	1644
	Amount of subsidy (average)	1084

Table 15-24 A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?			Soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless						
Marginal	86	14	100	38	62	100
Small	100	0	100	25	75	100
Medium	100	0	100	0	100	100
Large						
Total	85	15	100	37	63	100
Non-beneficiary						
Landless	0	100				
Marginal	13	88	100	100	0	100
Small	0	100	100			100
Medium						
Large						
Total	5	95	100	100	0	100

Table 15-24B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large			
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small			
Medium			
Large			
Total	100	0	0

Table 15-25: Information regarding training and demonstration under RKVY (% of households) (2016-17)

		Type of training					
	% of beneficiary households undergone training	Demonstration	Field Visit	Krishi Mela	Others	% of households found training beneficial	% of households who want more training
Landless	0	0	0	0	100	0	0
Marginal	79	58	0	0	100	79	58
Small	100	75	0	25	100	100	75
Medium	100	0	0	0	100	100	0
Large							
Total	79	56	0	1	100	79	56

Table 15-26 A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	100	4	25	0		8
Contact details of the department which pay subsidy not available	100	55	50	0		55
Eligibility or criteria for availing the subsidy not known	0	47	50	100		46
Procedure for the subsidy very tedious	0	32	25	0		30
No of documents required for availing subsidy are too many	100	41	50	0		43
Subsidy paid after purchase while initial payment remains the highest problem	100	81	75	100		81
Delay in transfer	50	53	0	0		50
Prescribed machinery/asset not easily available in the market	50	47	75	0		48
Institutional financing facility not available	100	52	100	100		56
Capacity building/technical advice not provided	0	51	50	100		50
Long time gap between the purchase and receiving the subsidy amount	100	53	75	100		56
Biased towards large land owners	50	71	50	0		69
Poor quality of materials/machinery are supplied	0	42	0	0		39
Implementing agencies are located far away	50	56	25	100		55
Incidence of bribery	100	64	100	0		66
Lack of monitoring	100	66	75	0		66
Complementary inputs not available	50	51	50	100		51
Restricted choice	100	51	50	100		53
Lack of marketing support	0	64	50	100		63
Any other (specify)	0	0	0	0		0

Table 15-26B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	100	75	100			90
Contact details of the department which pay subsidy not available	100	100	100			100
Eligibility or criteria for availing the subsidy not known	18	13	0			15
Procedure for the subsidy very tedious	36	25	0			30
No of documents required for availing subsidy are too many	55	75	100			65
Subsidy paid after purchase while initial payment remains the highest problem	82	88	100			85
Delay in transfer	45	38	0			40
Prescribed machinery/asset not easily available in the market	45	75	0			55
Institutional financing facility not available	73	63	100			70
Capacity building/technical advice not provided	82	50	0			65
Long time gap between the purchase and receiving the subsidy amount	45	63	100			55
Biased towards large land owners	73	88	100			80
Poor quality of materials/machinery are supplied	36	50	0			40
Implementing agencies are located far away	82	50	0			65
Incidence of bribery	27	38	100			35
Lack of monitoring	64	88	100			75
Complementary inputs not available	73	63	0			65
Restricted choice	64	50	100			60
Lack of marketing support	73	63	100			70
Any other (specify)	0	0	0			0

Table 15-27 A: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	0	0	0	0	0	0	0	0	0	0
Marginal	16	73	84	5	51	38	48	42	57	33
Small	20	60	80	0	60	20	80	0	40	40
Medium	0	100	100	0	100	0	0	100	100	100
Large										
Total	14	63	73	4	45	32	43	35	49	30

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 15-27B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	0	0	0	0	0	0	0	0
Marginal	57	32	49	40	9	80	0	0
Small	60	20	60	20	20	60	0	0
Medium	100	0	100	0	0	100	0	0
Large								
Total	50	27	44	33	8	69	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory

16 MEGHALAYA

Meghalaya is in north-eastern part of India with the geographic area of 22,429 square kilometres, which became a full-fledged state on 21st January 1972.³⁷ The state is surrounded by Assam from north and east; and neighbouring state Bangladesh from south and west. Forest area is over 38% of its land use. Agriculture sector is one of the key sectors in Meghalaya. Around 80% of its population depends entirely on Agriculture for their livelihood. Gross cropped area in Meghalaya is 342885 hectare in 2013-14 (Statistical Abstract of Meghalaya 2016). The average size of land-holding is 1.37 hectares in Meghalaya in 2010-11, which varies from 0.45 hectares for marginal farmers to 16.46 hectares for large farmers. Small and marginal farmers constitute about 76.6% of the total farmers in the state. Agriculture & allied services contributes to 15.53% of GSDP in the state in 2014-15³⁸. Major crops are: food crops like rice and maize; along with horticultural crops like orange, lemon, pineapple, guava, litchi, banana, jack fruits and temperate fruits such as plum, pear, peach etc.

RKVY was started in 2007-08 in Meghalaya. RKVY was implemented in Meghalaya through the Department of Agriculture as the Nodal Department with the main aim of overall development in agriculture through sub-sectors namely Agriculture, Horticulture, Irrigation, Animal Husbandry and Veterinary, Soil and Water conservation and Cooperation. So far under agriculture sector, soil and water conservation sector and irrigation sector, the thrust is for land development, creation of water sources and farm mechanization to bring more areas under cultivation as well as increase the cropping intensity of the state. On Horticulture sub-sector effort is on encouragement of cultivation of high value low volume crops through hubs and spokes model. On fisheries sector and animal husbandry & veterinary sector, the objective is to reduce the increasing demand of fish and meat import from other states and also to meet the nutritional demand through fish and meat. On the other hand the Cooperation Department assists the Animal Husbandry and veterinary sector in dairy farming.

Under RKVY scheme, Central Government has allocated Rs. 20.19 Crore for Meghalaya, for which 10.63 crore has been released and expenditure of Rs. 0.90 crore has been incurred (for

³⁷ <http://meghalaya.gov.in/megportal/stateprofile>

³⁸ At constant 2004-05 prices

which UC has been received) in Meghalaya during 2016-17 till 31st July 2017. According to MIS report, Meghalaya proposed for projects of 3.6 Crores in 2016-17 from RKVY scheme. Among different sectors, micro/minor irrigation is given importance in terms of number of projects among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), horticulture and sericulture are the priority sectors. No project is proposed for cost more than 5 crores. So, in Meghalaya only small projects are proposed in 2016-17. Project with highest average cost is proposed for horticulture. Figure 16-1 shows allocation, release and expenditure in RKVY in Meghalaya over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Meghalaya. Due to small geographical region, number of projects ongoing in Meghalaya is also less as compared to other states of India. So, we have selected one project for Meghalaya and analysed the performance of RKVY by collecting primary information. List of selected project for Meghalaya is given below (Table 16-1).

16.1 RESULTS FROM PRIMARY SURVEY

16.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Meghalaya, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, the majority of the beneficiary households (56% of beneficiary households) are marginal farmers, 34% are small farmers and 10% are medium farmers. In the non-beneficiary households, 60% are marginal and 30% are small farmers (Table 16-2).

16.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for kharif 2016-17, the average area of owned land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. Households from beneficiary and non-beneficiary groups both depend on diesel tube well for irrigation in kharif season (Table 16-3A & Table 16-3B).

We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households, but the situation is opposite for small farmers (Table 16-4A & Table 16-4B). Households depend on diesel tube well for irrigation in rabi season; majority of it is rented.

In our sample, a total of 40 households are beneficiaries and 10 are non-beneficiaries. A total number of the population covered is 182, among them, 139 people belong to beneficiary households and 43 people belong to non-beneficiary households (Table 16-5). Among them in beneficiary households, 24% of the population is below 15 age group, while 2 percent are in above 60 age group. Rest 74% population in beneficiary households is in working-age-group. In non-beneficiary households, 30% of the population is below 15 age-groups and 70% population in non-beneficiary households is in working-age-group. Taking both the groups into consideration, 73% population is in working-age group. On the education front, 18% of the population in beneficiary group and 16% of non-beneficiary group is illiterate. 79% population in beneficiary households and 84% population in non-beneficiary households have attended school (class 1 to 12); while 1% population in beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are student or housewives (Table 16-6).

16.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, both for beneficiary and non-beneficiary households, 100% of the beneficiary households have reported income from farming. 20% of beneficiary households and 60% of non-beneficiary households have reported income from dairy (Table 16-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 78357 in Meghalaya while the same for non-beneficiary households is Rs. 45889 in 2016-17 (Table 16-8). Average annual income for beneficiary households was Rs. 73522 in 2015-16 while it was Rs. 43640 for non-beneficiary households in the same year. Average income for beneficiary households in Meghalaya are higher than non-beneficiary households and both have increased from 2015-16 to 2016-17. Major sources of income are farming, dairy and poultry apart from agricultural labour and casual labour. For farming also, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is also higher for beneficiary households (Table 16-8).

Table 16-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 135468 which is higher than non-beneficiaries (Rs. 98500); so is the average cost (Rs. 67700 and Rs. 51150 respectively).

In terms of percentage change in income (Table 16-10), average income has increased by 8% in farming for beneficiary and 13% for non-beneficiary households. However, the average cost has increased more for non-beneficiary households in farming than beneficiary household.

16.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 16-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on leased-in land, rent of agriculture machinery (tractor, harvester etc.), purchased water for irrigation, diesel and other fuels for agriculture. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on purchased water for irrigation is higher for non-beneficiaries than beneficiaries.

Table 16-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in purchase of water for irrigation for beneficiary households. Expenditure on diesel for irrigation has decreased for beneficiary and increased non-beneficiary households.

16.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Meghalaya, for beneficiary households, farmers have reported owing diesel pump set as asset for agriculture. Majority of it is owned by small farmers (Table 16-13A). In non-beneficiary households, farmers own equipment like diesel pump set, electric pump sets etc. (Table 16-13B). Some marginal and small farmers in non-beneficiary households own bullock cart.

Marginal and small farmers from beneficiary households have some ownership of livestock (Table 16-14B). They own cows, young stock, pig and poultry. Majority of these are owned by small farmers.

In our sample, 38% of the households for beneficiary and 20% of non-beneficiary groups have pucca houses (Table 16-15). 58% households in beneficiary category and 80% in the non-beneficiary category have semi-pucca houses.

It is observed from our sample that 100% of beneficiary households possess TV while for non-beneficiaries; it is 90% (Table 16-16). In the case of mobile phones, almost 100% of households have reported to possess it, for both the categories. 88% of beneficiary households and 80% of non-beneficiary households own bicycle. Some households have two-wheelers. No household in our sample for the state has four-wheelers or refrigerator.

16.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, soyabean, mustard, fruits, vegetables and spices. Non-beneficiary households, on the other hand cultivated paddy, fruits, vegetables and spices in the majority of the cultivated area (Table 16-17 and Table 16-18). Average production of paddy is much higher for beneficiary households (38.7 qtls) as

compared to beneficiary households (28.4 qtls). But the price of the marketed quantity for paddy is much higher for the non-beneficiary household vis-à-vis non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the paddy in 2016-17 (Table 16-19). Marginal farmers in beneficiary group and small farmers in non-beneficiary group are getting higher price than other farmers for paddy (Table 16-19). In 2015-16, it is seen that marginal farmers in both beneficiary and non-beneficiary group are getting higher price than other farmers for paddy.

16.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. In our sample for Meghalaya, it is seen that average income from livestock is higher for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, 51% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 79% (Table 16-20). Apart from that, some income comes from the animal sale and others.

The inter-temporal comparison shows that average income from the production of milk is higher for beneficiaries as compared to non-beneficiaries both in 2016-17 and 2015-16. For animal sale, income of beneficiary households is much higher than income of non-beneficiary households from it and it has increased from 2015-16 to 2016-17. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for beneficiaries (Table 16-21).

16.1.1.7 AWARENESS REGARDING RKVY PROGRAMME

Regarding the awareness of RKVY, it is found that in our sample, households in Meghalaya are quite aware of the programme. 100% of the beneficiaries and 80% of the non-beneficiaries have heard about RKVY. 100% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 5% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than

RKVY in the year 2016-17. For the last five years, 2.5% of the beneficiary households and none of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17 (Table 16-22).

In our sample in Meghalaya, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours, Agriculture/Horticulture Department and Zila/Gram Panchayat (Table 16-23). For non-beneficiary households, 87.5% of the households received information from friends and neighbours.

16.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural mechanization for the project “Promotion of farm mechanization” through RKVY. Beneficiaries have received support from RKVY programme in buying tiller through this project in Meghalaya. The majority of them have received it through price subsidy. Majority of the farmers received credit from banks. 44% of the cost of the tiller is provided by RKVY in Meghalaya (Table 16-24).

It is also found in our study that 98% of the beneficiary and 100% of the non-beneficiary households have mobile phones, among them 55% of beneficiary and 40% of non-beneficiary households received text messages (Table 16-25).

16.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned their major problem as

Subsidy paid after purchase while initial payment and Capacity building/technical advice not provided as major problems. Apart from those, delay in transfer, Long time gap between the purchase and receiving the subsidy amount, lack of marketing support and eligibility or criteria for availing the subsidy not known are mentioned as big constraints by beneficiary households (Table 16-26A). Apart from these, restricted choice poses a major problem for marginal farmers in the beneficiary category. For non-beneficiary farmers, subsidy paid after purchase while initial payment remains the highest problem, institutional financing facility not available,

Capacity building/technical advice not provided, biased towards large land owners, lack of monitoring, restricted choice and lack of marketing support are major problems (Table 16-26B).

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in employment generation, increasing production, providing financial assistance, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in procurement in the state (Table 16-27A & Table 16-27B).

16.2 CONCLUSION

RKVY was started in 2007-08 in Meghalaya. RKVY was implemented in Meghalaya through the Department of Agriculture as the Nodal Department with the main aim of overall development in agriculture through sub-sectors namely Agriculture, Horticulture, Irrigation, Animal Husbandry and Veterinary, Soil and Water conservation and Cooperation. Under RKVY scheme, Central Government has allocated Rs. 20.19 Crore for Meghalaya, for which 10.63 crore has been released and expenditure of Rs. 0.90 crore has been incurred (for which UC has been received) in Meghalaya during 2016-17 till 31st July 2017. According to MIS report, Meghalaya proposed for projects of 3.6 Crores in 2016-17 from RKVY scheme. In Meghalaya, only small projects are proposed in 2016-17. Project with highest average cost is proposed for horticulture. This study analyses performance of RKVY for the year 2016-17 in Meghalaya. Due to small geographical region, number of projects ongoing in Meghalaya is also less as compared to other states of India. So, we have selected one project for Meghalaya and analysed the performance of RKVY by collecting primary information.

In our sample, the majority of the beneficiary households (56% of beneficiary households) are marginal farmers, 34% are small farmers and 10% are medium farmers. In the non-beneficiary households, 60% are marginal and 30% are small farmers. In our sample, for kharif 2016-17, the average area of owned land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. Households from beneficiary and non-beneficiary groups both depend on diesel tube well for irrigation in kharif season. We have collected separate data for land-holding and irrigation for kharif and rabi season.

In our sample, a total of 40 households are beneficiaries and 10 are non-beneficiaries. A total number of the population covered is 182, among them, 139 people belong to beneficiary

households and 43 people belong to non-beneficiary households. Among them in beneficiary households, 74% population in beneficiary households is in working-age-group. In non-beneficiary households, 70% population is in working-age-group. On the education front, 18% of the population in beneficiary group and 16% of non-beneficiary group is illiterate. 79% population in beneficiary households and 84% population in non-beneficiary households have attended school (class 1 to 12). Major occupation is cultivation, while some members of the households are student or housewives.

In the sample of our study, both for beneficiary and non-beneficiary households, 100% of the beneficiary households have reported income from farming. 20% of beneficiary households and 60% of non-beneficiary households have reported income from dairy. Average annual income of the sample beneficiary households in aggregate is Rs. 78357 in Meghalaya while the same for non-beneficiary households is Rs. 45889 in 2016-17. Average income for beneficiary households in Meghalaya are higher than non-beneficiary households and both have increased from 2015-16 to 2016-17. For farming also, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is also higher for beneficiary households.

Disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households shows that expenditure on agriculture is incurred on leased-in land, rent of agriculture machinery (tractor, harvester etc.), purchased water for irrigation, diesel and other fuels for agriculture. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on purchased water for irrigation is higher for non-beneficiaries than beneficiaries.

In our sample in Meghalaya, for beneficiary households, farmers have reported owing diesel pump set as asset for agriculture. Majority of it is owned by small farmers. Marginal and small farmers from beneficiary households have some ownership of livestock. They own cows, young stock, pig and poultry. Majority of these are owned by small farmers.

It is observed from our sample that 100% of beneficiary households possess TV while for non-beneficiaries; it is 90%. In the case of mobile phones, almost 100% of households have reported

to possess it, for both the categories. 88% of beneficiary households and 80% of non-beneficiary households own bicycle. Some households have two-wheelers. No household in our sample for the state has four-wheelers or refrigerator.

It is seen from the sample that beneficiary households cultivated paddy, soyabean, mustard, fruits, vegetables and spices. Non-beneficiary households, on the other hand cultivated paddy, fruits, vegetables and spices in the majority of the cultivated area. Average production of paddy is much higher for beneficiary households (38.7 qtls) as compared to non-beneficiary households (28.4 qtls). But the price of the marketed quantity for paddy is much higher for the non-beneficiary household vis-à-vis non-beneficiary households.

Apart from cultivation, the households earn income from livestock. In our sample for Meghalaya, it is seen that average income from livestock is higher for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, 51% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 79%. Apart from that, some income comes from the animal sale and others.

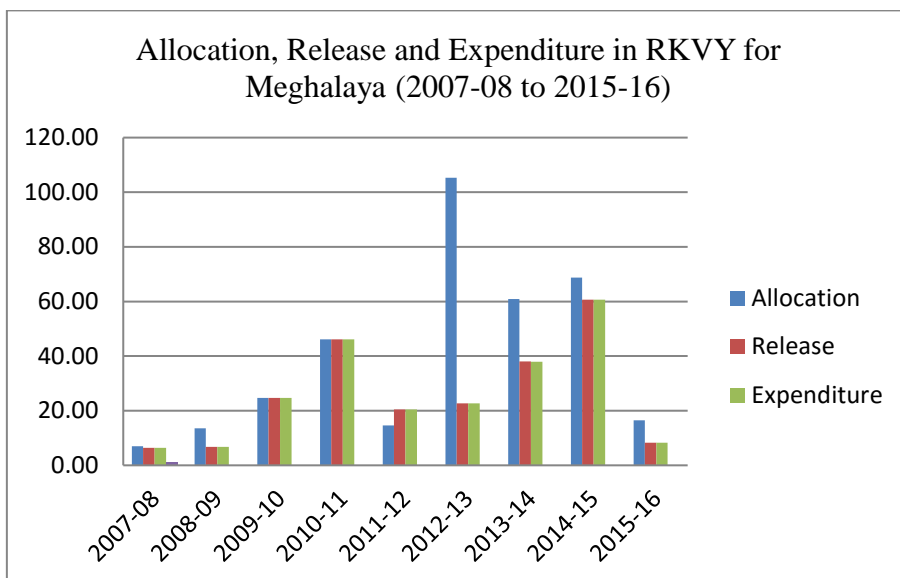
Regarding the awareness of RKVY, it is found that in our sample, households in Meghalaya are quite aware of the programme. 100% of the beneficiaries and 80% of the non-beneficiaries have heard about RKVY. 100% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. In our sample in Meghalaya, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours, Agriculture/Horticulture Department and Zila/Gram Panchayat.

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. We studied the aspects of agricultural mechanization for the project “Promotion of farm mechanization” through RKVY. Beneficiaries have received support from RKVY programme in buying tiller through this project. The majority of them have received it through price subsidy. Majority of the farmers received credit from banks. 44% of the cost of the tiller is provided by RKVY in Meghalaya.

In our study, it is found that beneficiary households have mentioned their major problem as

Subsidy paid after purchase while initial payment and Capacity building/technical advice not provided as major problems. Apart from those, delay in transfer, Long time gap between the purchase and receiving the subsidy amount, lack of marketing support and eligibility or criteria for availing the subsidy not known are mentioned as big constraints by beneficiary households. Apart from these, restricted choice poses a major problem for marginal farmers in the beneficiary category. For non-beneficiary farmers, subsidy paid after purchase while initial payment remains the highest problem, institutional financing facility not available, Capacity building/technical advice not provided, biased towards large land owners, lack of monitoring, restricted choice and lack of marketing support are major impediments. According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the program is successful in employment generation, increasing production, providing financial assistance, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in procurement in the state.

Figure 16-1: Allocation, Release and Expenditure in RKVY for Meghalaya (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 16-1: List of selected project name and code

Project Code	Project Name
1	Promotion of farm mechanization (H)

Table 16-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless			
Marginal	12(56)	6(60)	18(116)
Small	26(34)	4(30)	30(64)
Medium	2(10)		2(20)
Large			
Total	40(100)	10(100)	50(200)

Table 16-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)				1.7	3.7	8.0	
Leased-in Land/share cropping (acre)					1.0		
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.7	3.7	8.0	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rented	Electric		0.0	0.0	0.0	
		Diesel		41.8	40.3	33.3	
	Owned	Electric		0.0	0.0	0.0	
		Diesel		58.2	44.2	58.3	
Irrigated Area by Tanks (%)				0.0	15.5	8.3	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	

Table 16-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.5	3.3		
Leased-in Land/share cropping (acre)				1.0	1.0		
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.8	3.5		
Irrigated Area by canal (%)				0.0	0.0		
Irrigated Area by tube well (%)	Rented	Electric		0.0	0.0		
		Diesel		45.5	13.6		
	Owned	Electric		0.0	0.0		
		Diesel		54.5	45.5		
Irrigated Area by Tanks (%)				0.0	40.9		
Irrigated Area by Wells (%)				0.0	0.0		
Irrigated Area by others (%)				0.0	0.0		

Table 16-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landl ess	Margina l	Smal l	Mediu m	Larg e
Owned land (acre)				1.61	3.44		
Leased-in Land/share cropping (acre)					1.00		
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.61	3.50		
Irrigated Area by canal (%)				0.00	0.00		
Irrigated Area by tube well (%)	Rente d	Electric		0.00	0.00		
		Diesel		38.10	40.03		
	Owne d	Electric		0.00	0.00		
		Diesel		61.90	59.97		
Irrigated Area by Tanks (%)				0.00	0.00		
Irrigated Area by Wells (%)				0.00	0.00		
Irrigated Area by others (%)				0.00	0.00		

Table 16-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landle ss	Margina l	Smal l	Mediu m	Larg e
Owned land (acre)				1.50	3.50		
Leased-in Land/share cropping (acre)				1.00			
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.75	3.50		
Irrigated Area by canal (%)				0.00	0.00		
Irrigated Area by tube well (%)	Rente d	Electric		0.00	0.00		
		Diesel		45.45	0.00		
	Owne d	Electric		0.00	0.00		
		Diesel		54.55	100.00		
Irrigated Area by Tanks (%)				0.00	0.00		
Irrigated Area by Wells (%)				0.00	0.00		
Irrigated Area by others (%)				0.00	0.00		

Table 16-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	24	30	25
	>15 to 25	19	21	20
	>25 to 40	39	9	32
	>40 to 59	16	40	21
	>59	2	0	2
	All Groups	100	100	100
Education	Illiterate	18	16	18
	Class 1 to 5	38	19	34
	Above Class 5 to 8	23	44	28
	Above Class 8 to 12	18	21	19
	Above Class 12	1	0	1
	Other diploma	0	0	0
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	1	0	1
	All Groups	100	100	100

Table 16-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	40	40	40
salaried employment	1	0	1
Student	17	33	20
housewife	32	21	30
non-working	9	7	9
others (no separate income)	1	0	1
All Groups	100	100	100

Table 16-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	100	100
Dairy	20	60
Poultry	3	0
Agricultural Labour	15	30
Casual Labour	38	50
Other	23	30
Total	100	100

Table 16-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	146175	73075	73100	111550	55900	55650
Dairy	13125	4250	11000	6833	2750	5000
Poultry	30000	15000	15000			
Agricultural Labour	5667		5667	3833		3833
Casual Labour	7000		7000	12000		12000
Other	7689		7689	3667	500	3500
Total	78357	65667	12690	45889	38033	7856

Table 16-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	135468	67700	67768	98500	51150	47350
Dairy	10750	4000	8750	6200	2667	4600
Poultry	28000	15000	13000			
Agricultural Labour	5667		5667	6000		6000
Casual Labour	6833		6833	10800		10800
Other	8188		8188	3000	500	2833
Total	73522	60867	12655	43640	37143	6497

Table 16-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	8	8	8	13	9	18
Dairy	22	6	26	10	3	9
Agricultural Labour	0					
Casual Labour	2		2	11		
Other	-6		-6	22	0	24

Table 16-11: Average annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	5000	7500	5000	7500
Total rent on machinery (tractor, harvester etc.)	7438	7750	6870	7310
Expenditure on purchased water for irrigation	6161	6500	5861	5940
Expenditure on electricity for irrigation	0		0	0
Expenditure on diesel	14378	7500	16292	6863
Expenditure on other fuels for agriculture	1200		1200	0
Any other	46730	37200	43238	33770
<i>Total expenditure on agriculture</i>	72825	55700	70288	61383

Table 16-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	0
Total rent on machinery (tractor, harvester etc.)	8	6
Expenditure on purchased water for irrigation	5	9
Expenditure on electricity for irrigation		
Expenditure on diesel	-12	9
Expenditure on other fuels for agriculture	0	
Any other	8	10
<i>Total expenditure on agriculture</i>	4	9

Table 16-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor					
Trolley					
Weeder					
Manual/Power Sprayers					
Threshers					
Drier					
Electrical Pump sets					
Diesel Pump sets	0.00	17.65	76.47	5.88	0.00
Sprinkler sets/Drip Irrigation Equipment					
Cane Crusher/Agro-processing Equipment					
Leveller					
Fodder Choppers					
Bullock cart					
Harvest Combine					
Others	0.00	30.00	65.00	5.00	0.00

Table 16-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Electrical Pump sets	0	0	100	0	0
Diesel Pump sets	0.00	60.00	40.00	0.00	0.00
Bullock cart	0.00	50.00	50.00	0.00	0.00

Table 16-14A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0.0	26.7	73.3	0.0	0.0
Young Stock	0.0	26.7	73.3	0.0	0.0
Pig	0.0	37.5	50.0	12.5	0.0
Poultry	0.0	50.0	50.0	0.0	0.0

Table 16-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	5	0	0
Pucca	38	20	34
Semi-Pucca	58	80	62
Others	0	0	0
Total	100	100	100

Table 16-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	100	0	100	90	10	100
Telephone	0	100	100	0	100	100
Mobile phone	98	3	100	100	0	100
Cycle	88	13	100	80	20	100
Two wheeler	50	50	100	60	40	100
Four wheeler	0	100	100	10	90	100
Refrigerator	0	100	100	0	100	100

Table 16-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	2.9	2.9	38.7	32.2	1501.4	23057.1	25246
soyabean	2.7	2.7	15.0	15.0	2666.7	20000.0	20000
mustard	2.6	2.6	23.8	21.7	3280.0	24000.0	47176
fruit	3.1	3.1	87.8	87.8	1822.2	87777.8	81851.9
vegetable	1.7	1.7	77.7	76.3	1200.0	28093.8	41056.3
spices	1.6	1.6	60.5	60.5	2470.0	73200.0	25411.7

Table 16-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	2.5	2.5	28.4	22.4	2730.0	16800.0	44352
fruit	1.0	1.0	50.0	50.0	2000.0	45000.0	18333.3
vegetable	1.5	1.5	68.3	67.8	1841.7	29833.3	47602.8
spices	2.0	2.0	55.0	55.0	3200.0	90000.0	28666.7

Table 16-19: Price received by beneficiary and non-beneficiary households for paddy in 2016-17 and 2015-16 (Rs.)

Crop	Price received by for paddy									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
2016-17		1518.2	1493.2	1400.0			1487.5	4600.0	1475.0	
2015-16		1427.3	1415.9	1350.0			1412.5	1362.5		

Table 16-20: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average Annual income (Rs)	% of Total Income	Average Annual income (Rs)
Milk		51	13125.0	79	6833.3
Animal sale		34	17300.0	21	3666.7
Others		15	30000.0	0	
TOTAL		100	12011.8	100	8666.7

Table 16-21: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

		% difference in average income of beneficiaries over non-beneficiaries		% change in average income Between 2016-17 and 2015-16	
<i>Items</i>		2016-17	2015-16	Ben	Non-Ben
Milk		92	73	22	10
Animal sale		372	173	111	22
Others				7	
TOTAL		39	32	14	8

Table 16-22: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about RKVY?	100	0	100	80	20	100	96	4	100
Did you receive any benefits from RKVY in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from RKVY in the last five years excluding this year?	5	95	100	0	100	100	4	96	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	2.5	97.5	100	0	100	100	2	98	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	30	70	100	0	100	100	24	76	100

Table 16-23: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	62.5	87.5	66.7
News Paper	0.0	0.0	12.5
Agriculture/Horticulture Department	15.0	0.0	18.8
SAU	0.0	0.0	0.0
KVK	0.0	0.0	0.0
Input Suppliers	0.0	0.0	0.0
TV/Radio	0.0	0.0	0.0
Agri. Exhibitions	0.0	0.0	0.0
ZP/GP	22.5	12.5	20.8
Other sources	0.0	0.0	0.0
Total	100.0	100.0	100.0

Table 16-24: Details of intervention in agriculture mechanization in Meghalaya for beneficiaries

		Tiller
No of beneficiaries of RKVY		40
Total Cost (Rs.) (Average)		197000
Amount financed by loan (Rs.) (Average)		86825
Source of Credit		
	Bank	95
	MFI	2.5
	Money lender	
	Other	2.5
Subsidy amount from RKVY (Rs.) (Average)		90000
Mode of subsidy Transfer (%)		
	Price subsidy	100
	DBT	0

Table 16-25: Usage of mobile phone in receiving agriculture-related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	0	0	0	0	0
Marginal	100	58	0	0	0
Small	100	50	0	0	0
Medium	67	0	0	0	0
Large	0	0	0	0	0
Total	98	55	0	0	0
Non-Beneficiary					
Landless	0	0	0	0	0
Marginal	100	50	0	0	0
Small	100	25	0	0	0
Medium	0	0	0	0	0
Large	0	0	0	0	0
Total	100	40	0	0	0

Table 16-26A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		8	8	0		8
Contact details of the department which pay subsidy not available		8	12	0		10
Eligibility or criteria for availing the subsidy not known		33	50	0		43
Procedure for the subsidy very tedious		0	0	0		0
No of documents required for availing subsidy are too many		0	12	0		8
Subsidy paid after purchase while initial payment remains the highest problem		100	96	100		98
Delay in transfer		58	62	50		60
Prescribed machinery/asset not easily available in the market		17	12	0		13
Institutional financing facility not available		25	23	0		23
Capacity building/technical advice not provided		100	81	100		88
Long time gap between the purchase and receiving the subsidy amount		67	42	100		53
Biased towards large land owners		0	8	0		5
Poor quality of materials/machinery are supplied		17	31	50		28
Implementing agencies are located far away		33	19	0		23
Incidence of bribery		17	31	50		28
Lack of monitoring		42	35	50		38
Complementary inputs not available		0	23	50		18
Restricted Choice		67	31	50		43
Lack of marketing support		75	50	50		58
Any other (specify)		0	0	0		0

Table 16-26B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		67	100			80
Contact details of the department which pay subsidy not available		17	75			40
Eligibility or criteria for availing the subsidy not known		83	75			80
Procedure for the subsidy very tedious		50	25			40
No of documents required for availing subsidy are too many		33	0			20
Subsidy paid after purchase while initial payment remains the highest problem		100	100			100
Delay in transfer		83	100			90
Prescribed machinery/asset not easily available in the market		0	25			10
Institutional financing facility not available		100	100			100
Capacity building/technical advice not provided		100	75			90
Long time gap between the purchase and receiving the subsidy amount		33	25			30
Biased towards large land owners		83	100			90
Poor quality of materials/machinery are supplied		33	50			40
Implementing agencies are located far away		67	50			60
Incidence of bribery		67	50			60
Lack of monitoring		100	75			90
Complementary inputs not available		17	0			10
Restricted Choice		83	100			90
Lack of marketing support		83	100			90
Any other (specify)		0	0			0

Table 16-27A: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless										
Marginal	56	11	67	0	50	17	56	11	67	0
Small	83	3	87	0	53	33	73	13	87	0
Medium	100	0	100	0	50	50	100	0	100	0
Large										
Total	74	6	80	0	52	28	68	12	80	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 16- 27B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless								
Marginal	67	0	67	0	39	28	0	0
Small	87	0	83	3	60	27	0	0
Medium	100	0	0	100	100	0	0	0
Large								
Total	80	0	74	6	54	26	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

17 MIZORAM

Mizoram, situated in north-eastern part of India, was previously part of Assam until 1972. It became the 23rd state of India, on 20 February 1987. The state has geographic area of 21,087 square kilometers. About 76% of the state is covered by forests, 8% is fallows land, 3% is barren and considered uncultivable area, while cultivable and sown area constitutes the rest³⁹. About 95% of current Mizoram population is of diverse tribal origins. Agriculture and allied sector is one of the important sectors in the economy with its share of 18.75% in Gross State Domestic Product in 2015-16 (Economic Survey of Mizoram 2016-17). Livelihood of 60% of population depends on this sector. Net sown area in Mizoram is 114 thousand hectare in 2013-14⁴⁰. Average size of land-holding is 1.14 hectares. Major crops in Mizoram are rice, oil palm, sugarcane, cotton, maize, groundnut, coffee, vegetables and fruits etc.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Mizoram. Under RKVY scheme, Rs. 25.95 Crore was allocated for Mizoram during 2016-17, among which Rs. 20.58 Crore has been released and all the funds is spent (and UC received for that) till 5th February, 2017. From MIS report, it is found that only one project is proposed by Mizoram with cost of Rs. 0.4 Crores in 2016-17. The project is in the extension sector, with the sub-sector being Training/ Study tour. This may be because of state's inability to provide data in the RDMIS format. Figure 17-1 shows allocation, release and expenditure in RKVY in Mizoram over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Mizoram. We have selected two projects for Mizoram and analysed the performance of RKVY by collecting primary information. List of selected projects for Mizoram is given below (Table 17-1).

³⁹ <https://mizoram.gov.in/page/know-mizoram>

⁴⁰ Agriculture Statistics at a glance,

17.1 RESULTS FROM PRIMARY SURVEY

17.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Mizoram, total 100 households are considered for the survey, among which 80 households are beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, 56% are marginal farmers, 3% are small farmers and 33% belong to large category. In the non-beneficiary households, 25% is marginal, 5% is small farmers, and 70% are large farmers (Table 17-2).

17.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of operated land is higher for small farmers among the beneficiary households as compared to non-beneficiary households, while for medium farmers, non-beneficiary households operate in more land on an average. Households depend on diesel tube-wells for irrigation in Kharif season (Table 17-3A & Table 17-3B).

We have collected separate data for land-holding and irrigation for Rabi season for beneficiary households (Table 17-4A and Table 17-4B). For beneficiary households in our sample, only marginal farmers operate at Rabi season. Sources of irrigation for households are diesel tube-wells in Rabi season too.

A total number of the population covered is 450, among them, 102 people belong to beneficiary households and 102 people belong to non-beneficiary households. Among them in beneficiary households, 26% of the population is in below 15 age-group, while 10 percent are in above 60

age-group. Rest 64% population in beneficiary households is in working age-group (Table 17-5). In non-beneficiary households, 23% of the population is below 15 age-groups, while 9 percent are in above 60 age-group. Rest 69% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 65% population is in working-age group. On the education front, 10% of the population in beneficiary group and 19% of non-beneficiary group is illiterate. 85% population in beneficiary households and 81% population in non-beneficiary households have attended school (class 1 to 12); while 4% population in beneficiary households and none in non-beneficiary households have studied beyond school. Major occupation of beneficiary households is cultivation, while some members of the households are casual labor or self-employed. A large proportion of non-beneficiary households is salaried employees. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 17-6)

17.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 23% of the beneficiary households have reported income from farming. For non-beneficiary households, 13% of households have reported farming as an occupation. Apart from farming, income is reported from agriculture labor, casual labor, sericulture, poultry, dairy, and salary. More households have reported income for non-beneficiary households from sericulture, agriculture labor, salary and casual labor as compared to the beneficiary households (Table 17-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 48733 in Mizoram while the same for non-beneficiary households is Rs. 50391 in 2016-17 (Table 17-8). Average annual income for beneficiary households was Rs. 15712 in 2015-16 while it was Rs. 13630 for non-beneficiary households in the same year. Average income for beneficiary households are lower than non-beneficiary households but it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy, poultry, and sericulture apart from agriculture labor, casual labor, and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost (Table 17-8).

Table 17-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 29371 which is higher than non-beneficiaries (Rs. 20167); so is the average cost (Rs. 14200 and Rs. 9100 respectively). But average income in aggregate is higher for no-beneficiaries in 2015-16.

In terms of percentage change in income (Table 17-10), average income has increased by 8% in farming for beneficiary and 6% for non-beneficiary households. Profitability has increased considerably for farming and poultry both for beneficiary and non-beneficiary households.

17.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 17-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), Expenditure on purchased water for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that Total rent on machinery, Expenditure on diesel are higher for beneficiaries as compared to non-beneficiaries in 2016-17. On the other hand, expenditure on purchased water for irrigation is higher for non-beneficiaries than beneficiaries.

Table 17-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. There has been increase in Total rent on machinery (tractor, harvester etc.) and Expenditure on diesel in 2016-17 as compared to 2015-16.

17.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Mizoram, for beneficiary households, marginal farmers have trolley, manual / Power Sprayers, diesel pump sets, sprinkler sets / drip Irrigation Equipments, cane crusher / agro-processing equipments, fodder chopper and levelers. Small farmers have more access to implements like diesel pump sets and cane crusher / agro-processing equipments (Table 17-13A). In non-beneficiary households, farmers own Manual / Power Sprayers, Cane Crusher / Agro-processing Equipments, Fodder choppers, harvest combine etc. (Table 17-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 17-14). Farmers have cow, buffalo, young stock, goat, pig and poultry animals. Majority of the livestock is reared by marginal and large farmers.

In our sample, 18% of the households for beneficiary and 15% of non-beneficiary groups have pucca houses (Table 17-15). 71% of beneficiary households and 75% of non-beneficiary households have semi-pucca houses.

It is observed from our sample that 81% of beneficiary and 70% of non-beneficiary households have reported to possess TV (Table 17-16). Almost 100% of households have reported to have mobile phone. Both beneficiary and non-beneficiary households own bicycles, two-wheelers, while ownership of four-wheeler is very rare. Non-beneficiary households did not have refrigerator.

17.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, maize, soyabean, sugarcane and vegetable in the majority of the cultivated area (Table 17-17). But non-beneficiary households only produced paddy, maize, soyabean and vegetable in 2016-17 (Table 17-18). Average production of paddy is almost same for beneficiary households as compared to non-beneficiary households (10 qtls).

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 17-19). For the paddy, both for beneficiary households, marginal farmers are getting less prices.

17.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. In our sample for Mizoram, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 32% of the income from livestock comes from milk for beneficiary households. While beneficiary households earn income from milk, egg and animal sale; non-beneficiaries earn income from animal sale only (Table 17-20).

The inter-temporal comparison shows that average income from livestock has decreased for both beneficiaries and non-beneficiaries over the year 2015-16 to 2016-17 (Table 17-21).

17.1.1.7 AWARENESS REGARDING RKVY PROGRAM

Regarding the awareness of RKVY, it is found that in our sample, 35% of non-beneficiary households are not aware of RKVY. 100% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 18% of the beneficiary households and 40% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 62% of the beneficiary households and 40% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 17-22 that increase in awareness regarding RKVY would have positive effect on implementation of the program.

In our sample in Mizoram, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, newspaper and Agriculture / Horticulture Department (Table 17-23). For non-beneficiary households, majority of the households received information from friends and neighbours and news paper.

17.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agriculture mechanization has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agriculture mechanization through RKVY. Beneficiaries have received support from RKVY program in buying sprayers in Mizoram (Table 17-24). The majority of them have received it through price subsidy. Average subsidy received from RKVY is Rs. 633 per household. Under the project “Development of Eri Sericulture”, assistance is provided in Khawhlailung village.

Seed and planting material is also provided by RKVY in Mizoram. In our sample, it is found that seed/ planting material is provided to farmers in Khawhlailung, N.Lungleng village for production of sugarcane. Average input subsidy is Rs. 3065 per household. Benefit is provided through price subsidy.

RKVY made intervention in sericulture. DFL beneficiaries received benefit mainly through direct transfer. Average benefit received by DFL beneficiaries is Rs. 1050 for marginal farmers and Rs. 1034 for large farmers (Table 17-26). Intervention is made in villages like Bilkhawthlir, Builum, Rengtekawn, Farm Veng, Vanhne, Zobawk, Leite, Theiriat, Lunglawn, Lungsen, Ramthar, Chanmari, Phairuaaghai, Hnahthial etc.

In Mizoram, 20% of the farmers in beneficiary group and 5% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil (Table 17-27A). Among them, 20% of the households in beneficiary group are provided with soil health card. The tests have been done in government institutes for all the cases (Table 17-27B).

17.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY program as Prescribed machinery/asset not easily available in the market, Institutional financing facility not available, Poor quality of materials/machinery are supplied, Incidence of bribery, Subsidy paid after purchase while initial payment remains the highest problem, Contact details of the department which pay subsidy not available, Implementing agencies are located far away etc. For non-beneficiary farmers major constraints are: Procedure for the subsidy very tedious, Institutional financing facility not available, Implementing agencies are located far away, Restricted Choice etc. (Table 17-28A & Table 17-28B).

According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in better price realization, capacity building, providing financial assistance, employment generation, increasing production and improving market facilities. However, it appears that RKVY has not been very successful in building infrastructure, post-harvesting storage and procurement (Table 17-29A & Table 17-29B).

17.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Mizoram. Under RKVY scheme, Rs. 25.95 Crore was allocated for Mizoram during 2016-17, among which Rs. 20.58 Crore has been released and all the funds is spent (and UC received for that) till 5th February, 2017. From MIS

report, it is found that only one project is proposed by Mizoram with cost of Rs. 0.4 Crores in 2016-17. The project is in the extension sector, with the sub-sector being Training/ Study tour. This may be because of state's inability to provide data in the RDMIS format.

This study analyses performance of RKVY for the year 2016-17 in Mizoram. We have selected two projects for Mizoram and analysed the performance of RKVY by collecting primary information. In our sample in Mizoram, total 100 households are considered for the survey, among which 80 households are beneficiaries of RKVY and 20 are non-beneficiaries. In our sample, 56% are marginal farmers, 3% are small farmers and 33% belong to large category. In the non-beneficiary households, 25% is marginal, 5% is small farmers, and 70% are large farmers. In our sample, for Kharif 2016-17, the average area of operated land is higher for small farmers among the beneficiary households as compared to non-beneficiary households, while for medium farmers, non-beneficiary households operate in more land on an average. Households depend on diesel tube-wells for irrigation in Kharif season.

A total number of the population covered is 450, among them, 102 people belong to beneficiary households and 102 people belong to non-beneficiary households. Among them in beneficiary households, 26% of the population is in below 15 age-group, while 10 percent are in above 60 age-group. Rest 64% population in beneficiary households is in working age-group. In non-beneficiary households, 23% of the population is below 15 age-groups, while 9 percent are in above 60 age-group. Rest 69% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 65% population is in working-age group. On the education front, 10% of the population in beneficiary group and 19% of non-beneficiary group is illiterate. 85% population in beneficiary households and 81% population in non-beneficiary households have attended school (class 1 to 12); while 4% population in beneficiary households and none in non-beneficiary households have studied beyond school. Major occupation of beneficiary households is cultivation, while some members of the households are casual labor or self-employed. A large proportion of non-beneficiary households is salaried employees. A major part of the population belongs to the category of 'student' or 'housewife'.

In the sample of our study, 23% of the beneficiary households have reported income from farming. For non-beneficiary households, 13% of households have reported farming as an

occupation. Apart from farming, income is reported from agriculture labor, casual labor, sericulture, poultry, dairy, and salary. More households have reported income for non-beneficiary households from sericulture, agriculture labor, salary and casual labor as compared to the beneficiary households.

Average annual income of the sample beneficiary households in aggregate is Rs. 48733 in Mizoram while the same for non-beneficiary households is Rs. 50391 in 2016-17. Average annual income for beneficiary households was Rs. 15712 in 2015-16 while it was Rs. 13630 for non-beneficiary households in the same year. Average income for beneficiary households are lower than non-beneficiary households but it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy, poultry, sericulture apart from agriculture labor, casual labor, salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that Total rent on machinery, Expenditure on diesel are higher for beneficiaries as compared to non-beneficiaries in 2016-17. On the other hand, expenditure on purchased water for irrigation are higher for non-beneficiaries than beneficiaries.

In our sample in Mizoram, for beneficiary households, marginal farmers have trolley, manual / Power Sprayers, diesel pump sets, sprinkler sets / drip Irrigation Equipments, cane crusher / agro-processing equipments, fodder chopper and levelers. Small farmers have more access to implements like diesel pump sets and cane crusher / agro-processing equipments. In non-beneficiary households, farmers own Manual / Power Sprayers, Cane Crusher / Agro-processing Equipments, Fodder choppers, harvest combine etc. Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock. Farmers have cow, buffalo, young stock, goat, pig and poultry animals. Majority of the livestock is reared by marginal and large farmers.

In our sample, 18% of the households for beneficiary and 15% of non-beneficiary groups have pucca houses. 71% of beneficiary households and 75% of non-beneficiary households have semi-pucca houses. It is observed from our sample that 81% of beneficiary and 70% of non-beneficiary households have reported to possess TV. Almost 100% of households have reported to have mobile phone. Both beneficiary and non-beneficiary households own bicycles, two-wheelers, while ownership of four-wheeler is very rare. Non-beneficiary households did not have refrigerator.

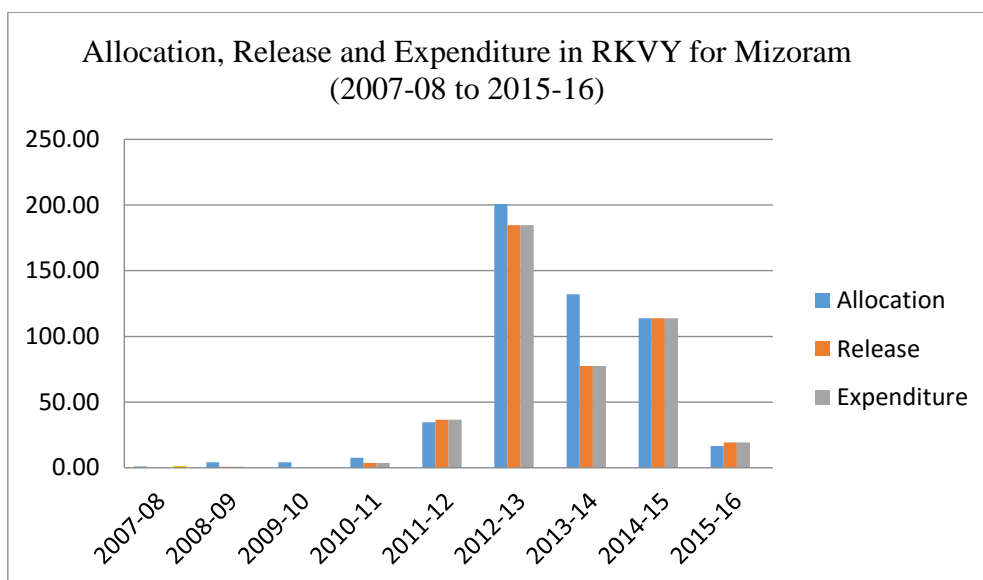
It is seen from the sample that beneficiary households cultivated paddy, maize, soyabean, sugarcane and vegetable in the majority of the cultivated area. But non-beneficiary households only produced paddy, maize, soyabean and vegetable in 2016-17. Average production of paddy is almost same for beneficiary households as compared to non-beneficiary households (10 qtls). Apart from cultivation, the households earn income from livestock. In our sample for Mizoram, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 32% of the income from livestock comes from milk for beneficiary households. While beneficiary households earn income from milk, egg and animal sale; non-beneficiaries earn income from animal sale only.

Regarding the awareness of RKVY, it is found that in our sample, 35% of non-beneficiary households are not aware of RKVY. 100% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 18% of the beneficiary households and 40% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 62% of the beneficiary households and 40% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. In our sample in Mizoram, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, newspaper and Agriculture / Horticulture Department. For non-beneficiary households, majority of the households received information from friends and neighbours and news paper.

Agriculture mechanization has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agriculture mechanization through RKVY. Beneficiaries have received support from RKVY program in buying sprayers in Mizoram. The majority of them have received it through price subsidy. Average subsidy received from RKVY is Rs. 633 per household which is provided in Khawlailung village. Seed and planting material is also provided by RKVY in Mizoram. In our sample, it is found that seed/ planting material is provided to farmers in Khawlailung, N.Lungleng village for production of sugarcane. Average input subsidy is Rs. 3065 per household. Benefit is provided through price subsidy. RKVY made intervention in sericulture. DFL beneficiaries received benefit mainly through direct transfer. Average benefit received by DFL beneficiaries is Rs. 1050 for marginal farmers and Rs. 1034 for large farmers. Intervention is made in villages like Bilkhawthlir, Builum, Rengtekawn, Farm Veng, Vanhne, Zobawk, Leite, Theiriat, Lunglawn, Lungsen, Ramthar, Chanmari, Phairuaaghai, Hnahthial etc. In Mizoram, 20% of the farmers in beneficiary group and 5% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil. Among them, 20% of the households in beneficiary group are provided with soil health card. The tests have been done in government institutes for all the cases.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY program as Prescribed machinery/asset not easily available in the market, Institutional financing facility not available, Poor quality of materials/machinery are supplied, Incidence of bribery, Subsidy paid after purchase while initial payment remains the highest problem, Contact details of the department which pay subsidy not available, Implementing agencies are located far away etc. For non-beneficiary farmers major constraints are: Procedure for the subsidy very tedious, Institutional financing facility not available, Implementing agencies are located far away, Restricted Choice etc. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in better price realization, capacity building, and providing financial assistance, employment generation, increasing production and improving market facilities. Building infrastructure, post-harvesting storage and procurement are major areas of concern, which are not very much benefitted from RKVY program.

Figure 17-1: Allocation, Release and Expenditure in RKVY for Mizoram (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 17-1: List of selected project name and code

Project No.	Project Name
1	Development of Sugarcane-based Farming System (H)
2	Development of Eri Sericulture

Table 17-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	45(56)	5(25)	50(50)
Small	2(3)	1(5)	3(3)
Medium	0(0)	0(0)	0(0)
Large	33(41)	14(70)	47(47)
Total	80(100)	20(100)	100(100)

Table 17-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)					1.4	3.0	
Leased-in Land / share cropping (acre)					1.0		
Leased-out Land / share cropping (acre)					2.0		
Total operated area (owned+ LI-LO) (acre)					1.3	3.0	
Irrigated Area by canal (%)					0.0	0.0	
Irrigated Area by tubewell (%)	Rented	Electric			0.0	0.0	
		Diesel			38.7	0.0	
	Owned	Electric			0.0	0.0	
		Diesel			61.3	100.0	
Irrigated Area by Tanks (%)					0	0	
Irrigated Area by Wells (%)					0	0	
Irrigated Area by others (%)					0	0	

Table 17-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)				0.7	4.0		
Leased-in Land / share cropping (acre)							
Leased-out Land / share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				0.7	4.0		
Irrigated Area by canal (%)				0.0			
Irrigated Area by tubewell (%)	Rented	Electric		0.0			
		Diesel		100.0			
	Owned	Electric		0.0			
		Diesel		0.0			
Irrigated Area by Tanks (%)				0.0			
Irrigated Area by Wells (%)				0.0			
Irrigated Area by others (%)				0			

Table 17-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				0.8			
Leased-in Land / share cropping (acre)				1.0			
Leased-out Land / share cropping (acre)				2.5			
Total operated area (owned+ LI-LO) (acre)				0.7			
Irrigated Area by canal (%)				0.0			
Irrigated Area by tubewell (%)	Rented	Electric		0.0			
		Diesel		41.2			
	Owned	Electric		0.0			
		Diesel		58.8			
Irrigated Area by Tanks (%)				0			
Irrigated Area by Wells (%)				0			
Irrigated Area by others (%)				0			

Table 17-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				0.5	4.0		
Leased-in Land / share cropping (acre)							
Leased-out Land / share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				0.5	4.0		
Irrigated Area by canal (%)							
Irrigated Area by tubewell (%)	Rented	Electric					
		Diesel					
	Owned	Electric					
		Diesel					
Irrigated Area by Tanks (%)							
Irrigated Area by Wells (%)							
Irrigated Area by others (%)							

Table 17-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	26	23	25
	>15 to 25	23	21	23
	>25 to 40	21	30	22
	>40 to 59	21	18	20
	>59	10	9	10
	All Groups	100	100	100
Education	Illiterate	10	19	11
	Class 1 to 5	27	27	27
	Above Class 5 to 8	24	24	24
	Above Class 8 to 12	34	30	33
	Above Class 12	4	0	3
	Other diploma	0	0	0
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	1	0	1
	All Groups	100	100	100

Table 17-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	4	2	5
agricultural labour	12	16	12
casual labour	14	25	17
self-employment	2	6	2
salaried employment	4	21	6
Sericulture	14	30	16
Student	29	0	19
housewife	11	0	14
non-working	10	0	11
All Groups	100	100	100

Table 17-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	23	13
Dairy	2	0
Poultry	3	2
Sericulture	19	22
Agricultural Labour	22	26
Casual Labour	23	24
Salary	7	11
Other	1	2
Total	100	100

Table 17-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	31702	14558	16253	21333	7200	15333
Dairy	25000	9600	15400			
Poultry	18000	5500	12500	50000	15000	35000
Sericulture	68350	20297	49575	59500	18667	42700
Agricultural Labour	36848	8000	36674	38750	4250	38042
Casual Labour	52292	6000	51917	51818	5000	51364
Salary	92067	10769	82733	85000	9000	77800
Other	75000	26125	5333	85000	45000	40000
Total	48733	15712	33021	50391	13630	36761

Table 17-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	29371	14200	14882	20167	9100	12583
Horticulture		38000				
Dairy	20000	7800	12200			
Poultry	15833	5167	10667	45000	15000	30000
Sericulture	66256	18694	49000	58200	16000	42200
Agricultural Labour	34370	4500	34174	39000	3000	38500
Casual Labour	46052	6000	45802	51818	5000	51364
Salary	84186	9750	75829	77000	7000	71400
Other	33333	11813	17583	70000	35000	35000
Total	44077	14127	29949	48717	12271	36447

Table 17-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	8	3	9	6	-21	22
Dairy	25	23	26			
Poultry	14	6	17	11	0	17
Sericulture	3	9	1	2	17	1
Agricultural Labour	7	78	7	-1	42	-1
Casual Labour	14	0	13	0	0	0
Salary	9	10	9	10	29	9

Table 17-11: Annual expenditure for agriculture (Rs.)

<i>items</i>	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	8000	0	8000	0
Total rent on machinery (tractor, harvester etc)	3311	2406	3002	2238
Expenditure on purchased water for irrigation	1440	967	3020	767
Expenditure on electricity for irrigation	0	0	0	0
Expenditure on diesel	2813	2000	2538	1800
Expenditure on other fuels for agriculture	400	0	480	0
Any other	17352	7163	13585	6475
Total expenditure on agriculture	12358	4073	10110	3690

Table 17-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	
Total rent on machinery (tractor, harvester etc)	10	8
Expenditure on purchased water for irrigation	-52	26
Expenditure on diesel	11	11
Expenditure on other fuels for agriculture	-17	
Any other	28	11
Total expenditure on agriculture	22	10

Table 17-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landles s	Margina l	Smal l	Mediu m	Larg e
Trolley	0	100	0	0	0
Manual / Power Sprayers	0	100	0	0	0
Diesel Pump sets	0	89	11	0	0
Sprinkler sets / Drip Irrigation Equipments	0	100	0	0	0
Cane Crusher / Agro-processing Equipments	0	89	7	0	4
Fodder Choppers	0	100	0	0	0
Harvest Combine	0	100	0	0	0
Others	0	100	0	0	0

Table 17-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landles s	Margina l	Smal l	Mediu m	Larg e
Manual / Power Sprayers	0	60	0	0	40
Cane Crusher / Agro-processing Equipments	0	100	0	0	0
Fodder Choppers	0	33	0	0	67
Harvest Combine	0	100	0	0	0

Table 17-14: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0	95.3	4.7	0	0
Buffalo	0	100.0	0	0	0
Young Stock	0	95.2	4.8	0	0
Goat	0	90.9	0	0	9
Pig	0	29.8	3.5	0	67
Poultry	0	54.3	0	0	46

Table 17-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	10	10	10
Pucca	18	15	18
Semi-Pucca	71	75	72
Others	0	0	0
Total	100	100	100

Table 17-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	81	19	100	70	30	100
Telephone	0	100	100	0	100	100
Mobile phone	99	1	100	100	0	100
Cycle	70	30	100	55	45	100
Two wheeler	31	69	100	35	65	100
Four wheeler	1	99	100	0	100	100
Refrigerator	12	88	100	0	100	100

Table 17-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	1	0	10	3	1077	6033	-2588
maize	1	1	8	6	983	3000	2546
soyabean	0	0	2	1	2667	1667	1978
sugarcane	1	1	107	107	272	12013	16977
vegetable	1	0	38	36	533	8111	11148

Table 17-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	1	0	10	-	-	-	-
maize	1	0	9	8	1200	5000	4600
soyabean	1	1	76	76	260	8500	11260
vegetable	1	0	60	60	350	10500	10500

Table 17-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landles	Margi	Small	Medi	Large	Landl	Margi	Small	Medi	Large
paddy		1004			1550					
maize		983								1200
soyabe		2667								
an										
sugarca		272	265		270		260			
ne										

Table 17-20: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
Milk	32	21666.7		
Eggs	10	5250.0		
Animal sale	57	11600.0	100	45000.0
TOTAL	100	11882.4	100	45000.0

Table 17-21: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

	Difference in the average income of beneficiaries over non-beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
Items	2016-17	2015-16	Ben	Non-Ben
Milk				
Eggs				
Animal sale	-74	-72	-16	-10
TOTAL	-74	-70	-21	-10

Table 17-22: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary		
	Yes	No	overall	Yes	No	overall
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	35.0	65.0	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0.0	100.0	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	86.3	13.8	100	30.0	70.0	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	17.7	82.3	100	40.0	60.0	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	61.4	38.6	100	40.0	60.0	100

Table 17-23: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbors	6.3	14.3	7.0
News Paper	17.7	85.7	23.3
Agriculture / Horticulture Department	74.7	0.0	68.6
SAU	0	0	0
KVK	0	0	0
Input Suppliers	0	0	0
TV/ Radio	0	0	0
Agri. Exhibitions	1	0	1
ZP/GP	0	0	0
Other sources	0	0	0
Total	100	100	100

Table 17-24: Details of intervention in agriculture mechanization in Mizoram for beneficiaries

		Sprayers
No of beneficiaries of RKVY		19
number of benefits received		18
Average Cost (Rs.)		1550
Average subsidy amount from RKVY (Rs.)		633
Mode of Subsidy Transfer (%)		
	Price Subsidy	100
	DBT	
If DBT, average number of days taken to receive a subsidy?		
Benefits derived from the implement (%)		
1	Solved labor problem	100
2	Enabled timely operations	0
3	Saved water	0
4	Helped in controlling weed	0
5	Helped in good plant growth	0
6	Reduced Drudgery	0
7	Helped in transportation	0
8	Reduced cost of Cultivation	0
9	Increased cropping intensity	0
10	Not useful	0
If subsidy not received, number of households who have said who would buy this implement (%)		84

Table 17-25: Interventions made under crop development

		Seed/ Planting material
No of beneficiary of RKVY		40
For which season		
	Kharif	100
	Rabi	
	Summer	
Actual cost of these materials (Rs.)		2375.5
Whether Material or Subsidy received from RKVY?		
	Material	
	Subsidy	100
If Material, quantity supplied (Kg)		
If subsidy, then	quantity of subsidized input (Kg) (Average)	2375.5
	Price paid by beneficiary (Average)	4174
	Market price (Average)	7269
	Amount of subsidy (Average)	3065
If Subsidy, Nature of subsidy		
	Price Subsidy	100
	DBT	
If DBT, the total amount received as DBT (Rs.)		
If DBT, average number of days taken to receive the amount in your bank account?		
Area in acres		0.89

Table 17-26: Interventions in sericulture (in the year 2016-17)

	DFL beneficiaries			
	Average cost per unit (Rs.)	Average Subsidy received (Rs.)	Mode of subsidy transfer	
			Price Subsidy	DBT
Landless				
Marginal	2375	1050	0	100
Small				
Medium				
Large	2169	1034	3	97
Rearing Beneficiaries				
Landless				
Marginal	40000	40000		
Small				
Medium				
Large	40000	40000		

Table 17-27A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Whether soil is tested in your area?			soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless						
Marginal	33.3	66.7	100.0	33.3	66.7	100.0
Small	50.0	50.0	100.0	50.0	50.0	100.0
Medium						
Large	0.0	100.0	100.0	0.0	100.0	100.0
Total	20.0	80.0	100.0	20.0	80.0	100.0
Non-beneficiary						
Landless						
Marginal	20.0	80.0	100.0	20.0	80.0	100.0
Small	0.0	100.0	100.0	0.0	100.0	100.0
Medium						
Large	0.0	100.0		0.0	100.0	
Total	5.0	95.0	100.0	5.0	95.0	100.0

Table 17-27B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium			
Large			
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small			
Medium			
Large			
Total	100	0	0

Table 17-28A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY program details not easily available		7	0		3	5
Contact details of the department which pay subsidy not available		64	100		58	63
Eligibility or criteria for availing the subsidy not known		64	50		55	8
Procedure for the subsidy very tedious		44	50		79	59
No of documents required for availing subsidy are too many		38	100		48	44
Subsidy paid after purchase while initial payment remains the highest problem		76	100		48	65
Delay in transfer		73	0		42	59
Prescribed machinery/asset not easily available in the market		38	100		97	80
Institutional financing facility not available		67	100		97	75
Capacity building/technical advice not provided		64	50		91	41
Long time gap between the purchase and receiving the subsidy amount		58	0		21	41
Biased towards large land owners		42	0		73	54
Poor quality of materials/machinery are supplied		78	100		61	71
Implementing agencies are located far away		60	50		67	63
Incidence of bribery		69	0		67	66
Lack of monitoring		56	50		58	56
Complementary inputs not available		51	0		64	55
Restricted Choice		60	0		58	58
Lack of marketing support		67	100		42	58
Any other		0	0		0	0

Table 17-28B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY program details not easily available		40	100			50
Contact details of the department which pay subsidy not available		40	0			65
Eligibility or criteria for availing the subsidy not known		60	100			40
Procedure for the subsidy very tedious		100	100			85
No of documents required for availing subsidy are too many		40	0			45
Subsidy paid after purchase while initial payment remains the highest problem		60	100			60
Delay in transfer		20	100			50
Prescribed machinery/asset not easily available in the market		60	0			60
Institutional financing facility not available		100	100			85
Capacity building/technical advice not provided		100	0			65
Long time gap between the purchase and receiving the subsidy amount		40	100			50
Biased towards large land owners		80	0			60
Poor quality of materials/machinery are supplied		60	100			60
Implementing agencies are located far away		80	100			80
Incidence of bribery		60	100			65
Lack of monitoring		80	0			55
Complementary inputs not available		40	100			50
Restricted Choice		100	100			75
Lack of marketing support		40	0			60
Any other		0	0			0

Table 17-29A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless										
Marginal	54	36	78	12	46	48	68	26	54	38
Small	33	33	33	33	67	0	67	0	0	67
Medium										
Large										
Total	54	26	51	29	56	27	68	14	59	22

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 17- 29B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless								
Marginal	30	26	60	36	6	78	0	0
Small	0	67	33	33	33	33	0	0
Medium								
Large								
Total	22	30	64	20	12	64	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

18 NAGALAND

The State of Nagaland was inaugurated as the 16th State of the Indian Union in 1963. The state is bounded by Assam in the West, Myanmar (Burma) on the east, Arunachal Pradesh and part of Assam on the North and Manipur in the South. Geographical area of the state is 1658 thousand hectares. The state is inhabited by 16 major tribes along with other sub-tribes. Agriculture and allied services is one of the important sectors in Nagaland economy. In 2015-16, the agricultural sector accounted for about 30 percent of the State's GDP⁴¹. Net sown Area in Nagaland is 380 thousand hectares in 2013-14⁴². The average size of holdings in the state was 6.02 hectares in 2010-11, which varies from 0.51 hectare for marginal farmers to 17.57 hectares for large farmers. Principal crops are rice, oilseed, coffee, cardamom, tea, arums, yams, millet, maize, potatoes and sugarcane. Vegetable crops are melon, cucumbers, spinach leaf, mustard, onion, chillies, carrots, tomatoes, brinjal etc.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Nagaland. Under RKVY scheme, Rs. 36.94 crore was allocated, among which Rs. 34.94 crore was released and all the released amount was spent for Nagaland for 2016-17 till 5.2.2018. According to MIS Report, In Nagaland, in 2016-17, highest number of projects is allocated to Natural resource management among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 20 projects proposed with priority sectors being Agriculture mechanization and Natural resource management. There is no project allocated in larger (cost > 5 crore) category. In aggregate, up to the date the data was accessed, 54 projects are pointed out which needs funds from RKVY in 2016-17, among which Natural resource management (11.9 crore) is given highest priority both in terms of cost and number of projects. Another priority area is non-farm activities but they are mainly small-sized projects. Project with highest average cost is proposed for Marketing and Post-Harvest Management.

⁴¹ Nagaland Vision 2030, Government of Nagaland

⁴² Agriculture Statistics 2016, Ministry of Agriculture & Farmers Welfare Department of Agriculture, Cooperation & Farmers Welfare, Directorate of Economics and Statistics, Govt. of India.

This study analyses performance of RKVY for the year 2016-17 in Nagaland. We have selected 2 projects for Nagaland and analysed the performance of RKVY by collecting information through primary survey. List of selected projects for Nagaland is given below (Table 18-1).

18.1 RESULTS FROM PRIMARY SURVEY

18.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Nagaland, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, the 92% of beneficiary households are marginal farmers, 26% are small farmers and 2% are medium farmers. In the non-beneficiary households, 22% are landless, 7% are marginal and 1% are small farmers (Table 18-2).

18.1.1.1 LAND-HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households, but for small farmers, the situation is opposite. Households depend on canals, diesel tube-wells for irrigation in Kharif season. Majority of farmers use owned diesel tube-wells (Table 18-3A & 18-3B).

We have collected separate data for land-holding and irrigation for Kharif and Rabi season. For Rabi 2016-17, the average area of operated land is higher for marginal farmers among the

beneficiary households as compared to non-beneficiary households (Table 18-4A &18-4B). Households depend on canals and tube-wells (diesel) for irrigation in Rabi season.

A total number of the population covered is 758, among them, 605 people belong to beneficiary households and 153 people belong to non-beneficiary households (Table 18-5). Among them in beneficiary households, 22% of the population is below 15 age group, while 10 percent are in above 60 age group. Rest 69% population in beneficiary households is in working age-group. In non-beneficiary households, 22% of the population is below 15 age groups, while 5 percent are in above 60 age group. Rest 79% population in non-beneficiary households is in working age-group. On the education front, 7% of the population in beneficiary group and non-beneficiary group are illiterate. 87% population in beneficiary households and 86% population in non-beneficiary households have attended school (class 1 to 12); while 4% and 3% population in beneficiary and non-beneficiary households, respectively have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife' (Table 18-6).

18.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 41% of the beneficiary households have reported income from farming. For non-beneficiary households also, 36% of households have reported farming as an occupation. 2% of beneficiary households and 4% of non-beneficiary households have reported income from dairy. 20% of beneficiary and 24% of beneficiary households have reported income from work as casual labour (Table 18-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 90402 in Nagaland while the same for non-beneficiary households is Rs. 86425 in 2016-17 (Table 18-8). Average annual income for beneficiary households was Rs. 86042 in 2015-16 while it was Rs. 66500 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy, poultry and sericulture apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost.

Average income from dairy is also higher for beneficiary households as compared to non-beneficiary households (Table 18-8).

Table 18-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 112908 which is higher than non-beneficiaries (Rs. 83000); so is the average cost (Rs. 52788 and Rs. 41724 respectively).

In terms of percentage change in income (Table 18-10), average income has increased by 9% in farming for beneficiary and 10% for non-beneficiary households. Average cost has increased for both beneficiary and non-beneficiary households.

18.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 18-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that components like Total rent on machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and Expenditure on other fuels for agriculture are higher for beneficiaries as compared to non-beneficiaries in 2016-17.

Table 18-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in all the components for beneficiary households except Expenditure on purchased water for irrigation and Expenditure on other fuels for agriculture.

18.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Nagaland, for beneficiary households, majority of tractor, trolley, weeder, electric and diesel pump sets, leveller etc are owned by small farmers, while marginal farmers own majority of implements like Manual / Power Sprayers, fodder choppers etc. (Table 18-

13A). In non-beneficiary households, farmers own equipments like weeder, manual / power Sprayers, diesel pump sets, fodder chopper etc. (Table 18-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 18-14). Marginal and small farmers own majority of the livestock among the beneficiaries i.e. cows, buffalos, young stock, goat, pig, poultry etc.

In our sample, 8% of the households for beneficiary and 13% of non-beneficiary groups have kachha houses (Table 18-15). 12% households in beneficiary category and 7% of non-beneficiary category have pucca houses.

It is observed from our sample that 81% of beneficiary households possess TV while for non-beneficiaries; it is 63% (Table 18-16). In the case of mobile phones 100% of beneficiary and 97% of non-beneficiary households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles and two-wheelers are there, but four-wheelers are very rare. 9% of beneficiary and 7% on non-beneficiary households own refrigerator.

18.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, bajra, maize, moong, soyabean, mustard, cotton, sugarcane, fruit, spices and vegetables in the majority of the cultivated area (Table 18-17). But for non-beneficiary households, the emphasis is on paddy, bajra, maize, moong, soyabean, mustard and vegetables (Table 18-18). Average production of paddy is higher for beneficiary (37.9 qtls) and non-beneficiary households (35 qtls). Average production of soyabean and mustard is higher for non-beneficiary households as compared to beneficiary households. Price of the marketed quantity for paddy, soyabean and mustard are more for the beneficiary household vis-à-vis non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 18-19). For wheat, bajra, soyabean and mustard, marginal farmers are getting higher price as

compared to small farmers for beneficiary households. But for paddy, maize and moong; the situation is opposite (Table 18-19).

In 2015-16 also, it is seen that price received by marginal farmers is low for paddy, bajra, maize, moong as compared to small farmers for beneficiary households.

18.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. In our sample for Nagaland, it is seen that average income from livestock is lower for non-beneficiary households as compared to beneficiary households. Income from livestock is generated from milk, meat, eggs, animal sale etc. (Table 18-21).

The inter-temporal comparison shows that average income from the production of milk is higher for beneficiaries in 2016-17 and 2015-16. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for non-beneficiaries (Table 18-22).

18.1.1.7 AWARENESS REGARDING RKVY

Regarding the awareness of RKVY, it is found that in our sample, 20% of non-beneficiary households are not aware of RKVY. 73% households in the beneficiary category have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But 63% non-beneficiary households are deprived of any benefits throughout these years. 27% of the beneficiary households and 17% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 51% of the beneficiary households and 30% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 18-21 that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY. It is also seen that many households who are receiving benefit from RKVY, are receiving benefits from other government schemes too. There is a need of convergence of the schemes and better monitoring of the system so that the distribution of government schemes becomes more equal in nature.

In our sample in Nagaland, the majority of the beneficiary households had received information regarding RKVY from Agriculture / Horticulture Department, Friends and neighbours; and Zila Panchayet and Gram Panchayet (Table 18-22). For non-beneficiary households, majority of the households received information from friends and neighbours, news paper and Agriculture / Horticulture Department.

18.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY (Table 18-23A & Table 18-23B). Under the project “Crop Development”, the farmers got assistance in paddy and soyabean production in villages like Ekoktchii, Pfutseromi, Lekromi, Kikruma etc. The majority of the farmers have received benefit through material subsidy (Table 18-23B).

Under the project “Development of Eri Sericulture”, farmers received assistance in sericulture. DFL beneficiaries received benefit through price subsidy and direct transfer while for rearing beneficiaries; benefit is provided mainly through direct benefit (Table 18-24). Intervention is made in villages like Ghokito(Hokheje) and Phaijol.

In Nagaland, 91% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 18-25A). Among them, 94% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 18-25B).

Within our sample in Nagaland, 33% of beneficiary households had undergone training and demonstration (Table 18-26). 78% of the households found training beneficial and 95% among them want more training.

The study has also collected data on mobile usage. We found that 100% of households have mobile phones in beneficiary group and 97% of households has received text messages (Table 18-27). But only 18% of the beneficiary households received agriculture-related SMS. 18% households also received messages in local language.

18.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY as Restricted Choice, Lack of monitoring, Lack of marketing support, Subsidy paid after purchase while initial payment etc. (Table 18-28A). For non-beneficiaries, major problems are: Lack of monitoring, Restricted Choice, Incidence of bribery, Capacity building/technical advice not provided, prescribed machinery/asset not easily available in the market etc. (Table 18-28B).

Beneficiary respondents say that the RKVY has been successful in increasing production, generating employment, capacity building, providing financial assistance and improving price realization, but not in capacity building, post-harvesting storage or procurement (Table 18-29A & Table 18-29B).

18.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Nagaland. Under RKVY scheme, Rs. 36.94 crore was allocated, among which Rs. 34.94 crore was released and all the released amount was spent for Nagaland for 2016-17 till 5.2.2018. According to MIS Report, In Nagaland, in 2016-17, highest number of projects is allocated to Natural resource management among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 20 projects proposed with priority sectors being Agriculture mechanization and Natural resource management. There is no project allocated in larger (cost > 5 crore) category. In aggregate, up to the date the data was accessed, 54 projects are pointed out which needs funds from RKVY in 2016-17, among which Natural resource management (11.9 crore) is given highest priority both in terms of cost and number of projects. Another priority area is non-farm activities but they are mainly small-sized projects. Project with highest average cost is proposed for Marketing and Post-Harvest Management.

This study analyses performance of RKVY for the year 2016-17 in Nagaland. We have selected 2 projects for Nagaland and analysed the performance of RKVY by collecting information through primary survey. In our sample in Nagaland, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries.

In our sample, the 92% of beneficiary households are marginal farmers, 26% are small farmers and 2% are medium farmers. In the non-beneficiary households, 22% are landless, 7% are marginal and 1% are small farmers.

In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households, but for small farmers, the situation is opposite. Households depend on canals, diesel tube-wells for irrigation in Kharif season. Majority of farmers use owned diesel tube-wells.

A total number of the population covered is 758, among them, 605 people belong to beneficiary households and 153 people belong to non-beneficiary households. Among them in beneficiary households, 22% of the population is below 15 age group, while 10 percent are in above 60 age group. Rest 69% population in beneficiary households is in working age-group. In non-beneficiary households, 22% of the population is below 15 age groups, while 5 percent are in above 60 age group. Rest 79% population in non-beneficiary households is in working age-group. On the education front, 7% of the population in beneficiary group and non-beneficiary group are illiterate. 87% population in beneficiary households and 86% population in non-beneficiary households have attended school (class 1 to 12); while 4% and 3% population in beneficiary and non-beneficiary households, respectively have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife'.

Average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy, poultry and sericulture apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is also higher for beneficiary households as compared to non-beneficiary households.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under "other" category which comprises expenditure

on seed, fertilizer etc. The component-wise analysis shows that components like Total rent on machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and Expenditure on other fuels for agriculture are higher for beneficiaries as compared to non-beneficiaries in 2016-17.

In our sample in Nagaland, for beneficiary households, majority of tractor, trolley, weeder, electric and diesel pump sets, leveller etc are owned by small farmers, while marginal farmers own majority of implements like Manual / Power Sprayers, fodder choppers etc. In non-beneficiary households, farmers own equipments like weeder, manual / power sprayers, diesel pump sets, fodder chopper etc. Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock. Marginal and small farmers own majority of the livestock among the beneficiaries i.e. cows, buffalos, young stock, goat, pig, poultry etc.

In our sample, 8% of the households for beneficiary and 13% of non-beneficiary groups have kachha houses. 12% households in beneficiary category and 7% of non-beneficiary category have pucca houses. It is observed from our sample that 81% of beneficiary households possess TV while for non-beneficiaries; it is 63%. In the case of mobile phones 100% of beneficiary and 97% of non-beneficiary households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles and two-wheelers are there, but four-wheelers are very rare. 9% of beneficiary and 7% on non-beneficiary households own refrigerator.

It is seen from the sample that beneficiary households cultivated paddy, wheat, bajra, maize, moong, soyabean, mustard, cotton, sugarcane, fruit, spices and vegetables in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy, bajra, maize, moong, soyabean, mustard and vegetables. Average production of paddy is higher for beneficiary (37.9 qtls) and non-beneficiary households (35 qtls). Average production of soyabean and mustard is higher for non-beneficiary households as compared to beneficiary households. Price of the marketed quantity for paddy, soyabean and mustard are more for the beneficiary household vis-à-vis non-beneficiary households. Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For wheat, bajra, soyabean and mustard,

marginal farmers are getting higher price as compared to small farmers for beneficiary households. But for paddy, maize and moong; the situation is opposite. Apart from cultivation, the households earn income from livestock. In our sample for Nagaland, it is seen that average income from livestock is lower for non-beneficiary households as compared to beneficiary households. Income from livestock is generated from milk, meat, eggs, animal sale etc.

Regarding the awareness of RKVY, it is found that in our sample, 20% of non-beneficiary households are not aware of RKVY. 73% households in the beneficiary category have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But 63% non-beneficiary households are deprived of any benefits throughout these years. 27% of the beneficiary households and 17% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 51% of the beneficiary households and 30% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. Beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY. It is also seen that many households who are receiving benefit from RKVY, are receiving benefits from other government schemes too. There is a need of convergence of the schemes and better monitoring of the system so that the distribution of government schemes becomes more equal in nature.

In our sample in Nagaland, the majority of the beneficiary households had received information regarding RKVY from Agriculture / Horticulture Department, Friends and neighbours; and Zila Panchayet and Gram Panchayet. For non-beneficiary households, majority of the households received information from friends and neighbours, news paper and Agriculture / Horticulture Department.

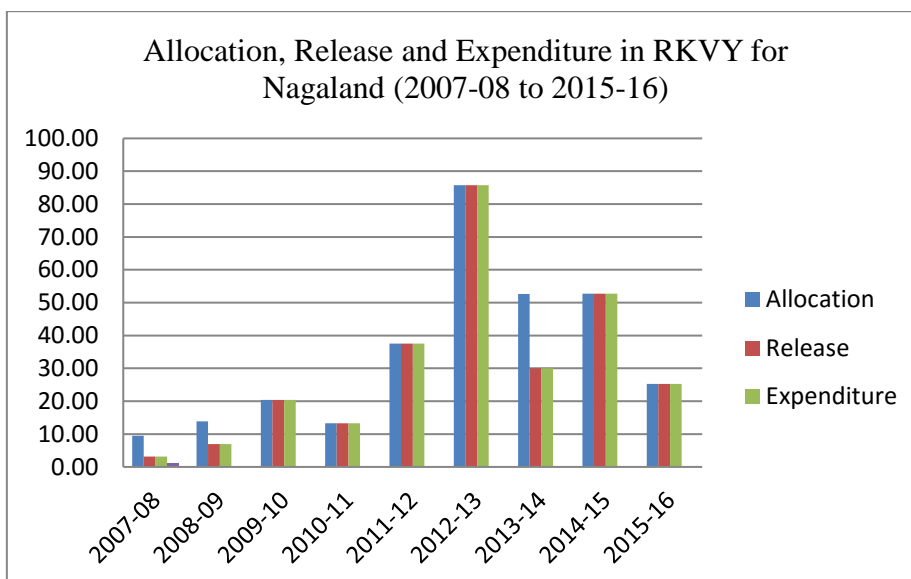
Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. Under the project “Crop Development”, the farmers got assistance in paddy and soyabean production in villages like Ekoktchii, Pfutseromi, Lekromi, Kikruma, etc. The majority of the farmers have received benefit through material subsidy. Under the project “Development of Eri Sericulture”,

farmers received assistance in sericulture. DFL beneficiaries received benefit through price subsidy and direct transfer while for rearing beneficiaries; benefit is provided mainly through direct benefit. Intervention is made in villages like Ghokito(Hokheje) and Phaijol.

In Nagaland, 91% of the farmers have reported that the soil has been tested to know the nature of the soil. Among them, 94% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Nagaland, 33% of beneficiary households had undergone training and demonstration. 78% of the households found training beneficial and 95% among them want more training.

Beneficiary households find that the major problems related to the implementation of the RKVY are restricted choice, lack of monitoring, lack of marketing support, subsidy paid after purchase while initial payment, etc. For non-beneficiaries, major problems are the lack of monitoring, restricted choice, incidence of bribery, capacity building/technical advice not provided, prescribed machinery/asset not easily available in the market, etc. According to the feedback from the beneficiary respondents about the success of the RKVY, it is stated that the programme is successful in increasing production, generating employment, capacity building, providing financial assistance, better price realization etc. However, it appears that RKVY has not been very successful in capacity building, post-harvesting storage and procurement.

Figure 18-1: Allocation, Release and Expenditure in RKVY for Nagaland (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 18-1: List of selected project name and code

Project Code	Project Name
1	Agriculture Mechanization
2	Crop Development
3	Development of Eri Sericulture

Table 18-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number)(% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	92(77)	22(73)	114(76)
Small	26(22)	7(23)	33(22)
Medium	2(2)	1(3)	3(2)
Large	0(0)	0(0)	0(0)
Total	120(100)	30(100)	150(100)

Table 18-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.88	4.00	8.50	
Leased-in Land / share cropping (acre)				1.11	2.40		
Leased-out Land / share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.98	4.46	8.50	
Irrigated Area by canal (%)				19.6	25.8	0.0	
Irrigated Area by tube-well (%)	Rente d	Electric		0.0	0.0	0.0	
		Diesel		15.4	9.1	0.0	
	Owne d	Electric		0.0	0.0	0.0	
		Diesel		31.8	26.0	100.0	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				33.2	39.0	0.0	

Table 18-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.71	4.43		
Leased-in Land / share cropping (acre)				1.00	2.00		
Leased-out Land / share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.68	5.00		
Irrigated Area by canal (%)				20.0	0.0		
Irrigated Area by tube-well (%)	Rente d	Electric		0.0	0.0		
		Diesel		0.0	0.0		
	Owne d	Electric		0.0	0.0		
		Diesel		26.7	29.6		
Irrigated Area by Tanks (%)				0.0	0.0		
Irrigated Area by Wells (%)				0.0	0.0		
Irrigated Area by others (%)				53.3	70.4		

Table 18-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.4	2.4	8.5	
Leased-in Land / share cropping (acre)				1.0	2.0		
Leased-out Land / share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.5	2.6	8.5	
Irrigated Area by canal (%)				18.5	28.1	0.0	
Irrigated Area by tube-well (%)	Rente d	Electric		0.0	0.0	0.0	
		Diesel		21.4	7.0	0.0	
	Owne d	Electric		0.0	0.0	0.0	
		Diesel		33.8	29.8	100.0	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				26.4	35.1	0.0	

Table 18-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.2	2.6		
Leased-in Land / share cropping (acre)				1.0			
Leased-out Land / share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.2	2.6		
Irrigated Area by canal (%)				15.8	0.0		
Irrigated Area by tube-well (%)	Rente d	Electri c		0.0	0.0		
		Diesel		0.0	0.0		
	Owne d	Electri c		0.0	0.0		
		Diesel		31.6	50.0		
Irrigated Area by Tanks (%)				0.0	0.0		
Irrigated Area by Wells (%)				0.0	0.0		
Irrigated Area by others (%)				52.6	50.0		

Table 18-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	22	22	22
	>15 to 25	26	25	26
	>25 to 40	22	27	23
	>40 to 59	21	21	21
	>59	10	5	9
	All Groups	100	100	100
Education	Illiterate	7	7	7
	Class 1 to 5	25	28	25
	Above Class 5 to 8	25	24	25
	Above Class 8 to 12	37	34	36
	Above Class 12	4	3	4
	Other diploma	0	1	0
	can read and write	1	1	1
	can read only	0	0	0
	can count only	0	2	1
	could not attend class 1	0	0	0
	All Groups	100	100	100

Table 18-6: Occupational distribution of members of sample households (%)

	Beneficiary	Non-Beneficiary	Total
cultivation	25	50	20
agricultural labour	5	7	8
dairy	0	1	3
casual labour	9	17	12
self-employment	3	11	4
salaried employment	3	10	4
forestry	0	0	0
Horticulture	0	0	0
Floriculture	0	0	0
Sericulture	2	3	1
Fishing	0	0	0
Aquaculture	0	0	0
Poultry	0	2	1
beekeeping	0	0	0
Student	27	0	23
housewife	17	0	13
non-working	8	0	11
others (no separate income)	0	0	0
All Groups	100	100	100

Table 18-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	41	36
Horticulture	0	0
Floriculture	0	0
Dairy	2	4
Poultry	3	5
Sericulture	14	8
Agricultural Labour	9	9
Casual Labour	20	24
Forestry	0	0
Fishing	0	0
Beekeeping	0	0
Salary	6	5
Other	7	10
Total	100	100

Table 18-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	123125	57025	66100	91621	45052	46569
Dairy	29000	13000	16000	20000	8667	11333
Poultry	34333	10111	24222	26750	8375	18375
Sericulture	57250	14949	42675	53000	15000	38000
Agricultural Labour	48077	10000	47692	57143		57143
Casual Labour	54052		54052	60000		60000
Salary	141412	10688	131353	133000	11667	124250
Other	116714	80925	39643	212500	32188	180313
Total	90402	44674	45728	86425	32991	53434

Table 18-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	112908	52788	60121	83000	41724	41276
Dairy	23500	10800	14500	15333	7667	7667
Poultry	28813	8778	18938	24875	7100	17775
Sericulture	54200	13410	41125	45333	14000	31333
Agricultural Labour	49000	8000	48704	59000		59000
Casual Labour	61390		61390	55833		55833
Salary	131125	9625	121500	127000	11667	118250
Other	114045	53010	65855	62444	26833	35611
Total	86042	39108	46934	66500	30035	36465

Table 18-10: Change in Average income and cost of beneficiaries and non-beneficiaries(%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	9	8	10	10	8	13
Dairy	23	20	10	30	13	48
Poultry	19	15	28	8	18	3
Sericulture	6	11	4	17	7	21
Agricultural Labour	-2	25	-2	-3		-3
Casual Labour	-12		-12	7		7
Salary	8	11	8	5	0	5
Other	2	53	-40	240	20	406

Table 18-11: Annual expenditure for agriculture (Rs.)

items	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	7423	5333	7333	5333
Total rent on machinery (tractor, harvester etc)	5074	1537	3001	1460
Expenditure on purchased water for irrigation	1636	750	1722	750
Expenditure on electricity for irrigation	0	0	0	0
Expenditure on diesel	6203	2433	4327	2367
Expenditure on other fuels for agriculture	514	300	532	200
Any other	53758	40045	48718	37141
Total expenditure on agriculture	61392	41042	53860	38148

Table 18-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

items	Beneficiary	Non-Beneficiary
Rent on leased-in land	1	0
Total rent on machinery (tractor, harvester etc)	69	5
Expenditure on purchased water for irrigation	-5	0
Expenditure on electricity for irrigation	-	-
Expenditure on diesel	43	3
Expenditure on other fuels for agriculture	-3	50
Any other	10	8
Total expenditure on agriculture	14	8

Table 18-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

Assets	Beneficiary					
	Landless	Marginal	Small	Medium	Large	Total
Tractor	0	0	100	0	0	100
Trolley	0	0	100	0	0	100
Weeder	0	0	100	0	0	100
Manual / Power Sprayers	0	75	24	2	0	100
Electrical Pump sets	0	0	100	0	0	100
Diesel Pump sets	0	60	33	7	0	100
Leveller	0	0	100	0	0	100
Fodder Choppers	0	56	40	4	0	100
Bullock cart	0	0	0	100	0	100
Others	0	77	23	0	0	100

Table 18-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary					
	Landless	Marginal	Small	Medium	Large	Total
Weeder	0	0	100	0	0	100
Manual / Power Sprayers	0	70	30	0	0	100
Diesel Pump sets	0	33	67	0	0	100
Fodder Choppers	0	100	0	0	0	100

Table 18-14: Livestock ownership by beneficiary households (2016-17)(% of number of livestock)

<i>Livestock</i>	Beneficiary					
	Landless	Marginal	Small	Medium	Large	Total
Cow	0	48	48	5	0	100
Buffalo	0	50	25	25	0	100
Young Stock	0	57	29	14	0	100
Goat	0	88	13	0	0	100
Pig	0	66	32	3	0	100
Poultry	0	79	21	0	0	100
Others	0	100	0	0	0	100

Table 18-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	8	13	9
Pucca	12	7	11
Semi-Pucca	80	80	80
Others	0	0	0
Total	100	100	100

Table 18-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	81	19	100	63	37	100
Telephone	0	100	100	0	100	100
Mobile phone	100	0	100	97	3	100
Cycle	51	49	100	47	53	100
Two wheeler	42	58	100	33	67	100
Four-wheeler	1	99	100	0	100	100
Refrigerator	9	91	100	7	93	100

Table 18-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	2.1	1.8	37.9	33.4	1572	22220	30214
bajra	1.1	1.2	10.3	9.8	1063	4813	5547
maize	0.9	0.9	15.0	14.3	1507	10119	11417
moong	1.6	0.9	7.6	7.6	3378	11972	13643
soyabean	0.7	0.8	5.2	5.1	3106	6112	9692
mustard	0.8	0.8	4.9	4.4	3135	5250	8387
cotton	1.5	1.5	15.0	15.0	4250	29500	34250
sugarcane	1.0	1.0	110.0	110.0	287	14667	16867
fruit	0.5	0.5	68.3	68.3	1117	24500	51806
vegetable	1.0	1.0	54.7	54.3	821	22824	21765
spices	0.9	1.0	10.0	10.0	36304	27500	336832

Table 18-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	2.1	2.2	35.0	30.7	1550	21379	26194
bajra	1.0	1.5	10.3	10.0	1075	4750	6000
maize	1.2	1.7	17.7	17.3	1525	14417	11890
moong	2.3	2.0	11.3	11.3	3625	18000	22781
soyabean	0.7		4.7	4.3	2733	4500	7162
mustard	0.8		4.5	4.0	2850	4600	6800
vegetable	1.2	1.2	51.8	51.4	981	22833	27619

Table 18-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1561	1605	1600			1515	1646		
bajra		1070	1060	1000			1000	1150		
maize		1370	1988				1138	2300		
moong		3286	3733	3600			3600	3633		
soyabean		3175	2940				2733			
mustard		3150	3000				2850			
cotton			4250							
sugarcane		287								

Table 18-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Lan dles s	Mar ginal	Small	Mediu m	Large	Lan dles s	Margin al	Small	Mediu m	Lar ge
paddy		1518	1555	1555			1471	1599		
bajra		905	1002	950			900	1085		
maize		1313	1931				1081	2230		
moong		3211	3653	3520			3550	3553		
soyabean		3050	2606				2600			
mustard		3017	2800				2750			
cotton			4190							
sugarcane		275								

Table 18-21: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
Items	% of Total Income	Average Annual income (Rs.)	% of Total Income	Average Annual income (Rs.)
Milk	41	42500	83	20000
Meat	11	22000		
Eggs	15	30000		
Animal sale	22	11250	17	4000
Others	11	11500	0	
TOTAL	100	20500	100	12000

Table 18-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non- beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	Milk	113	133	21
Animal sale	181	100	13	-20
TOTAL	71	78	15	20

Table 18-21: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	80	20	100	96	4	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	73	27	100	37	63	100	66	34	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	27	73	100	17	83	100	25	75	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	51	49	100	30	70	100	47	53	100

Table 18-22: Source of Awareness regarding RKVY (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbours	7	24
News Paper	0	24
Agriculture / Horticulture Department	88	52
SAU	0	0
KVK	0	0
Input Suppliers	0	0
TV/ Radio	0	0
Agri. Exhibitions	0	0
ZP/GP	4	0
Other sources	0	0
Total	100	100

Table 18-23A: Distribution of farmers in crop development (in 2016-17) in Nagaland for beneficiaries

	Crop1	Crop2
Landless	0	0
Marginal	87.5	83.3
Small	12.5	16.7
Medium	0	0
Large	0	0
Total	100	100

Table 18-23B: Details of Interventions made under crop development (in 2016-17) in Nagaland for beneficiaries

	Crop1	Crop2
No of beneficiary of RKVY	40	30
Average actual cost of these materials (Rs.)	9513	9926
Whether Material or Subsidy received from RKVY (%)		
Material	98	100
Subsidy	3	0
If Material, quantity supplied (Kg)	2538	6793

Table 18-25A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?			soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless			100			-
Marginal	88	12	100	91	9	100
Small	100	0	100	100	0	100
Medium	100	0	100	100	0	100
Large			100			100
Total	91	9	100	94	6	100
Non-beneficiary						
Landless			-			-
Marginal	64	36	100	86	14	100
Small	100	0	100	100	0	100
Medium			-			-
Large			100			100
Total	72	28	100	90	10	100

Table 18-25B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless	-	-	-
Marginal	100	0	0
Small	100	0	0
Medium	100		
Large		0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium			
Large		0	0
Total	100	0	0

Table 18-26: Information regarding training and demonstration among beneficiaries under RKVY (% of households) (2016-17)

			Type of training					
			Dem onstr ation	Field Visit	Kris hiM ela	Othe rs		
	Numb er of Benef iciarie s	% of beneficiary households undergone training					% of households found training beneficial	% of household s who want more training
Landless								
Marginal	92	38	100	0	0	0	74	94
Small	26	19	100	0	0	0	100	100
Medium	2	0						
Large								
Total	120	33	100	0	0	0	78	95

Table 18-27: Information regarding mobile usage among beneficiaries and non-beneficiaries under RKVY (% of households) (2016-17)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless					0
Marginal	100	100	18	17	0
Small	100	100	19	19	0
Medium	100	100	0	0	0
Large					
Total	100	100	18	18	0
Non-Beneficiary					
Landless					
Marginal	95	86	0	0	0
Small	100	100	0	0	0
Medium	100	100	0	0	0
Large					
Total	97	90	0	0	0

Table 18-28A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		51	50	0		50
Contact details of the department which pay subsidy not available		33	27	50		32
Eligibility or criteria for availing the subsidy not known		54	69	100		58
Procedure for the subsidy very tedious		54	69	0		57
No of documents required for availing subsidy are too many		50	46	100		50
Subsidy paid after purchase while initial payment remains the highest problem		62	54	100		61
Delay in transfer		58	54	0		56
Prescribed machinery/asset not easily available in the market		49	62	100		53
Institutional financing facility not available		42	58	0		45
Capacity building/technical advice not provided		41	35	0		39
Long time gap between the purchase and receiving the subsidy amount		55	65	100		58
Biased towards large land owners		41	19	100		38
Poor quality of materials/machinery are supplied		48	54	0		48
Implementing agencies are located far away		59	54	100		58
Incidence of bribery		41	62	100		47
Lack of monitoring		66	65	0		65
Complementary inputs not available		54	46	100		53
Restricted Choice		60	81	100		65
Lack of marketing support		62	65	0		62
Any other		0	0	0		0

Table 18-28B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		68	43	0		60
Contact details of the department which pay subsidy not available		68	14	100		57
Eligibility or criteria for availing the subsidy not known		50	86	100		60
Procedure for the subsidy very tedious		50	57	0		50
No of documents required for availing subsidy are too many		50	57	100		53
Subsidy paid after purchase while initial payment remains the highest problem		64	71	100		67
Delay in transfer		73	14	0		57
Prescribed machinery/asset not easily available in the market		73	57	100		70
Institutional financing facility not available		59	71	100		63
Capacity building/technical advice not provided		82	43	100		73
Long time gap between the purchase and receiving the subsidy amount		55	86	0		60
Biased towards large land owners		50	71	100		57
Poor quality of materials/machinery are supplied		36	57	100		43
Implementing agencies are located far away		55	29	0		47
Incidence of bribery		73	71	100		73
Lack of monitoring		82	57	100		77
Complementary inputs not available		59	57	100		60
Restricted Choice		55	71	100		60
Lack of marketing support		86	43	0		73
Any other		0	0	0		0

Table 18-29A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless										
Marginal	73	7	77	3	60	20	66	14	73	7
Small	79	0	79	0	61	18	67	12	73	6
Medium	67	0	67	0	67	0	67	0	33	33
Large										
Total	74	1	77	2	60	19	66	13	72	7

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 18- 29B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless								
Marginal	33	20	67	13	48	39	0	0
Small	67	12	73	6	58	21	0	0
Medium	67	0	67	0	33	33	0	0
Large								
Total	41	18	68	11	11	57	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

19 ODISHA

Odisha is in the eastern part of India, situated on the coast along Bay of Bengal. Geographical area of the state is 15571 thousand hectares.⁴³ More than 22% of population of Odisha belongs to tribal community⁴⁴. Agriculture and allied services is one of the important sectors in Odisha economy. According to 2011 Census, 38.42% of total workers are agricultural workers. Agriculture, Forestry and Fishing contributes 18.81% of the states NSVA in 2015-16 (Advanced estimate at current basic prices). Gross cropped area in Odisha is 90.54 lakh hectares in 2014-15⁴⁵. The average size of holdings in the state was 1.04 hectares in 2010-11. Major food grains cultivated in Odisha consist of cereals and pulses. Rice, maize, ragi, wheat, jowar, bajra & small millets crops grown in the state come under cereals and arhar, mung, biri, kulthi, cowpea, fieldpea, gram, lentil crops under pulses. Other crops are oilseeds, jute & mesta, cotton and sugarcane.

RKVY was started in 2014-15 in Odisha. Under RKVY scheme, Rs. 342.59 crore was allocated, among which Rs. 334.91 crore was released and Rs. 128.08 crore was spent for Odisha for 2016-17 till 31st July 2017. According to MIS report, for Odisha, in 2016-17, highest number of projects is proposed to horticulture (7 projects) among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 38 projects proposed with priority sectors being micro/minor irrigation (11 projects) and horticulture (9 projects). In the medium-size category (cost 5 to 10 crore), highest number of projects are allocated for dairy development (3 projects). For large projects with cost 10 to 25 crore, priority areas are agriculture mechanization, seed, animal husbandry, crop development and micro/minor irrigation (2 each). Information technology, animal husbandry and crop development are given important sectors in the very large (cost > 25 crore) category. So small projects are dominated

⁴³http://www.desorissa.nic.in/pdf/odisha_at_glance_2016.pdf

⁴⁴<http://odisha.gov.in/content/odisha-profile/land-and-people>

⁴⁵ http://agriodisha.nic.in/content/pdf/STATUS_AGRICULTURE_IN_ODISHA_inf_30032015.pdf

by horticulture and micro/minor irrigation and large projects are by crop development and animal husbandry in 2016-17. In aggregate, up to the date the data was accessed, 77 projects are pointed out which needs funds from RKVY in 2016-17, among which crop development (218crore) is given highest priority in terms of cost, while in terms of number of projects, horticulture and micro/minor irrigation are given priority. Project with highest average cost is proposed for crop development. Allocation and release of funds for Odisha has been shown in Figure 19-1.

This study analyses performance of RKVY for the year 2016-17 in Odisha. We have selected 7 projects for Odisha and analysed the performance of RKVY by collecting information through primary survey. List of selected projects for Odisha is given below (Table 19-1).

19.1 Results FROM PRIMARY SURVEY

19.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Odisha, total 200 households are considered for the survey, among which 160 households are beneficiaries of RKVY and 40 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, the majority of the beneficiary households (66% of beneficiary households) are marginal farmers, 18% are small farmers, 9% are medium farmers and 7% belong to large category. In the non-beneficiary households, 65% are marginal, 23% are small, and 13% are large farmers (Table 19-2).

19.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for kharif 2016-17, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. But for small, medium and large category, the situation is opposite. Households depend on canal, tube well (electric and diesel) for irrigation in kharif season. Majority of farmers use owned tube wells (Table 19-3A & Table 19-3B).

We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households (Table 19-4A & Table 19-4B). Households depend on canal, tanks and tube well (electric and diesel) for irrigation in kharif season.

In our sample, a total of 160 households are beneficiaries and 40 are non-beneficiaries. A total number of the population covered is, 1004 among them, 822 people belong to beneficiary households and 182 people belong to non-beneficiary households (Table 19-5). Among them in beneficiary households, 20% of the population is below 15 age group, while 15% are in above 60 age group. Rest 65% population in beneficiary households is in working-age-group. In non-beneficiary households, 23% of the population is below 15 age-groups, while 9 percent are in above 60 age group. Rest 69% population in non-beneficiary households is in working-age-group. Taking both the groups into consideration, 66% population is in working-age group. On the education front, 15% of the population in both beneficiary and non-beneficiary group is illiterate. 73% population in beneficiary households and 74% population in non-beneficiary households have attended school (class 1 to 12); while 8% population in both beneficiary and non-beneficiary households have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife' (Table 19-6).

19.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 38% of the beneficiary households have reported income from farming. For non-beneficiary households also, 38% of households have reported farming as an occupation. 23% of beneficiary households and 12% of non-beneficiary households have

reported income from dairy. 24% of beneficiary and 36% of beneficiary households have reported income from work as casual labour (Table 19-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 73750 in Odisha while the same for non-beneficiary households is Rs. 70116 in 2016-17 (Table 19-8). Average annual income for beneficiary households was Rs. 67475 in 2015-16 while it was Rs. 64394 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy and poultry apart from fishing, agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is also higher for beneficiary households as compared to non-beneficiary households (Table 19-8).

Table 19-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 96242 which is higher than non-beneficiaries (Rs. 88680); so is the average cost (Rs. 36360 and Rs. 30139 respectively).

In terms of percentage change in income (Table 19-10), average income has increased by 7% in farming both for beneficiary and non-beneficiary households. However, the average cost has increased more for non-beneficiary households in farming than beneficiary households.

19.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 19-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on purchased water for irrigation, electricity for irrigation are higher for non-beneficiaries than beneficiaries in 2016-17.

Table 19-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in expenditure on purchased water for irrigation for non-beneficiary households.

19.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Odisha, for beneficiary households, tractor, trolley, sprinkler sets/drip irrigation equipment or leveller are owned by medium and large farmers. Majority of weeder, manual/power sprayer, diesel pump sets, fodder chopper, bullock cart etc. are owned by marginal and small farmers (Table 19-13A). In non-beneficiary households, large farmers own equipment like tractor, trolley, pump sets etc. while marginal and small farmers own threshers, manual/power sprayers, fodder choppers etc. (Table 19-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 19-14B). Small farmers among the beneficiaries have more cows, buffalos, young stock, sheep, poultry and goat as compared to other classes. Male draught is mainly owned by large farmers.

In our sample, 19% of the households for beneficiary and 33% of non-beneficiary groups have kachha houses (Table 19-15). 28% households in beneficiary category and 15% of non-beneficiary category have pucca houses.

It is observed from our sample that 68% of beneficiary households possess TV while for non-beneficiaries; it is 53% (Table 19-16). In the case of mobile phones all households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles and two-wheelers are there, but four-wheelers are very rare.

19.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, gram, moong, urad, groundnut, mustard, oilseeds, fruit and vegetables in the majority of the cultivated area (Table 19-17). But for non-beneficiary households, the emphasis is on paddy, maize, moong, groundnut, mustard, fruits, vegetables and spices (Table 19-18). Average production of paddy

is higher for beneficiary (57 qtls) and non-beneficiary households (44 qtls). Average production of groundnut and mustard is higher for non-beneficiary households as compared to beneficiary households. Price of the marketed quantity for paddy, moong and groundnut are more for the beneficiary household vis-à-vis non-beneficiary households; while for mustard; average price is higher for non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 19-19). For paddy and moong, marginal farmers are getting less price as compared to small farmers for beneficiary households. But for mustard; the situation is opposite (Table 19-19).

In 2015-16 also, it is seen that price received by marginal farmers is low for paddy and moong as compared to small farmers for beneficiary households.

19.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. In our sample for Odisha, it is seen that average income from livestock is lower for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 88% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries, the share is 86% (Table 19-21).

The inter-temporal comparison shows that average income from the production of milk is higher for beneficiaries in 2016-17 and 2015-16. Income from milk is higher for beneficiaries for both the years. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for non-beneficiaries (Table 19-22).

19.1.1.7 AWARENESS REGARDING RKVY PROGRAMME

Regarding the awareness of RKVY, it is found that in our sample, 60% of non-beneficiary households are not aware of RKVY. 34% households in the beneficiary category have received benefits from RKVY in the last five years excluding this year. But 97.5% non-beneficiary households are deprived of any benefits through-out these years. 24% of the beneficiary

households and 7.5% of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 34% of the beneficiary households and 10% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 19-21 that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Odisha, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours; Agriculture/Horticulture Department and Zila Panchayat and Gram Panchayat (Table 19-22). For non-beneficiary households, 94% of the households received information from friends and neighbours.

19.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY (Table 19-23A). Crops, micro nutrients and pesticides are distributed to farmers through the RKVY programme. For the project “Capacity building training of progressive farmers under RKVY”, farmers from villages Dimirimunda, Badbadibahal,, Karangamal, Lachhimal, Khairadihi, Mahul Munda etc. got assistance on crops like paddy, potato, moong, urad, tomato, groundnut etc. Under the project “Bringing Green Revolution to Eastern India”, farmers got assistance for crops like potato and moong. The project was carried out in villages like Kulajangia, Orshaka, Simalda, Bhagatpur, Singhri. Majority of the beneficiaries are marginal farmers (Table 19-23A). The majority of the farmers have received benefit through material (Table 19-23B). Average quantity per household supplied was 17.8 Kg for seeds, 0.6 KG for micro nutrients and 0.6 Kg for pesticides (Table 19-23B).

Apart from crop development, RKVY provided assistance in animal feed in 2016-17. The details of the benefits are described in Table 19-24. RKVY has provided feed assistance in villages like Bhalubasa, Talabhaga Bandh, Mukundapur, Nayagatna under the project “Cattle breed and small ruminant improvement project through 510 integrated livestock development in 13 districts”. Under this project, calcium, vaccine and De-worming tablets are provided by

RKVY. Average quantity received varies across different farmer category, with medium farmers getting the highest benefit. Under the project “Foot and mouth disease control programme in dairy cattle and buffalo of Odisha”, RKVY provided calcium, jaggery, fodder seed, fodder root cuttings, vaccine and de-worming tablets in villages like Ankushpur, Rench and Kuji Mahal.

In Odisha, 52% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 19-25A). Among them, 73% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 19-25B).

Within our sample in Odisha, 97% of beneficiary households had undergone training and demonstration (Table 19-26). All the households found training beneficial and want more training.

19.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as lack of access to information, too many documents required for availing subsidy, restricted choice and lack of marketing support (Table 19-27A). For non-beneficiaries, major problems are: lack of access to information, capacity building/technical advice not provided, institutional financing facility not available, contact details of the department which pay subsidy not available, eligibility or criteria for availing the subsidy not known, Implementing agencies are located far away, Incidence of bribery, subsidy paid after purchase while initial payment (Table 19-27B).

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the program is successful in generating employment, increasing production, providing financial assistance. However, it appears that RKVY has not been very successful in post-harvesting storage, and procurement (Table 19-28A & Table 19-28B).

19.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

In Odisha, two projects were chosen - creation of dairy infrastructures to handle enhanced milk procurement by OMFED and developments of tanks and ponds for intensive aquaculture. Both

projects are construction related projects (Table 19-29). Under these projects, types of activities carried out were a new dairy plant, purchase of bulk milk cooler, purchase of dairy equipment, capacity upgradation of existing dairy plant and construction of new tanks/ ponds in private land. Respondents also informed that the project was proposed by the implementing agency (Table 19-30).

It is observed from Table 19-31 that Rs. 450 lakh has been released in 2016-17 for the first project while the required fund was Rs. 650 lakh. For the second project, all the required funds were released. Table 19-32 highlights the varied physical capacity requirements that the projects aim to improve and achieve.

For the project “Creation of dairy infrastructures to handle enhanced milk procurement by OMFED”, e-tenders were invited. Respondent expressed the opinion that e-tendering improves the efficiency of the tendering process. Re-bidding was needed because required number of tenders were not received (Table 19-33). The project is expected to benefit, as per the respondent, cooperatives as well as farmers. Extension services have been cited as complementary/ supplementary projects for the ongoing projects (Table 19-34). Convergence of the project with other schemes / programs is reported for the first project but not for the second one (Table 19-35).

19.2 CONCLUSION

RKVY was started in 2014-15 in Odisha. Under RKVY scheme, Rs. 342.59 crore was allocated, among which Rs. 334.91 crore was released and Rs. 128.08 crore was spent for Odisha for 2016-17 till 31st July 2017. According to MIS report, among the proposed projects for Odisha, small projects are dominated by horticulture and micro/minor irrigation and large projects are by crop development and animal husbandry in 2016-17. In aggregate, up to the date the data was accessed, 77 projects are pointed out which needs funds from RKVY in 2016-17, among which crop development (218crore) is given highest priority in terms of cost, while in terms of number of projects, horticulture and micro/minor irrigation are given priority. Project with highest average cost is proposed for crop development.

This study analyses performance of RKVY for the year 2016-17 in Odisha. We have selected 7 projects for Odisha and analysed the performance of RKVY by collecting information through primary survey.

In our sample in Odisha, total 200 households are considered for the survey, among which 160 households are beneficiaries of RKVY and 40 are non-beneficiaries. In our sample, the majority of the beneficiary households (66% of beneficiary households) are marginal farmers, 18% are small farmers, 9% are medium farmers and 7% belong to large category. In the non-beneficiary households, 65% are marginal, 23% are small, and 13% are large farmers.

In our sample, for kharif 2016-17, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. But for small, medium and large category, the situation is opposite. Households depend on canal, tube well (electric and diesel) for irrigation in kharif season. Majority of farmers use owned tube wells. We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of operated land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary. Households depend on canal, tanks and tube well (electric and diesel) for irrigation in kharif season.

A total number of the population covered in the primary survey is 1004 among them, 822 people belong to beneficiary households and 182 people belong to non-beneficiary households. 66% population surveyed is in working-age group. On the education front, 15% of the population in both beneficiary and non-beneficiary group is illiterate. Major occupation is cultivation.

In the sample of our study, 38% of the beneficiary households have reported income from farming. For non-beneficiary households also, 38% of households have reported farming as an occupation. 23% of beneficiary households and 12% of non-beneficiary households have reported income from dairy. 24% of beneficiary and 36% of beneficiary households have reported income from work as casual labour.

Average annual income of the sample beneficiary households in aggregate is Rs. 73750 in Odisha while the same for non-beneficiary households is Rs. 70116 in 2016-17. Average annual income for beneficiary households was Rs. 67475 in 2015-16 while it was Rs. 64394 for non-

beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy and poultry apart from fishing, agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is also higher for beneficiary households as compared to non-beneficiary households.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on purchased water for irrigation, electricity for irrigation are higher for non-beneficiaries than beneficiaries in 2016-17.

In our sample in Odisha, for beneficiary households, tractor, trolley, sprinkler sets/drip irrigation equipment or leveller are owned by medium and large farmers. Majority of weeder, manual/power sprayer, diesel pump sets, fodder chopper, bullock cart etc. are owned by marginal and small farmers. In non-beneficiary households, large farmers own equipment like tractor, trolley, pump sets etc. while marginal and small farmers own threshers, manual/power sprayers, fodder choppers, etc.

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock. Small farmers among the beneficiaries have more cows, buffalos, young stock, sheep, poultry and goat as compared to other classes. Male draught is mainly owned by large farmers. In our sample, 19% of the households for beneficiary and 33% of non-beneficiary groups have kachha houses. 28% households in beneficiary category and 15% of non-beneficiary category have pucca houses.

It is seen from the sample that beneficiary households cultivated paddy, gram, moong, urad, groundnut, mustard, oilseeds, fruit and vegetables in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy, maize, moong, groundnut, mustard, fruits, vegetables and spices. Average production of paddy is higher for beneficiary (57 qtls)

and non-beneficiary households (44 qtls). Average production of groundnut and mustard is higher for non-beneficiary households as compared to beneficiary households. Price of the marketed quantity for paddy, moong and groundnut are more for the beneficiary household vis-à-vis non-beneficiary households; while for mustard; average price is higher for non-beneficiary households. For paddy and moong, marginal farmers are getting less price as compared to small farmers for beneficiary households. But for mustard; the situation is opposite.

Apart from cultivation, the households earn income from livestock. In our sample for Odisha, it is seen that average income from livestock is lower for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 88% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries, the share is 86%.

Regarding the awareness of RKVY, it is found that in our sample, 60% of non-beneficiary households are not aware of RKVY. 34% households in the beneficiary category have received benefits from RKVY in the last five years excluding this year. But 97.5% non-beneficiary households are deprived of any benefits through-out these years. 24% of the beneficiary households and 7.5% of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. Majority of the beneficiary households had received information regarding RKVY from friends and neighbours; Agriculture/Horticulture Department and Zila Panchayat and Gram Panchayat.

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. Crops, micro nutrients and pesticides are distributed to farmers through the RKVY programme. For the project “Capacity building training of progressive farmers under RKVY”, farmers from villages Dimirimunda, Badbadibahal,, Karangamal, Lachhimal, Khairadihi, Mahul Munda etc. got assistance on crops like paddy, potato, moong, urad, tomato, groundnut etc. Under the project “Bringing Green Revolution to Eastern India”, farmers got assistance for crops like potato and moong. The project was carried out in villages like Kulajangia, Orshaka, Simalda, Bhagatpur, Singhri. Majority of the beneficiaries are marginal farmers. The majority of the farmers have

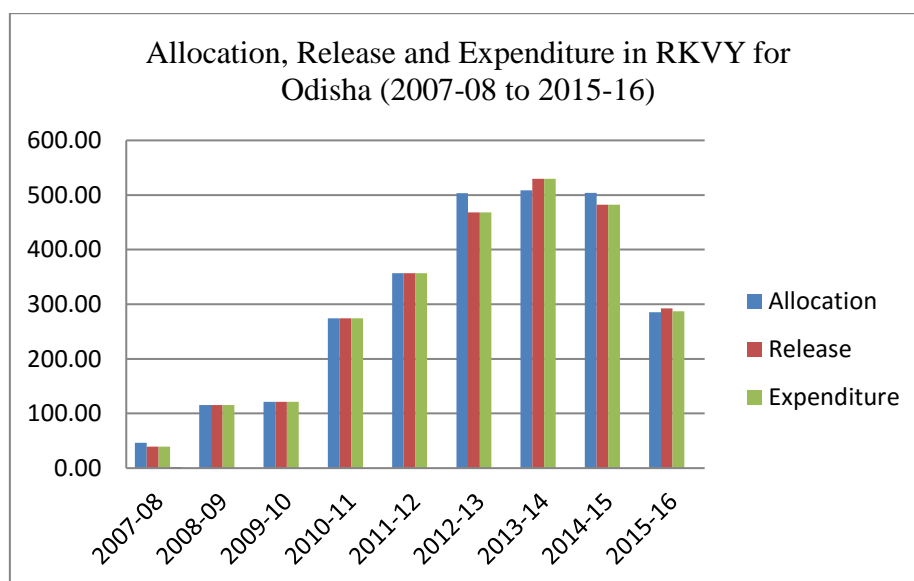
received benefit through material. Average quantity per household supplied was 17.8 Kg for seeds, 0.6 KG for micro nutrients and 0.6 Kg for pesticides.

Apart from crop development, RKVY provided assistance in animal feed in 2016-17. RKVY has provided feed assistance in villages like Bhalubasa, Talabhaga Bandh, Mukundapur, Nayagatna under the project “Cattle breed and small ruminant improvement project through 510 integrated livestock development in 13 districts”. Under this project, calcium, vaccine and De-worming tablets are provided by RKVY. Average quantity received varies across different farmer category, with medium farmers getting the highest benefit. Under the project “Foot and mouth disease control programme in dairy cattle and buffalo of Odisha”, RKVY provided calcium, Jaggery, Fodder Seed, Fodder Root Cuttings, vaccine and De-worming tablets in villages like Ankushpur, Rench and Kuji Mahal. In Odisha, 52% of the farmers have reported that the soil has been tested to know the nature of the soil. Among them, 73% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Odisha, 97% of beneficiary households had undergone training and demonstration. All the households found training beneficial and want more training.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as lack of access to information, too many documents required for availing subsidy, restricted choice and lack of marketing support. For non-beneficiaries, major problems are: lack of access to information, capacity building/technical advice not provided, institutional financing facility not available, contact details of the department which pay subsidy not available, eligibility or criteria for availing the subsidy not known, Implementing agencies are located far away, Incidence of bribery, subsidy paid after purchase while initial payment.

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the program is successful in generating employment, increasing production, providing financial assistance. However, it appears that RKVY has not been very successful in post-harvesting storage, and procurement. However, it is quite evident from the study that RKVY has been successfully providing assistance to farmers in crop development and animal husbandry in Odisha.

Figure 19-1: Allocation, Release and Expenditure in RKVY for Odisha (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 19-1: List of selected project name and code

Project Code	Project Name
1	Cattle breed and small ruminant improvement project through 510 integrated livestock development in 13 districts (H)
2	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)
3	Developments of tanks and ponds for intensive aquaculture (IA)
4	Capacity building training of progressive farmers under RKVY (H)
5	Popularization of agriculture machineries/implements in the state (IA)
6	Brining Green Revolution to Eastern India (H)
7	Foot and mouth disease control programme in dairy cattle and buffalo of Odisha (H)

Table 19-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	106(66)	26(65)	132(66)
Small	29(18)	9(23)	38(19)
Medium	14(9)	0(0)	14(7)
Large	11(7)	5(13)	16(8)
Total	160(100)	40(100)	200(100)

Table 19-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.2	3.6	8.2	9.5
Leased-in Land/share cropping (acre)				0.3	0.3	1.6	0.2
Leased-out Land/share cropping (acre)					5.0		
Total operated area (owned+LI-LO) (acre)				1.5	4.1	9.7	17.8
Irrigated Area by canal (%)				14.8	22.3	22.6	18.6
Irrigated Area by tube well (%)	Rented	Electric		0.0	19.7	0.0	0.0
		Diesel		18.3	0.0	0.0	0.0
	Owned	Electric		24.4	32.5	50.5	50.3
		Diesel		19.8	25.6	26.9	31.1
Irrigated Area by Tanks (%)				22.7	0.0	0.0	0.0
Irrigated Area by Wells (%)				0.0	0.0	0.0	0.0
Irrigated Area by others (%)				0.0	0.0	0.0	0.0

Table 19-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dless	Margi nal	Sma ll	Mediu m	Larg e
Owned land (acre)				1.0	4.0		4.0
Leased-in Land/share cropping (acre)				0.2	0.3		0.0
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.2	4.3		20.0
Irrigated Area by canal (%)				12.5	34.8		0.0
Irrigated Area by tube well (%)	Rented	Electric		13.5	0.0		0.0
		Diesel		13.5	0.0		0.0
	Owned	Electric		26.9	39.1		100.0
		Diesel		33.6	26.1		0.0
Irrigated Area by Tanks (%)				0.0	0.0		0.0
Irrigated Area by Wells (%)				0.0	0.0		0.0
Irrigated Area by others (%)				0.0	0.0		0.0

Table 19-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.2	2.1	2.4	6.6
Leased-in Land/share cropping (acre)				1.2	4.0		
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.4	2.2	2.4	6.6
Irrigated Area by canal (%)				17.0	28.7	36.7	0.0
Irrigated Area by tube well (%)	Rente d	Electric		0.0	23.8	0.0	0.0
		Diesel		17.6	0.0	0.0	0.0
	Owne d	Electric		28.2	23.8	30.0	45.3
		Diesel		23.1	23.8	33.3	54.7
Irrigated Area by Tanks (%)				14.1	0.0	0.0	0.0
Irrigated Area by Wells (%)				0.0	0.0	0.0	0.0
Irrigated Area by others (%)				0.0	0.0	0.0	0.0

Table 19-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.2	4.0	2.0	
Leased-in Land/share cropping (acre)				2.0			
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.3	4.0	2.0	
Irrigated Area by canal (%)				29.1	50.0	0.0	
Irrigated Area by tube well (%)	Rente d	Electri c		23.6	0.0	0.0	
		Diesel		23.6	0.0	0.0	
	Owne d	Electri c		0.0	50.0	100.0	
		Diesel		23.6	0.0	0.0	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	

Table 19-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	20	23	21
	>15 to 25	17	16	17
	>25 to 40	26	31	27
	>40 to 59	22	21	22
	>59	15	9	14
	All Groups	100	100	100
Education	Illiterate	15	15	15
	Class 1 to 5	18	19	18
	Above Class 5 to 8	15	23	17
	Above Class 8 to 12	39	32	38
	Above Class 12	8	8	8
	Other diploma	1	1	1
	can read and write	1	2	1
	can read only	1	0	1
	can count only	1	0	1
	could not attend class 1	1	1	1
	All Groups	100	100	100

Table 19-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	16	14	16
agricultural labour	0	1	0
dairy	4	1	3
casual labour	8	16	9
self-employment (specify)	4	4	4
salaried employment	7	5	7
forestry	0	0	0
Horticulture	0	0	0
Floriculture	0	0	0
Sericulture	0	0	0
Fishing	0	0	0
Aquaculture	0	0	0
Poultry	0	0	0
beekeeping	0	1	0
Student	19	20	20
housewife	27	25	26
non-working	14	13	14
others (no separate income)	0	0	0
All Groups	100	100	100

Table 19-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	38	38
Horticulture	0	0
Floriculture	0	0
Dairy	23	12
Poultry	1	0
Sericulture	0	0
Agricultural Labour	2	3
Casual Labour	24	36
Forestry	0	0
Fishing	1	0
Beekeeping	0	0
Salary	13	12
Other	0	0
Total	100	100

Table 19-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	103285	39452	56246	95269	33125	49404
Horticulture						
Floriculture						
Dairy	35821	16949	18654	28250	11500	16750
Poultry	22500	8000	18500			
Sericulture						
Agricultural Labour	23500	2000	23250	32500		32500
Casual Labour	43370	5000	43309	51000	5000	50800
Forestry						
Fishing	25000	7000	18000			
Beekeeping						
Salary	124488	12741	116488	99375	14286	86875
Other		26367			27591	
Total	73750	28982	44768	70116	26873	43243

Table 19-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	96242	36360	52496	88680	30139	45280
Horticulture						
Floriculture						
Dairy	30935	14286	16649	24286	9714	14571
Poultry	18000	7000	11000			
Sericulture						
Agricultural Labour	16286		16286	29000		29000
Casual Labour	37284	5000	37222	44708	1000	44667
Forestry						
Fishing	20000	8000	12000			
Beekeeping						
Salary	118195	10840	111585	91500	13143	80000
Other		21380			22417	
Total	67475	26100	41374	64394	24048	40346

Table 19-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	7	9	7	7	10	9
Horticulture						
Floriculture						
Dairy	16	19	12	16	18	15
Poultry						
Sericulture						
Agricultural Labour	44					
Casual Labour	16	0	16	14		
Forestry						
Fishing						
Beekeeping						
Salary	5	18	4	9		
Other		23			23	

Table 19-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	8634.6	11333.3	8576.9	11333.3
Total rent on machinery (tractor, harvester etc.)	6425.0	6185.0	6062.5	5820.0
Expenditure on purchased water for irrigation	2125.0	2875.0	2000.0	2375.0
Expenditure on electricity for irrigation	5224.2	5320.0	5598.5	5280.0
Expenditure on diesel	3012.5	2325.0	2881.3	2250.0
Expenditure on other fuels for agriculture	507.1	283.3	432.5	458.3
Any other	27533.1	31887.5	24779.4	28997.5
<i>Total expenditure on agriculture</i>	34614.1	40382.5	31745.0	37083.8

Table 19-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	1	0
Total rent on machinery (tractor, harvester etc.)	6	6
Expenditure on purchased water for irrigation	6	21
Expenditure on electricity for irrigation	-7	1
Expenditure on diesel	5	3
Expenditure on other fuels for agriculture	17	-38
Any other	11	10
<i>Total expenditure on agriculture</i>	9	9

Table 19-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

Assets	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	0	0	57	43
Trolley	0	0	0	57	43
Weeder	0	45	18	27	9
Manual/Power Sprayers	0	46	32	16	6
Threshers	0	40	40	0	20
Drier	0	0	100	0	0
Electrical Pump sets	0	19	41	27	14
Diesel Pump sets	0	39	26	24	11
Sprinkler sets/Drip Irrigation Equipment	0	0	0	100	0
Cane Crusher/Agro-processing Equipment					
Leveller	0	0	0	0	100
Fodder Choppers	0	67	17	9	7
Bullock cart	0	33	33	0	33
Harvest Combine					
Others	0	0	0	50	50

Table 19-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

Assets	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	0	0	0	100
Trolley	0	0	0	0	100
Weeder	0	0	100	0	0
Manual/Power Sprayers	0	44	44	0	11
Threshers	0	100	0	0	0
Drier					
Electrical Pump sets	0	10	60	0	30
Diesel Pump sets	0	25	63	0	13
Sprinkler sets/Drip Irrigation Equipment	0	0	100	0	0
Cane Crusher/Agro-processing Equipment					
Leveller					
Fodder Choppers	0	57	39	0	4
Bullock cart					
Harvest Combine					
Others					

Table 19-14A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0	67	17	8	8
Buffalo	0	80	20	0	0
Young Stock	0	78	10	6	6
Male Draught	0	0	0	0	100
Sheep	0	100	0	0	0
Goat	0	81	0	0	19
Pig					
Poultry	0	93	0	0	7
Others					

Table 19-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	19	33	22
Pucca	28	15	25
Semi-Pucca	54	53	54
Others	0	0	0
Total	100	100	100

Table 19-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	68	32	100	53	48	100
Telephone	0	100	100	0	100	100
Mobile phone	98	3	100	88	13	100
Cycle	97	3	100	98	3	100
Two wheeler	44	56	100	28	73	100
Four wheeler	1	99	100	3	98	100
Refrigerator	14	86	100	13	88	100

Table 19-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	3	3	57	48	1144	949	53696
gram	1	1	5	5	5100	10000	15500
moong	2	2	4	4	4469	8563	8838
urad	1	1	5	5	3983	8000	10921
groundnut	2	2	11	11	3667	14667	25667
mustard	1	1	8	7	2817	10250	9701
other oilseeds	1	1	3	3	4050	4000	6125
fruit	0.6	0.6	50.0	50.0	2150.0	40000.0	67500.0
vegetable	0.6	0.6	40.9	40.8	966.5	15974.1	23451.2

Table 19-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivate d Area (in Acres)	Irrigate d Area (in Acres)	Productio n (Qtls)	Markete d Quantity (Qtls)	Price receive d (per qtl)	Total paid-out costs (Rs)	Profitabilit y
paddy	2	2	44	34	1014	24778	10051
maize	2	2	40	40	1100	17000	27000
moong	1	1	4	4	3690	8700	6060
groundnu t	2	2	14	14	3500	20000	29000
mustard	2	2	12	10	3200	13000	19000
fruit	1.0	1.0	75.0	75.0	2000.0	60000.0	90000.0
vegetable	2.0	2.0	200.0	200.0	600.0	48000.0	72000.0
spices	3.0	3.0	75.0	75.0	1400.0	42000.0	63000.0

Table 19-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Lan dless	Margin al	Small	Mediu m	Large	La ndl ess	Margin al	Small	Medi um	Lar ge
paddy		1009.8	1406.2	1472.1	1476.7		848.46	1451.1		1400
gram			5100							
moong		4500	4863.6	4080	2800		3650	3850		
urad		4600	3850	3800	4000					
groundnut				3750	3500			3500		
mustard		3500	1600	3400	3400					3200
other oilseeds			4100	4000						

Table 19-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Lan dles s	Margi nal	Small	Mediu m	Large	Lan dles s	Margin al	Small	Mediu m	Lar ge
paddy		954.81	1354.5	1440.7	1448.3		764.6	1412		1380
maize								1000		
gram			5000							
masur		3500								
moong		4753.3	5027.3	3900	4750		3513	3700		
urad		4500	3700	3650	3800					
groundnut				3650	3400			3400		
mustard		3200	1500	3300	3300					3100
cotton			4000							
other oilseeds				3900						

Table 19-21: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average Annual income (Rs)	% of Total Income	Average Annual income (Rs)
Milk		88	36307.7	86	28250.0
Milk Products	Ghee	0	5000.0	0	
Eggs		0	10000.0	0	
Animal sale		11	18473.7	14	12666.7
Others		0	10000.0	0	
TOTAL	100	32080.0	100	24000.0	100

Table 19-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

<i>Items</i>	Difference in the average income of beneficiaries over non-beneficiaries (Rs)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	29	27	18	16
Animal Sale	46	33	59	45
TOTAL	34	42	21	29

Table 19-21: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about RKVY?	100.0	0.0	100.0	40.0	60.0	100.0	88.0	12.0	100.0
Did you receive any benefits from RKVY in the year 2016-17?	100.0	0.0	100.0	0.0	100.0	100.0	80.0	20.0	100.0
Did you receive any benefits from RKVY in the last five years excluding this year?	33.8	66.3	100.0	2.5	97.5	100.0	27.5	72.5	100.0
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	24.4	75.6	100.0	7.5	92.5	100.0	21.0	79.0	100.0
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	33.8	66.3	100.0	10.0	90.0	100.0	29.0	71.0	100.0

Table 19-22: Source of Awareness regarding RKVY (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbours	38.8	93.8
Newspaper	0.0	0.0
Agriculture/Horticulture Department	42.5	6.3
SAU	0.0	0.0
KVK	0.0	0.0
Input Suppliers	0.6	0.0
TV/Radio	0.0	0.0
Agri. Exhibitions	0.0	0.0
ZP/GP	18.1	0.0
Other sources	0.0	0.0
Total	100.0	100.0

Table 19-23A: Distribution of farmers in crop development (in 2016-17) in Odisha for beneficiaries

	Crop1	Micro nutrients	Pesticides
Landless	0	0	0
Marginal	79	80	79
Small	21	20	21
Medium	0	0	0
Large	0	0	0
Total	100	100	100

Table 19-23B: Details of Interventions made under crop development (in 2016-17) in Odisha for beneficiaries

	Seeds/planting materials	Micro nutrients	Pesticides
No of beneficiary of RKVY	39	40	39
Average actual cost of these materials (Rs)	464	556	451
Whether Material or subsidy received from RKVY (%)			
Material	79	-	-
Subsidy	-	-	-
If Material, quantity supplied (Kg) (Average)	17.8	0.6	0.6

Table 19-24: Assistance from RKVY in Animal Feed in 2016-17

		Average quantity (kg.)	Average Cost (Rs.)	Average subsidy (Rs.)	subsidy as % of cost
calcium	Landless				
	Marginal	3.3	330.0	143.8	43.6
	Small	3.1	291.4	168.1	57.7
	Medium	16.3	1620.0	120.0	7.4
	Large	3.3	320.0	295.0	92.2
Protein	Landless				
	Marginal	122.8	3424.3	103.8	3.0
	Small	57.6	1610.9	158.1	9.8
	Medium	151.8	8250.0	0.0	0.0
	Large	102.0	1840.0	166.7	9.1
Jaggery	Landless				
	Marginal	35.8	1323.7	0.0	0.0
	Small	45.8	1733.3	0.0	0.0
	Medium	52.5	1812.5	0.0	0.0
	Large	40.0	1600.0	0.0	0.0
Fodder Seed	Landless				
	Marginal	11.8	977.6	0.0	0.0
	Small	6.7	1216.7	0.0	0.0
	Medium	6.3	900.0	0.0	0.0
	Large	10.0	2000.0	0.0	0.0
Fodder Root Cuttings	Landless				
	Marginal	2981.0	296.3	43.8	14.8
	Small	3666.7	366.7	0.0	0.0
	Medium	1500.0	150.0	0.0	0.0
	Large	4405.0	446.0	405.0	90.8
Vaccine	Landless				
	Marginal	3.0	362.3	315.0	87.0
	Small	4.3	516.7	361.1	69.9
	Medium	6.0	1037.5	175.0	16.9
	Large	2.3	201.4	115.7	57.4
De-worming tablets	Landless				
	Marginal	2.1	120.6	99.1	82.2
	Small	2.2	155.0	138.3	89.2
	Medium	4.5	237.5	50.0	21.1
	Large	2.0	100.0	100.0	100.0

Table 19-25A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?			Soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless	-	-	-	-	-	-
Marginal	34	66	100	56	44	100
Small	93	7	100	81	19	100
Medium	100	0	100	100	0	100
Large	55	45	100	83	17	100
Total	52	48	100	73	27	100
Non-beneficiary						
Landless	-	-	-	-	-	-
Marginal	15	85	100	50	50	100
Small	78	22	100	100	0	100
Medium	-	-	-	-	-	-
Large	20	80	100	100	0	100
Total	30	70	100	83	17	100

Table 19-25B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Place of soil test		
	Government Institute	Private organization	Do not know
Beneficiaries			
Landless	-	-	-
Marginal	100	0	0
Small	100	0	0
Medium			
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium			
Large	100	0	0
Total	100	0	0

Table 19-26: Information regarding training and demonstration among beneficiaries under RKVY (% of households) (2016-17)

	Numb er of Benefi ciaries	% of beneficiary households undergone training	Type of training				% of households found training beneficial	% of households who want more training
			Dem onstr ation	Field Visit	Krishi Mela	Othe rs		
Landless	0	0	0	0	0	0	0	0
Marginal	100	100	53	43	0	100	100	53
Small	90	90	81	81	0	90	90	81
Medium	92	92	85	85	8	92	92	85
Large	100	100	100	80	0	100	100	100
Total	97	97	67	60	1	97	97	67

Table 19-27A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Landl ess	Margi nal	Sm all	Medi um	Lar ge	Tot al
Information about RKVY programme details not easily available		50	62	43	55	52
Contact details of the department which pay subsidy not available		32	48	29	45	36
Eligibility or criteria for availing the subsidy not known		39	0	71	73	37
Procedure for the subsidy very tedious		45	24	43	36	41
No of documents required for availing subsidy are too many		53	31	64	55	50
Subsidy paid after purchase while initial payment remains the highest problem		42	38	50	55	43
Delay in transfer		44	48	50	36	45
Prescribed machinery/asset not easily available in the market		33	21	36	55	33
Institutional financing facility not available		25	28	29	18	25
Capacity building/technical advice not provided		48	21	14	36	39
Long time gap between the purchase and receiving the subsidy amount		40	45	43	45	41
Biased towards large land owners		31	41	50	36	35
Poor quality of materials/machinery are supplied		29	41	50	82	37
Implementing agencies are located far away		32	38	57	64	38
Incidence of bribery		36	28	29	64	36
Lack of monitoring		45	34	64	36	44
Complementary inputs not available		41	34	21	64	39
Restricted Choice		51	55	50	36	51
Lack of marketing support		44	45	50	82	48
Any other		0	0	0	0	0

Table 19-27B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		85	100		80	88
Contact details of the department which pay subsidy not available		77	89		40	75
Eligibility or criteria for availing the subsidy not known		77	67		100	78
Procedure for the subsidy very tedious		65	44		40	58
No of documents required for availing subsidy are too many		62	44		60	58
Subsidy paid after purchase while initial payment remains the highest problem		62	78		100	70
Delay in transfer		65	56		40	60
Prescribed machinery/asset not easily available in the market		62	67		40	60
Institutional financing facility not available		77	67		100	78
Capacity building/technical advice not provided		92	100		80	93
Long time gap between the purchase and receiving the subsidy amount		54	44		0	45
Biased towards large land owners		65	44		80	63
Poor quality of materials/machinery are supplied		54	44		80	55
Implementing agencies are located far away		62	89		100	73
Incidence of bribery		73	67		60	70
Lack of monitoring		69	56		80	68
Complementary inputs not available		62	44		40	55
Restricted Choice		73	44		80	68
Lack of marketing support		69	67		40	65
Any other		0	0		0	0

Table 19-28A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless										
Marginal	52	28	64	16	46	34	42	39	58	23
Small	61	16	66	11	58	18	53	24	53	24
Medium	86	14	86	14	57	43	43	57	71	29
Large	50	19	50	19	31	38	50	19	56	13
Total	56	24	65	15	48	32	45	36	58	23

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 19- 28B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless								
Marginal	42	39	42	39	24	56	0	0
Small	53	24	53	24	42	34	0	0
Medium	93	7	93	7	57	43	0	0
Large	25	44	25	44	31	38	0	0
Total	46	34	46	34	31	50	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory

Table 19-29: Project details regarding the implementing agency survey

Sl. No.	Project Name	Implementing agency
02	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)	OMFED,D-2,Sahid Nagar,Bhubaneswar,Odisha-751007.
03	Developments of tanks and ponds for intensive aquaculture (IA).	Director of Fisheries, Odisha, Cuttack

Table 19-30: General Information regarding the implementing agency

Issues\ Projects	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)	Developments of tanks and ponds for intensive aquaculture (IA).
Type of construction	New Dairy Plant, Purchase of Bulk Milk Cooler, Purchase of Dairy Equipment, Capacity Upgradation of Old Dairy Plant	Construction of new tanks/ ponds in private land
New construction/Improvement of an older construction	New as well as improvement	New
Awareness about DAP	Yes	Yes
Included in DAP	Am not aware	Yes
Project proposed by	Implementing Agency	Implementing Agency
Level at which the project was proposed	District	State

Table 19-31: Fund Flow in the project

Issues\ Projects	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)	Developments of tanks and ponds for intensive aquaculture (IA).
Funds required for the project in 2016-17	Rs 650.00 Lakhs.	Rs.1750.00 lakh
Funds released for the project in 2016-17	Rs 450.00 Lakhs.	Rs.1750.00 lakh
Number of times funding released for the project in 2016-17		3
Major problems in the release of funds	There is no problem to get fund from RKVY Cell.	Phase wise fund released

Table 19-32: Physical Capacity of the projects

Issues\ Projects		Creation of dairy infrastructure to handle enhanced milk procurement by OMFED (IA)	Developments of tanks and ponds for intensive aquaculture (IA).
Required physical capacity of the selected work. (in numbers)		Varied for multiple components under the project	400.00 ha. water area to be developed through construction of new ponds in the State with minimum 0.40 ha./ beneficiary
Existing physical capacity excluding the current project.			Not related
Capacity of current project. (numbers)			400.00 ha. water body
Number of phases in the project			2 phases (Construction of pond and culture of fish)
In case of multiple phases, ways for management of funds			Provisions for fund in phased manner in RKVY
Fund management across the phases	Phase 1		Construction of tanks/ ponds
	Phase 2		Culture of fish

Table 19-33: Tendering & Maintenance regarding the project

Issues\ Projects	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)	Developments of tanks and ponds for intensive aquaculture (IA).
Whether tender was called for execution of the work	Yes	No
e-tender issued	Yes	
Opinion: e-tendering increases efficiency of tendering	Yes	
Opinion: e-tendering increases transparency	Yes	
Opinion: e-tendering has increased number and quality of responses from vendors	cant say	
Number of days given to respond to tenders	25	
Number of vendors responded to the tenders	1	
Method for evaluating the tenders	Tender Cancelled.	
Any re-bidding made	Yes	
Reasons for re-bidding	Did not receive enough tenders	
Selected vendor a Government / Private Organization	Private	
Whether selected vendor worked with the agency before	No	
Agency responsible for the maintenance of the constructed project in future years	Own agency	
If same agency, whether any financial provision is there in the project for maintenance in future	No	No

Table 19-34: Benefits and Challenges regarding the projects

Issues\ Projects		Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)	Developments of tanks and ponds for intensive aquaculture (IA).
Number of farmers expected to be benefitted from the construction	2017-18	2500 nos	Individual farmers who have constructed tanks for fish culture
	2018-19	3500 nos.	
	2019-20	4000 nos.	
Beneficiaries from the project other than the farmers		cooperatives	
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries			Extension services
Project needs enhancement / improvement			
Problems associated with the existing project		Physical achievement	Physical achievement
Opinion: the project will complete in stipulated time		No	No
Reasons for delay in project			Late approval of Project, due to G.P. election code of conduct
Whether infrastructure is geo-tagged?		Yes	Yes

Table 19-35: Convergence with other projects

Issues\ Projects		Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)	Developments of tanks and ponds for intensive aquaculture (IA).
Whether any convergence with other schemes		Yes	No

20 PUNJAB

Punjab is a one of the most important states in terms of agriculture and food production. The state is bordered by the Indian states of Jammu and Kashmir to the north, Himachal Pradesh to the east, Haryana to the south and south-east, Rajasthan to the south west, and the Pakistani province of Punjab to the west. After the partition of India in 1947, the Punjab province of British India was divided between India and Pakistan. The Indian Punjab was divided on the basis of language in 1966. It was divided into 3 parts. Haryanvi speaking areas (dialect of Hindi) were carved out as Haryana, Hilly regions and Pahari speaking areas formed Himachal Pradesh alongside the current state of Punjab. With an area of 50362 square kilometres and 22 district, this is one of the smallest state of Indian Union (20th). The economy of the Punjab is largely dependent on agriculture and the state has contributed significantly towards strengthening India's self-sufficiency in food crops. Introduction of high yielding varieties of wheat and rice during late 1960s, along with a proper policy put the agricultural economy of the State on a high growth path during the green revolution. Agriculture is still a crucial sector of the State's economy in terms of employment and contributes about 22% of the Gross State Domestic Product (2010-11). The State has about 4.2 million hectares of cultivable area, which is 3% of the net area sown in the country. It produces about 19% of India's wheat and 11% of rice from 12.4% and 6.7% of the total area under wheat and rice, respectively. It has contributed 25 -50% of rice and 38 -75% of wheat to the central pool of food grains over the last four decades (Agricultural Policy for Punjab)⁴⁶.

Rashtriya Krishi Vikas Yojana, in Punjab started in 2007-08. Till 2014-15, Union government has provided 100% funding to the selected agro-based projects to improve the agriculture situation. However, in 2015-16, the assistance has been reduced to 60:40 percent for centre and

46 Agriculture Policy For Punjab. (March 2013) Submitted To Government Of Punjab by Committee for Formulation Of Agriculture Policy For Punjab State, Accessed on 16th August, 2017

Source: <http://punjab.gov.in/documents/10191/20775/Agriculture+policy+of+punjab.pdf/9db4456f-55c5-4b55-882a-adf5811b2a53>

state. Under RKVY scheme, Rs. 260.50 crore was allocated, among which Rs. 95.81 crore was released and Rs. 70.99 crore was spent for Punjab for 2016-17 till 5th February, 2018⁴⁷. MIS report representing the proposed allocation of funds across projects is not uploaded in RKVY website for Punjab for the year 2016-17. According to MIS report, Punjab, in 2015-16, proposed 4 projects amounting to 77.5 Crore. No project was proposed in the category of very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), two projects are proposed for non-farm activities sector. Apart from that, one project is proposed in cost 10 to 25 crore category in research and another is in very large (cost > 25 crore) category for Natural Resource Management. Figure 20-1 shows allocation, release and expenditure in RKVY in Punjab over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Punjab. We have selected 5 projects for Punjab and analysed the performance of RKVY by collecting primary information. List of selected projects for Punjab is given below (Table 20-1).

20.1 RESULTS FROM PRIMARY SURVEY

20.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Punjab, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

⁴⁷ No data could be accessed for project proposals of Punjab for the year 2016-17, because of unavailability of data for Punjab in MIS report for 2016-17 in RKVY website

Table 20-2 renders the details of sample of the households selected for our survey. The survey selected beneficiaries and non-beneficiaries at 80:20 ratio across the size classes. 75% of the beneficiaries and 80% of the non beneficiaries were selected from this category. Small farmers had 15% and 7% representation from the beneficiaries and non-beneficiaries respectively. There were no respondents for medium size class of farmers from the cohort of non-beneficiaries.

20.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

Table 20-3 shows the land holding pattern of the surveyed households from Punjab. The beneficiaries reported to own more average land than the non beneficiaries, across the entire land holding category except small farmers. Only the marginal farmers were found to have leased in land for cultivation. Marginal farmers (beneficiary category), leased in 0.87 hectare of land on an average. Landless farming households from non-beneficiary categories reported to have leased in only 0.40 hectare of land. It was only the large farmers from the large size class land holding, to have reported leasing out of land to others.

Table 20-4 shows the details of the irrigation pattern of our sample. This table shows that only 25% of the marginal farmers from beneficiary segment were using canals for irrigation. None of the other farming households reported to have been using it. Among the beneficiaries 28% of the marginal farmers, 34% of the small farmers, 32% of the medium farmers and none from the large farmers were reportedly using electricity driven rented tube-wells for irrigation. None of the respondents were using rented diesel driven tube wells for irrigation.

Own tube-wells plied by electricity seems to be the most popular tool for irrigation among the respondents. From beneficiaries, 24%, 41%, 68%, 100% of the marginal, small, medium and large farmers and 40% of the small farmers from the non-beneficiary reported to use this as their irrigation method. It is quite interesting to observe that, the propensity to use electricity driven own tube- well has monotonically increased with size class of the respondents. None of the respondents were found using irrigation through tanks or wells. Only 23% of the marginal farmers from the cohort of the beneficiary farmers were found using some other option. With the above observations, we can say that electric tube-wells are by far the most widely used

method of irrigation in Punjab. Beneficiaries were found to have been using diversified methods for irrigations, but for the non-beneficiaries, it was completely confined to electric tube-wells.

A total of 830 individuals were surveyed in Punjab. Of them, 686 were beneficiaries and 144 were non-beneficiaries. Table 20-5 shows that age group 25-40 is the most populated age group in terms of both beneficiaries and non-beneficiaries. Respectively 28% of beneficiaries and 26% of non-beneficiaries are from this age group. Another 20% of the beneficiaries and 23% non-beneficiaries came from the age group of 40-59 years of age group. Only 16% beneficiaries and 13% of the non-beneficiaries reported to be aged above 59. It is important to observe that a sizable section of respondents were from the young age 15 years or below that. Table 20-5 also offers details about the educational qualification of the beneficiaries and the non beneficiaries from our survey. Most of the respondent were educated to the level of 8th standard to 12th standard of schooling. 36% of the beneficiaries and 39% of the non-beneficiaries were from this group. 15% of the beneficiaries and 12% of the non-beneficiaries were found to be illiterate. It is evident from Table 20-6 that maximum number of respondents was students and housewives in our survey. From both the categories, 29% reported this as their occupation. Another 24% of the beneficiaries and 23% of non-beneficiaries reported their occupation as house wives. Only 18% of the individual respondents from both beneficiaries and non-beneficiaries segment reported farming as their occupation.

20.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

Income is one of the most important parameter evaluating the impacts of projects. Agricultural production depends heavily on the uncertainties of nature. Given this feature, the income source of the cultivators often swindle between uncertain outcomes. Diversification of income sources has been a tested method of diminishing this uncertainty of income for household farmers. Here in this section, we will discuss not only the quantum of the earnings but at the same time will also try to delve into the possible impacts of RKVY in diversifying the income channels for its beneficiaries.

Table 20-7 shows the response pattern of the respondents, when they were asked about their income sources. 56% of beneficiary and 53% of non-beneficiary households acknowledged

farming as their source of income. None of the non-beneficiaries were found engaged with horticulture, though, 7% of the beneficiaries reported it as a source of their income. Another 18% of the beneficiaries and 15% of the non-beneficiaries were found to be engaged with dairy for secondary income. None of the beneficiaries were engaged as agricultural labourer, while 2% of the non-beneficiaries were working as agricultural labourers. 11% of the non-beneficiaries worked as casual labourers. For bee keeping, 12% of the beneficiaries and 4% of the non-beneficiaries replied to have been depending on it. For salaried employment 3% of beneficiaries and 2% and for non-beneficiaries categorised sources of secondary income.

Average annual income of the sample beneficiary households in aggregate is Rs. 389601 in Punjab while the same for non-beneficiary households is Rs. 344894 in 2016-17 (Table 20-8). Average annual income for beneficiary households was Rs. 392628 in 2015-16 while it was Rs. 329489 for non-beneficiary households in the same year (Table 20-9). Major sources of income are farming, horticulture, dairy and bee-keeping apart from salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost (Table 20-8). Table 20-10 shows the rate at which Average Income, Cost and Average profit of the beneficiaries and beneficiaries grew from 2015-16 to 2016-17. Average profit of the beneficiaries grew at the rate of 5%, 46% and 16% for farming, dairy and other non-categories economic activities. The same for the non-beneficiaries were 2% 36% and -2% respectively. It is evident that the beneficiaries were receiving much higher profit than the non-beneficiaries in each of the trades.

20.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

The previous section showed that that the cost of production for the beneficiaries grew at a lesser rate than the non-beneficiaries. In order to understand this phenomenon with further nuance, we have checked the project wise expenditure pattern of the beneficiaries and non-beneficiaries. The respondents were asked to provide details of their expenditures incurred on heads described in Table 20-11. Then we derived average expenditure for all these head separately for beneficiaries and non-beneficiaries for the years of 2015-16 and 2016-17. From that we deduced the growth rate in the expenditures. Table 20-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households.

Households have reported expenditure on rent on leased-in land, rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and other fuels. Apart from these, major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on all the individual categories is higher for beneficiaries than non-beneficiaries in 2016-17. Both beneficiaries and non-beneficiary household did not report any expenditure on electricity for irrigation. Table 20-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16.

20.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In this section we will discuss the asset distribution pattern among the beneficiaries and non-beneficiaries of the survey. Table 20-13 describes the percentage distribution of agricultural instruments in terms of numbers possessed by the farmer households. Marginal farmers (both from beneficiary and non-beneficiary segment) had very little assets. Interestingly the marginal farmers from beneficiaries reported to have more proportion of assets than the non-beneficiaries. Non-beneficiary marginal farmer reported to possess only three types of agricultural equipments as assets, viz manual or power sprayer, electric pump sets, and folded choppers. But the marginal farmers from the non-beneficiaries reportedly had diversified asset pattern. Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 20-14). Among non-beneficiary households, marginal farmers have majority of livestock.

Houses are a dependable measure for asset holding. In our survey, we asked our respondents about the houses they were residing, and then derived a percentage distribution of their responses according to beneficiaries and non-beneficiaries. Table 20-15 gives details of the responses provided by beneficiaries and non-beneficiaries when they were asked about their houses. In Punjab an exceptionally large proportion of the households of 93% were found to be residing in pucca houses. The percentage distribution for respondents living in pucca houses was same for both the beneficiaries and non-beneficiaries. Table 20-16 shows distribution of possession of consumer items among respondents of our survey. It may be noted that, the

average consumer asset holding is higher for Punjab than most of the other states. At the same time, it the the beneficiaries were found to be in better position than the non-beneficiaries.

20.1.1.5 PROFITABILITY OF SAMPLE CROPS

RKVY was aimed to increase overall expansion of agriculture. Beneficiary households cultivate paddy, wheat, bajra, maize, soyabean, mustard, vegetables, flower etc. (Table 20-18). Non-beneficiary households cultivate wheat, maize, fruit, flowe and vegetables (Table 20-19). Table 20-20 shows the percentage difference between beneficiaries and non-beneficiaries over cultivated area, irrigated area, production, marketed quantity, price received cost and profitability. Now we discuss the patterns of this indicator for the main crops in Punjab. Though, in total there was no difference in cultivated area between beneficiaries and non-beneficiaries, but when we look into the crop wise details, there are differences between them. For the paddy cultivators, the beneficiaries were cultivating over 11.7% of more average land than the non-beneficiaries. Their irrigated area was 11.7% more than non-beneficiary rice cultivators. The percentage difference for production, marketed quantity total paid costs and profitability was 16.6%, 17.4%, 12.3% and 20%. Similarly, for other crops too, the beneficiaries were performing better than the non-beneficiaries. Remarkable increase in vegetable and reduction in production of pulses are important characteristics of this state.

20.1.1.6 AWARENESS OF RKVY AND ITS SOURCES

Awareness and accessibility of information are important indicators of prospect and success for projects. RKVY is in existence for a decade now. So it is important to measure RKVY's presence in the popular domain of common information among the farmers. Table 20-21 shows the response pattern of the respondents of our survey, when they were asked about their information about RKVY. Quite expectedly all the beneficiaries of our survey were found to be informed about RKVY. But only 47% of the non beneficiaries were found to be aware of this project of RKVY. This shows that the RKVY is not as well known in Punjab as it is in other states. When asked about the beneficiary impacts, all the beneficiaries, but none of the non-beneficiaries accepted to have benefited from RKVY. In terms of long run benefits, 19% of the beneficiaries acknowledged to have benefited from it since last five years. When asked about impact about other government projects, 2% of the beneficiaries and none of the non-

beneficiaries responded to have benefited from them in the current year; 73% of respondents accepted to have benefited from other projects during last 5 years, but only 43% of the non-beneficiaries said that they were benefited from projects other than RKVY in last -5 years.

Now, with the help of Table 20-22 we will try to assess the role played by various government agencies in dissemination of information of RKVY. Agriculture and Horticulture Departments were most frequently recognised source of information among beneficiaries. According to 67% of the beneficiaries and 36% of the non-beneficiaries, they got their information about RKVY from this source. For non-beneficiaries, 57% of the respondents acknowledged friends and neighbours as their source of information. Sources like newspapers, Televisions/ Radio, Krishi Vikash Kendras (KVKs), input suppliers, agricultural exhibitions had nil or negligible impact in dissemination of information about RKVY.

20.1.1.7 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Encouraging farmers by creating an conducive environment for agriculture was one of the main stated objectives of RKVY. Various crop based and ingredient based subsidies were designed to enable the tillers to continue to work under a profitable condition. Table 20-23 shows that the beneficiaries were offered financial assistance for seeds for their first crop only. No assistance was provided for other ingredients like fertilisers, micro nutrients, bio-fertilisers and others. On the other hand, the non-beneficiaries of our survey, reported to have been getting assistances for wider varieties of inputs. Table 20-24 shows the distribution of assistance according to land size of beneficiaries and non-beneficiaries. For beneficiaries maximum cases of assistance was endowed towards the large farmers. Of the total assistance for seeds for their first crop was rendered

Soil testing facility helps farmers to optimally use their land for cultivation. It helps the farmers to opt for best crop that suits their soil and weather condition. It also suggest nutrients required to upgrade their soil quality and hence agricultural production. It was desired that RKVY will enhance soil testing facilities and encourage the beneficiaries to more frequently utilise these facilities to upgrade their productivity. During the survey the respondents were asked specific question related to their experiences regarding soil testing. They were asked whether or not thy

sent their soil for testing or not, how many of them were given soil health cards, the nature of the ownership of soil testing lab etc. then their replies were sorted according to their land holding size and beneficiary or non-beneficiary division. These sorted and response pattern has been tabulated in Table 20-24. The propensity to undergo a soil test was higher for the beneficiaries than the non-beneficiaries. For beneficiaries 95% of the respondents replied to have undergone soil testing whereas, the same for the non beneficiaries are merely 70%. of those who conducted test for their soil among beneficiaries , 95% reported to have received a soil health card whereas only 70% of the non beneficiaries reported the same. Though almost everybody reportedly got the test done from the government labs, in some cases the beneficiaries have taken help from non-governmental laboratories too.

20.1.1.8 CONSTRAINTS-FACED BY SAMPLE HOUSEHOLDS

Accessibility of information is important for any project to succeed. The respondents were asked a set of questions regarding their perception about RKVY. In Table 20-25 we have tabulated the percentage share of the respondents who ticked yes to the question to all those who answered the question. Table 20-26A and Table 20-26B show that the perception of the beneficiaries is more positive than the non-beneficiaries. 21% of the beneficiaries replied in yes when they were asked whether they found information about RKVY programme details not easily available. But it was 90% of the non-beneficiaries who replied yes in this question. According to 33% of the beneficiaries and 67% of the non beneficiaries contact details of the subsidy disbursing mechanism was not easily available. These tables offer detailed distribution according size class and beneficiaries and non-beneficiaries on some other related questions. On being asked about accessibility of information on eligibility criterion for subsidy, 13% of the beneficiaries and 57% of the non beneficiaries found not easily accessible. According to 42% of the beneficiaries and 57% of the non beneficiaries, procurement procedure of subsidies was very lengthy and tedious. Another 35% of the beneficiaries and 50% of the non-beneficiaries found the paperwork for availing the subsidy was very clumsy as the number of documents required was very high.

Subsidies are provided only after the purchase has been done. Respectively 70% and 77% of beneficiaries and non beneficiaries pointed out that this process as problem and opined that,

subsidies should be provided before the purchase. According to 56% of the beneficiaries and 73% of the non-beneficiaries, the delay in transfer for the subsidy amount is impediment in making the maximum use of the benefit transfers.

RKVY was aimed towards higher capacity building and enhancing private and public capital accumulation in agricultural sector. Respondents were asked about their opinion about capacity building and technical advice. According to 43% of the beneficiaries and 97% of the non-beneficiaries the capacity building and technical advisory mechanism was not adequate to meet their needs. According to 67% of the beneficiaries and 80% of the non-beneficiaries the time span between purchasing and receiving the cash benefit transfer was very long. Though only 9% of the beneficiaries reported cases of bribery, but all of the non-beneficiaries reported to have faced cases of bribery.

The respondents were asked to express their opinion about RKVY's impact on employment generation, expansion in production, improved marketing facilities, price realization, financial assistance, infrastructure building, capacity building, post harvesting storage, procurement and any other factor of their choice. The responses have been shown in Table 20-26A and Table 20-26B. As we can see here, that for financial assistance RKVY has been very widely lauded by all the beneficiaries. Besides, price realization and infrastructural capacity building role of RKVY was also found satisfactory by 55% and 53% of the beneficiary respondents.

20.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

Two projects have been covered in Punjab - one from construction category entitled "Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health" and the other from community services category entitled "Proposal for setting up of Fruits and Vegetables Pack House at Malerkotla, Sangrur".

Research lab is being constructed and also improved under the first project (Table 20-27). It is observed from Table 20-28 that 35% of the required fund is released from the approved fund. However, the major problem regarding funds is reported to be the uncertainty in release of funds. The work is planned in two phases. In phase one, civil works will be undertaken and in

second phase, machinery and equipments will be procured (Table 20-29). For the project “Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health”, tenders were not invited because the execution of work is being carried out by Department of Rural Development and Panchayats, Government of Punjab (Table 20-30). As per the assessment of the respondent, the project is expected to benefit the livestock owners in the state. In addition, livestock owners from the adjoining states can benefit through timely availability of vaccines and antigens for their livestock. The suggested complementary/ supplementary projects (by the respondent) for the ongoing projects are production of viral vaccines for livestock (Table 20-31). There is no reported convergence of the project with other projects (Table 20-32).

A production co-operative is being promoted as collective activity under Project 2 belonging to the community and services category. This is expected to benefit farmers through better input supply, lower cost of inputs, higher production due to collectivization and, increased cooperation (Table 20-33). The project was proposed by the implementing agency at the block level. 44% of the required fund was released in 2016-17 (Table 20-34). Delay in release of funds is reported to be the main problem for the project (Table 20-35). In addition to farmers, the project also aims to benefit cooperatives, FPO s and other stakeholders (Table 20-36).

20.2 CONCLUSION

Punjab is often referred as the food bowl of India, for its contribution to agricultural production. Fertile land, improved irrigation and initiation of HYVP and mechanization of agriculture during Green Revolution have made this state one of the most advanced agricultural states in India. Punjab is believed to be the one of the biggest beneficiaries of green revolution in India. RKVY began in this state in 2007-08. Mainly agro based projects were on priority for Punjab. It may be noted that Punjab is one of the smaller states in terms of receiving RKVY allocations. A total of 150 households were surveyed in Punjab, of which 120 were beneficiaries of RKVY and 30 were non-beneficiaries. In terms of total numbers it was 686 beneficiaries and 144 non-beneficiaries. We have surveyed three projects in Punjab. Based on the response patterns of this sample we can found following observations.

It was only the large farmers from the large size class land holding, to have reported leasing out of land to others. As method of irrigation electric tube-wells were found to be most widely used both among the beneficiaries and non-beneficiaries by far the most widely used method of irrigation in Punjab. Beneficiaries were found to have been using diversified methods for irrigations, but for the non-beneficiaries, it was completely confined to electric tube-wells. The beneficiaries were using more diversified sources for income and at the same time they were earning more than the non-beneficiaries.

In terms of expenditure in agriculture it was found the beneficiaries faced a slower growth rate of expenditure than the non-beneficiaries. Maximum expenditure difference was found in leasing in of lands and fuels other than diesel and electricity for agriculture.

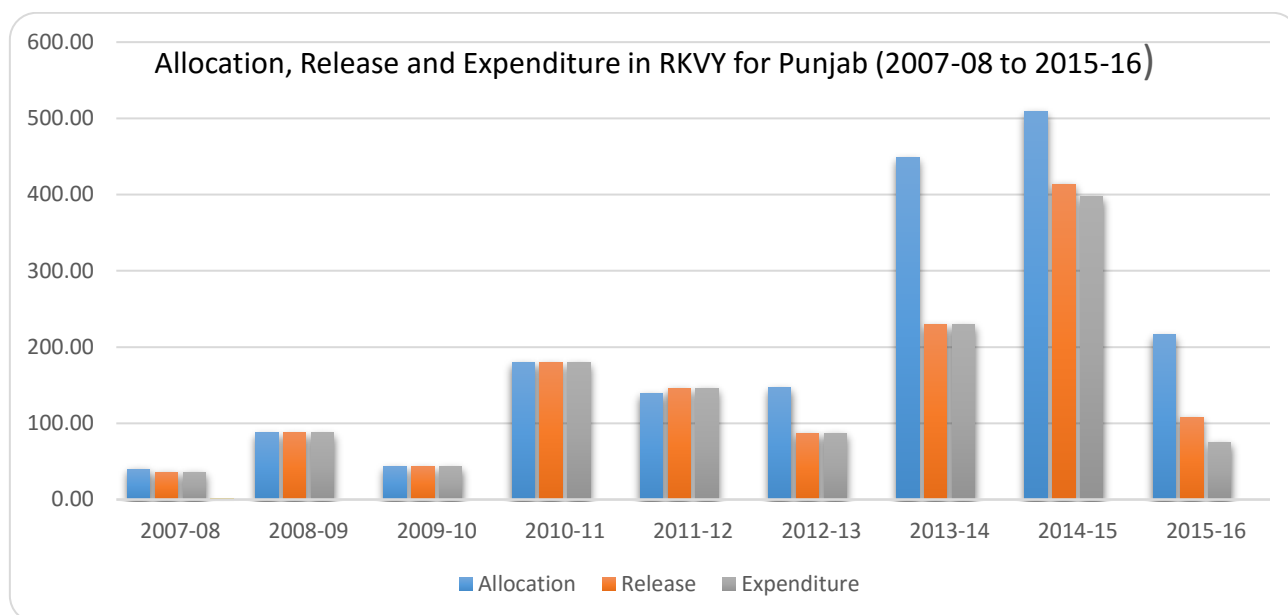
The average cultivable land, irrigated area, production, marketed quantity and profit of the beneficiary was found to be higher than that of the non- beneficiaries. Remarkable increase in vegetable and reduction in production of pulses are important characteristics of this state.

Beneficiaries accepted to have benefited from RKVY both in short run and long run basis. The long run impact of RKVY seems more perceivable than the short run.

Soil testing was more common among the beneficiaries. Though most of the soil testing was done in government laboratories, but some beneficiaries reportedly have got it done through other institutions as well.

According to the beneficiaries RKVY played commendable role employment generation, price realisation, improving market skills, providing financial assistance, building infrastructure and in capacity building.

Figure 20-1: Allocation Release and Expenditure in Punjab (unit, Rupees Crore)



Source: RKVY website⁴⁸

Table 20-1: List of selected project name and code

Project Code	Project Name
1	Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health (IA).
2	Proposal for setting up of Fruits and Vegetables Pack House at Malerkotla, Sangrur (IA).
3	Seed Replacement of Wheat Seed (H)
4	Proposal to Provide Financial Assistance for Horticulture Activities in Moga, Mansa, Barnala and Ropar Districts (Non Mission) (H)
5	Underground water pipeline

Table 20-2: Details of Household Sample

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	90(75)	24(80)	114(100)
Small	18(15)	2(7)	20(100)
Medium	5(4)	(0)	5(100)
Large	7(6)	4(13)	11(100)
Total	120(100)	30(100)	150(100)

⁴⁸<http://rkvy.nic.in/> accessed in March 2017

Table 20-3: Land Holding Pattern of the Households Surveyed (unit: Hectares)

	Beneficiary					Non-Beneficiary				
	LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
Owned land		1.03	3.15	7.20	11.67		0.89	3.50		1.00
Leased-in Land / share cropping		0.87	0.00	0.00	0.00		0.40	0.00		0.00
Leased-out Land / share cropping		0.00	0.00	0.00	0.00		0.00	0.00		1.00
Total operated area (owned+LI-LO)		1.04	3.15	7.20	11.67		0.85	3.50		0.00

Table 20-4: Irrigation pattern of the households (%)

			Beneficiary					Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
Irrigated Area by canal			0	25	0	0	0	0	0	0	0	0
Irrigated Area by tubewell	Rented	Electric	0	28	34	32	0	0	0	40	0	0
		Diesel	0	0	0	0	0	0	0	0	0	0
	Owned	Electric	0	24	41	68	100	0	0	60	0	0
		Diesel	0	0	25	0	0	0	0	0	0	0
Irrigated Area by Tanks			0	0	0	0	0	0	0	0	0	0
Irrigated Area by Wells			0	0	0	0	0	0	0	0	0	0
Irrigated Area by others			0	23	0	0	0	0	0	0	0	0
Total			0	100	100	100	100	0	0	100	100	100

Table 20-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	20	18	20
	>15 to 25	15	20	16
	>25 to 40	28	26	28
	>40 to 59	20	23	21
	>59	16	13	16
	All Groups	100	100	100
Education	Illiterate	15	12	14
	Class 1 to 5	17	17	17
	Above Class 5 to 8	15	14	15
	Above Class 8 to 12	36	39	36
	Above Class 12	11	11	11
	Other diploma	2	0	2
	can read and write	2	3	3
	can read only	1	0	1
	can count only	0	3	1
	could not attend class 1	1	0	1
	All Groups	100	100	100

Table 20-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	18	18	18
casual labour	1	2	1
self-employment (specify)	1	1	1
salaried employment	0	1	1
Student	29	29	29
housewife	24	23	24
non-working	11	15	12
others (no separate income)	15	11	14
All Groups	100	100	100

Table 20-7: Distribution of sample households according Sources of Income (%)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	56	53
Horticulture	7	0
Dairy	18	15
Agricultural Labour	0	2
Casual Labour	0	11
Bee-keeping	12	4
Salary	3	2
Other	4	13
Total	100	100

Table 20-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	597259	267191	330068	549000	259240	289760
Horticulture	415714	304286	111429			
Dairy	34079	15211	18868	47143	21143	26000
Casual Labour	30000			77000		
Bee-keeping	116400	56000	60400	200000	75000	125000
Salary	101667			130000		
Other	136250	53714	82536	201667	85000	116667
Total	389601	188824	200777	344894	182225	162669

Table 20-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	572155	257781	314374	527840	244160	283680
Horticulture	416250	245000	171250			
Floriculture	50000					
Dairy	25243	12342	12901	35000	15857	19143
Agricultural Labour				25000		
Casual Labour	30000			64000		
Bee-keeping	146364	70455	75909	190000	36500	153500
Salary	91667			120000		
Other	117500	46286	71214	200000	82500	117500
Total	392628	186124	206504	329489	169575	159914

Table 20-10: Percentage Difference of Income, Cost and Profit for Beneficiaries and Non-Beneficiaries over 2015-16 and 2016-17

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	4	4	5	4	6	2
Dairy	35	23	46	35	33	36
Agricultural Labour	0			20		
Casual Labour	0	0	0	20		
Salary	11	0	0	8		
Other	16	16	16	1	3	-1

Table 20-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	43917	41833	43325	39833
Total rent on machinery (tractor, harvester etc)	30606	24133	28100	22017
Expenditure on purchased water for irrigation	2756	1500	2450	1350
Expenditure on electricity for irrigation	0	0	0	0
Expenditure on diesel	30217	30633	28046	28700
Expenditure on other fuels for agriculture	4550	4867	4020	4017
Any other	151076	115567	147138	110233
Total expenditure on agriculture	263121	218533	253079	206150

Table 20-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non Beneficiary
Rent on leased-in land		
Total rent on machinery (tractor, harvester etc)		10
Expenditure on purchased water for irrigation	12	
Expenditure on electricity for irrigation		
Expenditure on diesel	8	
Expenditure on other fuels for agriculture	13	
Any other	3	5
<i>Total expenditure on agriculture</i>	4	6

Table 20-13: Distribution of Agricultural Equipments

		Beneficiaries					Non-Beneficiaries				
		LL	ML	SL	MD	LA	LL	ML	SL	MD	LA
1	Tractor		2	20	36	90		0	10	10	16
2	Trolley		2	19	37	93		0	0	11	17
3	Weeder		0	8	31	80		0	17	14	36
4	Manual / Power Sprayers		5	33	42	66		14	35	5	7
5	Threshers		4	18	39	92		0	0	13	13
6	Drier		0	0	0	100		0	0	0	0
7	Electrical Pump sets		9	30	36	67		10	32	6	10
8	Diesel Pump sets		3	18	44	81		0	20	12	16
9	Sprinkler sets / Drip Irrigation Equipments		0	0	0	100		0	0	0	0
10	Cane Crusher / Agro-processing Equipments		0	0	0	0		0	0	0	0
11	Leveler		5	17	34	100		0	0	0	22
12	Fodder Choppers		12	34	46	71		20	19	4	6
13	Bullock cart		0	0	0	100		0	0	0	100
14	Harvest Combine		0	0	100	0		0	0	0	50
15	Others		0	35	27	100		0	0	0	0

Table 20-14: Livestock ownership by households (2016-17)(% of number of livestock)

Livestock	Beneficiary						Non-Beneficiary					
	Lan dles s	Mar gina l	Sma ll	Med ium	Lar ge	Tota l	Lan dles s	Mar gina l	Sma ll	Med ium	Lar ge	Tota l
Cow	0	71	19	5	4	100	0	83	17	0	0	100
Buffalo	0	68	17	2	13	100	0	77	15	0	8	100
Young Stock	0	69	18	5	8	100	0	94	6	0	0	100
Male Draught	0	69	31	0	0	100	0	100	0	0	0	100
Sheep	0	0	0	0	100	100						
Goat	0	82	5	0	14	100	0	100	0	0	0	100
Pig												
Poultry	0	80	0	0	20	100						

Table 20-15: Percentage Distribution of Houses

Type	Beneficiary	Non-beneficiary	Total
Kachha	3	0	3
Pucca	93	93	93
Semi-Pucca	3	7	4
Others	0	0	0
Total	100	100	100

Table 20-16: Asset Distribution of Consumer items among Beneficiaries and Non Beneficiaries in Punjab.

	Beneficiary	Non-Beneficiary
TV	98	93
Telephone	4	0
Mobile phone	98	100
Cycle	94	77
Two wheeler	91	83
Four wheeler	20	17
Refrigerator	71	60

Table 20-18: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						profitability
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	
paddy	1	1	10	5	678	6389	-2849
wheat	2	1	12	7	770	7491	-1971
bajra	0	0	1	0	0	800	-800
maize	2	1	10	9	934	5900	2037
soyabean	1	0	1	1	2700	1200	1500
mustard	0	0	2	2	2300	2500	2100
vegetable 1	1	0	122	122	1545	72561	116313
vegetable 2	1	0	65	65	2716	76779	100790
vegetable 3	3	1	134	134	2504	134167	200766
flower	1	1	1000	1000	2200	75000	2125000

Table 20-19: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non-beneficiary households (2016-17)

profitability	Non-beneficiary						profitability
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	
wheat	1	0	6	3	395	4268	-3280
maize	1	0	7	5	816	3809	610
fruit	3	3	180	180	800	60000	84000
vegetable 1	1	0	50	50	1775	44750	44000
vegetable 2	1	0	73	73	2143	61429	94694

Table20-20: Percentage difference between beneficiaries and Non-Beneficiaries over some important indicators and Important Crops

Crop	Cultivated Area	Irrigated Area	Production	Marketed Quantity	Price received	Total paid-out costs	Profitability
Paddy	11.7	11.7	16.6	17.4	-0.9	12.3	20.0
Wheat	-0.6	-0.6	4.3	3.6	-7.6	-2.4	-5.6
Moong	100.0	100.0	75.0	97.1	-58.3	-18.8	-17.3
Vegetable 1	287.5	287.5	367.1	373.4	61.4	459.2	816.7
Total	0.0	0.0	0.0	0.0	0.0	0.0	90.2

Table 20-21: Awareness about RKVY

	Beneficiaries	Non Beneficiaries	Total
Have you heard about Rashtriya Krishi Vikas Yojana?	100	47	89
Benefits in 2016-17	100	0	80
Benefits in last 5 years	19	0	15
Benefits from any other government scheme in 2016-17	2	0	1
Benefits from any other government scheme in last 5 years	73	43	67

Table 20-22: Source of Awareness regarding RKVY (2016-17) (%)

Source	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	15	57	19
News Paper	2	0	1
Agriculture / Horticulture Department	67	36	63
SAU	0	0	0
KVK	2	0	1
Input Suppliers	0	0	0
TV/ Radio	3	0	3
Agricultural. Exhibitions	0	0	0
Zilla Parishad/ Gram Panchayat	12	7	11
Other sources	0	0	0
Total	100	100	100

Table 20-23: Crop Distribution (ingredient wise)

Category	Size class Category	Seeds and Planting Materials		Fertilizers	Micro nutrients	Bio-fertilisers	Pesticides	Others	Total
		Crop1	Crop2						
Beneficiary	Landless								
	Marginal	100	0	0	0	0	0	0	100
	Small	100	0	0	0	0	0	0	100
	Medium	100	0	0	0	0	0	0	100
	Large	100	0	0	0	0	0	0	100
	Total	100	0	0	0	0	0	0	100
Non-Beneficiaries	Landless								
	Marginal	14	14	14	14	14	14	14	100
	Small	12	15	15	15	15	15	15	100
	Medium	10	15	15	15	15	15	15	100
	Large	9	15	15	15	15	15	15	100
	Total	11	15	15	15	15	15	15	100

Table 20-23: Crop Distribution (land size wise)

Category	Size class Category	Seeds and Planting Materials	Fertilizers	Micro nutrients	Bio-fertilizers and bio-control agents	Pesticides	Others	Total
		Crop1	Crop2					
Beneficiaries	Landless							
	Marginal	3	0	0	0	0	0	0
	Small	25	0	0	0	0	0	0
	Medium	28	0	0	0	0	0	0
	Large	45	0	0	0	0	0	0
	Total	100	0	0	0	0	0	0
Number of Non-Beneficiaries	Landless							
	Marginal	20	15	15	15	15	15	15
	Small	34	31	31	31	31	31	31
	Medium	24	25	25	25	25	25	25
	Large	23	29	29	29	29	29	29
	Total	100	100	100	100	100	100	100

Table 20-24: Soil Testing

	Land-size	Whether soil is tested in your area?	soil health card issued? (who tested soil)	Soil Tested in Government Lab
Beneficiary	Landless			
	Marginal	83	20	100
	Small	95	37	100
	Medium	100	74	97
	Large	97	73	100
	Total	95	55	99
Non-Beneficiary	Landless	0	0	
	Marginal	80	0	100
	Small	70	14	100
	Medium	100	67	100
	Large	58	57	100
	Total	70	33	100

Table 20-25: Constraints faced by Households

	Questions	Beneficiaries						Non-Beneficiaries					
		LL	ML	SL	MD	LA	Total	LL	ML	SL	MD	LA	Total
1	Information about RKVY programme details not easily available		28	30	18	10	21		80	100	33	100	90
2	Contact details of the department which pay subsidy not available		28	38	29	32	33		100	80	67	83	67
3	Eligibility or criteria for availing the subsidy not known		17	11	12	13	13		40	50	33	75	57
4	Procedure for the subsidy very tedious		44	38	26	61	42		40	70	100	42	57
5	No of documents required for availing subsidy are too many		39	24	38	42	35		80	30	100	42	50
6	Subsidy paid after purchase while initial payment remains the highest problem		50	76	71	74	70		80	90	67	67	77
7	Delay in transfer		50	51	59	61	56		80	80	33	75	73
8	Prescribed machinery/asset not easily available in the market		22	22	12	16	18		0	20	67	25	23
9	Institutional financing facility not available		28	11	21	19	18		20	50	67	25	37
10	Capacity building/technical advice not provided		22	51	56	32	43		80	100	100	100	97
11	Long time gap between the purchase and receiving the subsidy amount		61	73	65	65	67		60	90	100	75	80
12	Biased towards large land owners		50	19	12	13	20		60	30	67	8	30
13	Poor quality of materials/machinery are supplied		17	8	9	13	11		20	50	67	25	37
14	Implementing agencies are located far away		39	35	41	42	39		20	40	33	42	37
15	Incidence of bribery		0	8	6	19	9			100		100	100
16	Lack of monitoring		50	65	71	55	62		80	80	67	83	80
17	Complementary inputs not available		11	16	29	29	23		80	10	67	50	43
18	Restricted Choice		11	16	26	23	20		60	40	23	100	40
19	Lack of marketing support		22	30	32	32	30		80	50	67	58	60
	Any other (specify)												

Table 20-26A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better Price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	0	0	57	43	56	44	58	42	92	8
Marginal	52	48	72	28	67	33	61	39	100	0
Small	67	33	80	20	60	40	40	60	100	0
Medium	60	40	71	29	86	14	14	86	100	0
Large	57	43	61	39	59	41	55	45	94	6
Total	55	46	53	47	80	20	64	36	96	4

Table 20-26B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	50	0	33	67	13	87	23	77
Marginal	67	33	44	64	11	89	28	72
Small	20	80	20	80	0	100	60	40
Medium	86	14	71	29	0	100	43	57
Large	53	47	37	63	12	88	27	73
Total	70	30	35	65	14	86	35	35

Table 20-27: Project Details

Sl. No.	Project Name	Implementing agency
01	Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health (IA).	Department of Animal Husbandry Punjab Livestock Complex, Sector 68 SAS Nagar through Punjab Livestock Development Board, Ludhiana
02	Proposal for setting up of Fruits and Vegetables Pack House at Malerkotla, Sangrur	Punjab agri export corporation ltd. Plot No. 2-A, Sector 28-A, Madhya Marg, Chandigarh -160002.

Table 20-28: General Information regarding the implementing agency

Issues\ Projects	Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health
Type of construction	Research labs
New construction/Improvement of an older construction	Both
Awareness about DAP	Yes
Included in DAP	Yes
Project proposed by	No
Level at which the project was proposed	4

Table 20-29: Fund Flow in the project

Issues\ Projects	Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health
Funds required for the project in 2016-17	1585
Funds approved for the project in 2016-17	1585
Funds released for the project in 2016-17	552.24
Number of times funding released for the project in 2016-17	3
Major problems in the release of funds	Uncertainty in amount released

Table 20-30: Physical Capacity of the projects

Issues\ Projects		Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health
Required physical capacity of the selected work. (in numbers)		2
Existing physical capacity excluding the current project.		1
Capacity of current project. (numbers)		1
Number of phases in the project		Two Phases (Phase-I Civil Works, Phase-II - Machinery and equipment)
In case of multiple phases, ways for management of funds		2
Fund management across the phases	Phase 1	Ph1_Civil Works
	Phase 2	Ph2_Machinery and Equipments

Table 20-31: Tendering & Maintenance regarding the project

Issues\ Projects		Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health
Whether tender was called for execution of the work		No
e-tender issued		No
Opinion: e-tendering increases efficiency of tendering		Yes
Opinion: e-tendering increases transparency		Yes
Number of days given to respond to tenders		Execution of work is being carried out by Department of Rural Dev. and Panchayats, Govt. of Punjab.
Selected vendor a Government / Private Organization		Government
Whether selected vendor worked with the agency before		
Agency responsible for the maintenance of the constructed project in future years		Own agency
If same agency, whether any financial provision is there in the project for maintenance in future		No

Table 20-32: Benefits and Challenges regarding the projects

Issues\ Projects		Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health
Number of farmers expected to be benefitted from the construction	2017-18	Entire livestock owners of the State of Punjab
	2018-19	Entire livestock owners of the State of Punjab
	2019-20	Entire livestock owners of the State of Punjab
Beneficiaries from the project other than the farmers		adjoining States who are interested to procure Vaccines and Antigens for their livestock.
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Production of Viral Vaccines for livestock of the State.
Project needs enhancement / improvement		Yes
Problems associated with the existing project		Financial
Opinion: the project will complete in stipulated time		Yes
Whether infrastructure is geo-tagged?		Yes

Table 20-33: Convergence with other projects

Issues\ Projects	Strengthening of Punjab Veterinary Vaccine Institute According to the GMP Norms to Produce Quality Vaccines for Improvement of Livestock Health
Whether any convergence with other schemes	No

Table 20-34: Details of implementing agency for community and services

Issues	Proposal for setting up of Fruits and Vegetables Pack House at Malerkotla, Sangrur
What is the type of collective activity is undertaken in the project?	Production Co-operative
What is nature of benefits expected from the project?	Better input supply, Lower cost of inputs, Higher production due to collectivization, Increased cooperation
Whether the project was mentioned in DAP?	No
Who proposed the need for the project?	Implementing Agency
At what level, was the project was proposed?	Block

Table 20-35: Fund flow

Issues	Proposal for setting up of Fruits and Vegetables Pack House at Malerkotla, Sangrur
Funds required for the project in 2016-17	Rs. 2.25 cr
Funds approved for the project in 2016-17	Rs. 1.75 cr
Funds released for the project in 2016-17	Rs. 1.00 cr
How many times the funding was released for this project in 2016-17?	1
What are the major problems related to release of the funding?	Delayed release
How many phases are needed?	1

Table 20-36: Benefits and Challenges

Issues	Proposal for setting up of Fruits and Vegetables Pack House at Malerkotla, Sangrur	
How many farmers are expected to get benefit from the activity?	1. 2017-18	Not Fixed
	2. 2018-19	
	3. 2019-20	
Apart from farmers, who are the other beneficiaries from the project? (Multiple options might apply)	Cooperatives, FPO's and others	

21 RAJASTHAN

Rajasthan is the largest state of India with the geographic area of 32.87 lakh square kilometres. Agriculture is the major sector in this state, with 62% of the population depends on agriculture and allied activities for their livelihood (Economic Review of Rajasthan, 2016-17⁴⁹). Total cropped area in Rajasthan is 26120 thousand hectare in 2013-14 (Agriculture Statistics at a glance 2016⁵⁰) while the same is 200859 thousand hectares for India. The average size of land-holding is 3.07 hectares in Rajasthan, while it varies from 0.49 hectares for marginal farmers (less than 1 hectare) to 17.45 hectares for large farmers (10 hectares and above). Agriculture contributes to 27.61% of GVA in the state in 2015-16 (27.72% in 2016-17 according to advanced estimate). Cereals and oilseed are major agricultural products in Rajasthan, along with pulses, sugar cane and cotton.

RKVY was started in 2007-08 in Rajasthan. From that year to 2014-15, the central government has provided 100% funding to the selected agro-based projects to improve the agriculture situation in Rajasthan. In 2015-16, the assistance has been reduced to 60:40% for Centre and state. Under this scheme, the central government has allocated Rs. 337.63 Crore for Rajasthan in 2015-16. Rajasthan proposed 127 projects amounting to Rs. 563.8 Crores in 2016-17. Research is the priority area in Rajasthan in all categories of projects. In aggregate, research (221crore) is given highest priority in project proposals both in terms of cost and in terms of a number of projects. Project with highest average cost is proposed for cooperatives and cooperation. Figure 21-1 shows allocation, release and expenditure in RKVY in Rajasthan over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Rajasthan. We have selected 10% of the projects i.e. 7 selected projects for Rajasthan and analysed the performance of

⁴⁹ Economic Review, 2016-17. Directorate of Economics & Statistics, Department of Planning, Rajasthan, Jaipur. Government of Rajasthan.

⁵⁰ Agriculture Statistics at a glance 2016; GOI, Ministry of Agriculture. Department of Agriculture & Co-operation. Directorate of Economics & Statistics

RKVY by collecting primary information. List of selected projects for Rajasthan is given below (Table 21-1). For first three projects, households are surveyed while for last four projects, implementing agencies were surveyed.

21.1 RESULTS FROM PRIMARY SURVEY

21.1.1 RESULTS FROM HOUSEHOLD PRIMARY SURVEY

The information is collected from the beneficiaries (80%) and non-beneficiaries (20%) about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Rajasthan, total 100 households are considered for the survey, among which 80 households are the beneficiaries of RKVY and 20 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, the majority of the beneficiary households (53% of beneficiary households) are marginal farmers, 26% are small farmers, 14% belong to medium category and 8% are large farmers (Table 21-2). In the non-beneficiary households, 60% are marginal, 30% are small, 5% are medium and 5% are large farmers.

21.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for kharif 2016-17, the average area of owned land is higher for all categories (not considering landless) among the beneficiary households as compared to non-beneficiary households. Some of the beneficiary households possess leased-in land also while this is not present among non-beneficiaries.

We have collected separate data for land-holding and irrigation for kharif and rabi season (Table 21-3A to 21-4B). For rabi 2016-17 also, the average area of owned land is higher for all

categories (not considering landless) among the beneficiary households as compared to non-beneficiary households.

The cultivation in kharif season is mainly done through tube well, especially owned electric tube well. Cultivated area is more for kharif season as compared to rabi season, for almost all categories of farmers, except small farmers. Irrigation in rabi season is also mainly done by owned tube well. But marginal and small farmers are also dependent on rented tube well for irrigation.

In our sample, a total of 80 households are beneficiaries and 20 are non-beneficiaries. A total number of the population covered is 604, among them, 479 people belong to beneficiary households and 125 people belong to non-beneficiary households (Table 21-5). Among them in beneficiary households, 27% of the population is below 15 age group, while 9 percent are in above 60 age group. Rest 64% population in beneficiary households is in working-age-group. In non-beneficiary households, 37% of the population is below 15 age-groups, while 6 percent are in above 60 age group. Rest 58% population in beneficiary households is in working-age-group. Taking both the groups into consideration, 62% population is in working-age group. On the education front, 30% of the population in both the groups is illiterate. 52% population in beneficiary households and 53% population in non-beneficiary households have attended school (class 1 to 12); while 9% population in beneficiary households and 5% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour or salaried employees. A major part of the population belongs to the category of 'student' or 'housewife' (Table 21-6).

21.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 44% of the beneficiary households have reported income from farming. For non-beneficiary households, 41% of households have reported farming as an occupation. Percentage of households, who have reported income from agriculture labour or casual labour as occupation, is high for non-beneficiary households as compared to beneficiary households. 21% of beneficiary households have reported income from dairy while for non-beneficiary households, 16% reported income from them. So it is evident from the data that for

farming and dairy, more households have reported income for beneficiary households as compared to the non-beneficiary households (Table 21-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 67447 in Rajasthan while the same for non-beneficiary households is Rs. 55755 in 2016-17 (Table 21-8). Average annual income for beneficiary households was Rs. 64165 in 2015-16 while it was Rs. 49918 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households is higher than non-beneficiary households. Major sources of income are farming, dairy, agriculture labour work, casual labour work apart from salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. For dairy, non-beneficiary households have to incur more cost. Average income from agriculture labour work, casual labour work is higher for non-beneficiary households, probably because of more dependence on these sources of income. It can be seen from Table 21-8 that beneficiary households have more income from farming and their cost in dairy is lower than non-beneficiary households in Rajasthan.

Table 21-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, the average income of beneficiary households is Rs. 98450 which is higher than non-beneficiaries (Rs. 84800); so is the average cost (Rs. 47928 and Rs. 40470 respectively). For dairy, average income and cost both are higher for beneficiary households.

In terms of percentage change in income (Table 21-10), average income has increased by 8% in farming for beneficiary households, while the same is 6% for non-beneficiary households. However, the average cost has also increased more for beneficiary households in farming than non-beneficiary households. There is a decrease in both income and cost in dairy for beneficiary households in Rajasthan.

21.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 21-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. It is evident from the table that the rent on leased-in land is the major factor of the annual expenditure if it is needed. Apart from that most of the

households have reported expenditure as rent on agriculture machinery (tractor, harvester, etc.). The component-wise analysis shows that rent on machinery (tractor, harvester, etc.) and expenditure on electricity for irrigation is higher for beneficiaries than non-beneficiaries. Expenditure on diesel and other fuels shows the opposite result.

Table 21-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in rent on machinery (tractor, harvester etc.) and expenditure on purchased water for irrigation for non-beneficiary households over this year while increase in rent on machinery (tractor, harvester etc.) is much lower for beneficiary households. Expenditure on purchased water for irrigation has even decreased. Expenditure on electricity for irrigation and diesel have increased by more percentage in beneficiary households than non-beneficiary households.

21.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Rajasthan, for beneficiary households, marginal and small farmers do not own large agricultural implements like tractor, trolley and leveller (Table 21-13A). More than 70% tractors and 90% trolley are owned by the medium and large farmers. Marginal and small farmers have more access to implements like weeder, manual/power sprayers, threshers, electrical pump sets, Sprinkler sets/Drip Irrigation Equipment and Fodder Choppers.

Comparison of the beneficiary and non-beneficiary households shows that marginal farmers from beneficiary households have more ownership of implements as compared to marginal non-beneficiary households in our sample. Ownership of assets is very much skewed in favour of medium and large scale farmers for non-beneficiary households.

Marginal and small farmers from both beneficiary and non-beneficiary households have a significant proportion of ownership of livestock (Table 21-14B). Medium and large farmers in both the categories have less livestock.

In our sample, 20% of the households for both beneficiary and non-beneficiary groups have kaccha houses (Table 21-15). It is also observed that majority of the households have pucca

houses for non-beneficiary households (55%), while only 40% beneficiaries have pucca houses. This may reflect the fact that RKVY beneficiaries mainly belonged to the poorer classes.

It is observed from our sample that beneficiary households have more access to information. 54% of beneficiary households possess TV while for non-beneficiaries, it is only 16%. In the case of mobile phones 95% of households have reported to possess it, while for non-beneficiaries, it is only 25%. Beneficiary households also have more bicycles, two-wheelers, four-wheelers and refrigerator. It can be said from the data on asset ownership that awareness regarding RKVY needs to be targeted better because the lack of information may be one reason for not opting for facilities provided by RKVY.

21.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated soybean, maize, wheat etc. in the majority of the cultivated area (Table 21-17). But for non-beneficiary households, the emphasis is on vegetables, wheat, groundnut etc. (Table 21-18). Average production of wheat is much higher for beneficiary households (33.8 qtls) as compared to non-beneficiary households (26.4 qtls). The same is true for paddy, bajra, maize and soybean. Price of the marketed quantity is more for the beneficiary household vis-à-vis non-beneficiary households for wheat, groundnut and soybean. For paddy, they are receiving the same price per unit. For bajra, maize, gram and vegetables non-beneficiary households are getting a better price.

A closer look reveals that while the production of paddy is 56% higher for beneficiaries, while the paid-out cost is same for both beneficiary and non-beneficiary households (Table 21-19). As a result, the profitability of paddy is 117% higher for paddy for beneficiaries. A similar pattern is seen for soybean and maize. The only difference for maize is lesser price received by the beneficiary households. For wheat and bajra, cultivated area, irrigated area as well as production and marketed quantity are comparatively higher for beneficiaries but the profitability is lower because of less price received by farmers. Non-beneficiary households cultivate more gram and groundnut as compared to beneficiary households, which is reflected in their data on cultivated area, irrigated area and production quantity.

Disaggregated analysis shows that there is a difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For the majority of the crops, marginal farmers are getting a lesser price. This is evident from the Table 21-20 which shows less price is obtained by the marginal farmers for crops like wheat, bajra, maize, gram (for beneficiary households); and gram, groundnut (for non-beneficiary households). In a comparison of the beneficiary and non-beneficiary marginal farmers, it can be said the average price received by the former is higher for groundnut and soyabean; while the opposite is the case for wheat, bajra, maize and gram. More efforts are needed for marketing and procurement of the production.

In 2015-16, it is seen that price received by marginal farmers is high for paddy, wheat, groundnut and soybean in beneficiary households as compared to non-beneficiary households (Table 21-21). For many crops, marginal farmers are receiving a lesser price as compared to farmers with larger land holdings.

21.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Rajasthan, it is seen that average income from livestock is much lower for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, 94% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries, the share is 99% (Table 21-22). Apart from that, some income comes from the production of ghee and animal sale.

The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries in 2016-17 while it was the opposite in 2015-16. Income from milk products and animal sale is higher for beneficiaries for both the years. It can be observed from our sample that income from milk has reduced in 2016-17 as compared to 2015-16 for beneficiaries while this increased for non-beneficiaries. The situation is opposite for animal sale. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for non-beneficiaries.

Regarding the awareness of RKVY, it is found that in our sample, non-beneficiary households mostly are not aware of RKVY. 100% of the non-beneficiaries have not heard about RKVY. 55% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 49% of the beneficiary households and 21% of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 62% of the beneficiary households and 16% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 21-24 that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Rajasthan, the majority of the beneficiary households had received information regarding RKVY from Zila Panchayat, Gram Panchayat, friends and neighbours and Agriculture/Horticulture Department. For non-beneficiary households, 88% of the households received information from friends and neighbours (Table 21-25).

21.1.1.7 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

RKVY has contributed in crop development in Rajasthan. It is found that crop seeds are made available through RKVY. Among the beneficiaries, 31% are marginal farmers, 43% are small farmers, 17% are medium and 9% are large farmers (Table 21-26).

In Rajasthan, only 11% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 21-27A). Among them, only 11% of the households are provided with soil health card. The majority of them belong to the medium category. The tests have been done in government institutes for all the cases (Table 21-27B).

Within our sample, 79% households had undergone training and demonstration (Table 21-28). 33% households found training beneficial and 43% of households want more training. RKVY programme has facilitated training and demonstration in Rajasthan for all categories of farmers. But only one-third (33%) of the farmers have found that the training/demonstration is useful.

Marginal and small farmers find the training useful also and want more of these types of initiatives.

21.1.1.8 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have faced problems in subsidy paid after purchase while initial payment remains the highest problem, restricted choice and delay in transfer as major constraints. Marginal farmers feel that the programme is biased in favour of large landowners; they are also facing the problem of lack of monitoring, lack of marketing support, restricted choice and information about RKVY programme details not being easily available and unavailability of contact details of department or lack of information regarding eligibility or criteria for availing the subsidy (Table 21-29A and Table 21-29B).

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in increasing production, improving market facilities, better price realization. However, it appears that RKVY has not been very successful in generating employment, building infrastructure and procurement (Table 21-30A and Table 21-30B).

21.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

Three projects have been selected under construction category and two projects under extension and training category (Table 21-31). Requirement for first three projects came from implementing agencies. Under the first project, cold-storage is being built. Under the second project, new structure is being built for veterinary institute. Under the third project, a demonstration unit is being built (Table 21-32). Table 21-33 shows the fund flow for the specified projects. For the first two projects, about 40% of the required funds was released in year 2016-17. For both the projects, approved funds were much less than the required amount. However, 100% of the required funds was released for the third project in 2016-17.

Table 21-34 highlights the existing physical capacity that the project aims to improve and achieve. It is found that for all the construction projects, existing requirement is fulfilled by the ongoing projects. Tenders were invited for the third project only.

It is noted from the respondent that the first project may benefit co-operatives and milk-producers, while the second project may benefit livestock owners and the third project could benefit farmers. Complementary/ Supplementary projects could be co-operatives and FPOs for the first project, rural roads, co-operatives, FPOs, and other veterinary institutes for the second project and training centres, and extension and training services for the third project. Respondents were facing the problem with geo-tagging the construction projects as they do not have proper training (Table 21-35). No convergence of these projects with other schemes was reported by the respondents (Table 21-36).

Apart from construction projects, two projects belonging to the category of extension and training were also surveyed - Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C) and Genetic Improvement and development of climate resilient watermelon & musk melon for Rajasthan. Under the first project, training was provided to provide information on climate resilient methods to farmers, whereas in the second project, machine related knowledge and training is imparted. Both the projects were proposed by the nodal agency at district level (Table 21-37).

For both the projects, 100% of the required funds are released in 2016-17 (Table 21-39). Delay in release of funds was observed to be the major problem.

The major modes of campaign of the first project were radio, newspaper, and farmer field schools (Table 21-41). For the second project, the major modes were personal visit, both print and audio-visual media, pamphlets, field demonstrations, and farmer field schools. Local traders and SHGs along with farmers may be benefited from the first project. The second project is expected to benefit extension workers as well as farmers. Complementary/ supplementary projects for the ongoing projects could be research labs, demonstration unit and rural roads for the first project and demonstration unit for the second project.

The above projects were found convergent other schemes. The first project was converged with GKMS project (Gramin Krishi Mausam Seva Project) sharing technical services and the second project with AICRP projects running at research station (Table 21-42).

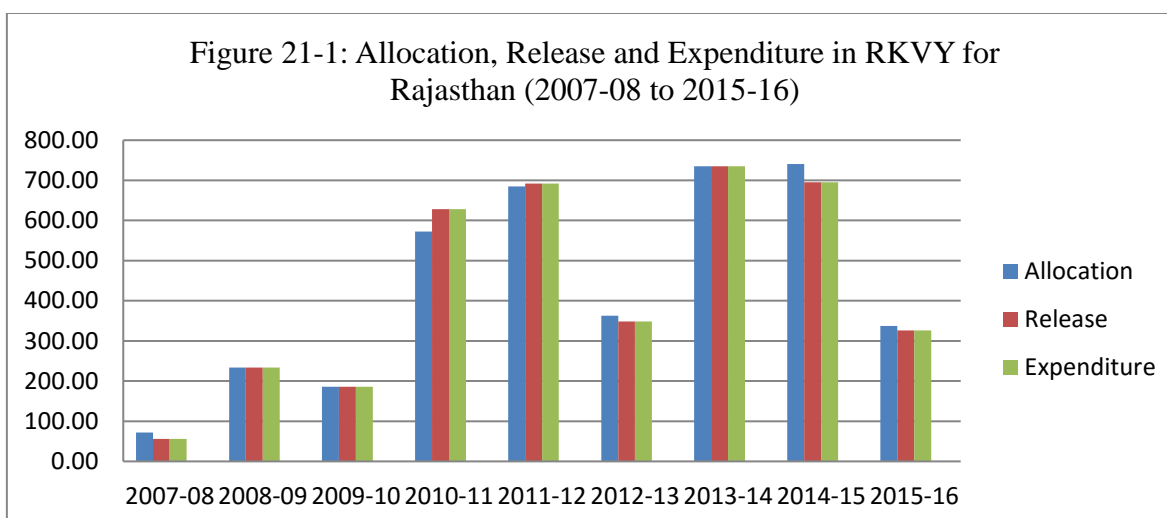
21.2 CONCLUSION

From 2007-08 to 2014-15, the central government has provided 100% funding to the selected agro-based projects to improve the agriculture situation in Rajasthan. In 2015-16, the assistance has been reduced to 60:40% for Centre and state. Under this scheme, the central government has allocated Rs. 337.63 Crore for Rajasthan in 2015-16. Rajasthan proposed 127 projects amounting to Rs. 563.8 Crores in 2016-17. Research is the priority area in Rajasthan in all categories of projects. In aggregate, research (221crore) is given highest priority in project proposals both in terms of cost and number of projects. Project with highest average cost is proposed for cooperatives and cooperation. In our sample, the majority of the beneficiary households (53% of beneficiary households) belonged to marginal farmers, 26% to small farmers, 14% to medium farmers and 8% to large farmer category. In the non-beneficiary households, 60% are marginal, 30% are small, 5% are medium and 5% are large farmers. Average annual income of the sample beneficiary households in aggregate is Rs. 67447 in Rajasthan while the same for non-beneficiary households is Rs. 55755 in 2016-17. Average annual income for beneficiary households was Rs. 64165 in 2015-16 while it was Rs. 49918 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households is higher than non-beneficiary households. Major sources of income are farming, dairy, agriculture labour work, casual labour work apart from salary. It is evident from the study that RKVY has intervened successfully in some aspects of agriculture in Rajasthan. In our sample, the beneficiaries got help from RKVY in seeds, training and demonstration and soil testing. According to the opinion of our respondents, the program is successful in increasing production, improving market facilities, better price realization. But awareness regarding the programme is still lagging behind. The programme needs adequate extension support and some publicity so that farmers are aware of the benefits and can gain from it. The programme should also invest in generating employment, building infrastructure and procurement in agriculture in Rajasthan. In our study, it is found that beneficiary households have faced problem in subsidy paid after purchase while initial payment remains the highest problem, restricted choice and

delay in transfer as major constraints. Marginal farmers felt that the programme is biased towards large landowners; they are also facing the problems like lack of monitoring, lack of marketing support, restricted choice and unavailability of information about RKVY programme details, contact details of department and information regarding eligibility or criteria for availing the subsidy.

Apart from household survey, three construction projects are surveyed for implementing agency: (1) Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy, (2) Strengthening of Veterinary Institutions and (3) To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner. Implementing agencies are Jaipur Zila Dugdh Utpadak Sahakari Sangh Ltd, Department of Animal Husbandry, Jaipur, Extension Education and SK NAU Jobner Jaipur respectively. The survey found that the first project would benefit cooperatives and milk-producers, while the second project would benefit livestock owners and the third project would benefit farmers. Complementary/Supplementary projects for the ongoing projects will be developing cooperatives, FPOs for the first project; Rural roads, developing cooperatives, FPOs, others (Veterinary Institutions) for the second project and training centres, extension/training services for the third project. Lack of training is a major problem for geo-tagging the projects. There is no convergence of these projects with other projects. Apart from construction projects, in this study, two projects were surveyed for extension/training programme for implementing agency in Rajasthan: Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C) and Genetic Improvement and development of climate resilient Watermelon & musk melon for Rajasthan. Implementing agencies for the project were Swami Keshwanand Rajasthan Agricultural University, Bikaner and Rajasthan Agriculture Research Institute, Durgapura Jaipur. Under the project “crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C)”, training is provided for climate information. In the project “Genetic Improvement and development of climate resilient Watermelon & musk melon”, machine related knowledge and training is imparted. For both the projects, requirement of the project was proposed by the nodal agency at district level. The survey found that for the first extension project, modes of campaign were radio, newspaper and farmer field schools. For the

second project, the modes were personal visit, TV, radio, Mobile Phone, Newspaper, pamphlet, field demonstration, farmer field schools etc. The first project would benefit local traders, local Government, SHGs apart from farmers. On the other hand, the second project is expected to benefit Extension work of Agriculture Dept. as well as farmers. Complementary/Supplementary projects for the ongoing projects will be Research Labs, demonstration unit, rural roads for the first project and demonstration unit for the second project. The survey found that there is convergence of the projects with other projects. The first project is converged with GKMS project (Gramin Krishi Mausam Seva Project) sharing technical services and the second project with AICRP projects running at research station.



Source: <http://rkvy.nic.in/>

Table 21-1: List of selected project name and code

Project Code	Project Name
01	Enhancing the Productivity of Crops under saline soil condition
02	Promoting backward poultry for nutritional and livelihood security in Rajasthan
03	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner
04	Genetic Improvement and development of climate resilient Watermelon & musk melon for Rajasthan
05	Crop weather relationship, impact assessment and awareness of negating weather calamities in arid region
06	Strengthening of Veterinary Institutions
07	Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy

Table 21-2: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	0(0)	0(0)	0(0)
Marginal	42(53)	12(60)	54(54)
Small	21(26)	6(30)	27(27)
Medium	11(14)	1(5)	12(12)
Large	6(8)	1(5)	7(7)
Total	80(100)	20(100)	100(100)

Table 21-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acres)			0.00	1.54	4.10	6.64	18.83
Leased-in Land/share cropping (acres)			0.00	0.00	0.00	9.00	0.00
Leased-out Land/share cropping (acres)			0.00	0.00	0.00	0.00	0.00
Operated area (owned+LI-LO) (acres)			0.00	1.54	4.10	7.45	18.83
Irrigated Area by canal (%)				12	14	0	0
Irrigated Area by tube well (%)	Rented	Electric		13	24	24	25
		Diesel		8	14	16	20
	Owned	Electric		19	25	39	34
		Diesel		16	22	21	20
Irrigated Area by Tanks (%)				16	0	0	0
Irrigated Area by Wells (%)				16	0	0	0
Irrigated Area by others (%)				0	0	0	0
Total				100	100	100	100

Table 21-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acres)			0.00	1.40	3.50	8.00	12.00
Leased-in Land/share cropping (acres)			0.00	0.00	0.00	0.00	0.00
Leased-out Land/share cropping (acres)			0.00	0.00	0.00	0.00	0.00
Operated area (owned+LI-LO) (acres)			0.00	1.40	3.50	8.00	12.00
Irrigated Area by canal (%)				0	0	0	0
Irrigated Area by tube well (%)	Rented	Electric		27	24	0	0
		Diesel		24	14	0	0
	Owned	Electric		48	34	75	67
		Diesel		0	28	25	33
Irrigated Area by Tanks (%)				0	0	0	0
Irrigated Area by Wells (%)				0	0	0	0
Irrigated Area by others (%)				0	0	0	0
Total				100	100	100	100

Table 21-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landle ss	Margin al	Sma ll	Mediu m	Larg e
Owned land				1.54	4.10	6.55	18.83
Leased-in Land/share cropping				0.00	0.00	9.00	0.00
Leased-out Land/share cropping				0.00	0.00	0.00	0.00
Total operated area (owned+LI-LO)				1.54	4.10	7.36	18.83
Irrigated Area by canal (%)				14	0	0	0
Irrigated Area by tube well (%)	Rente d	Electr ic		16	28	24	25
		Diesel		10	16	16	20
	Owne d	Electr ic		23	31	40	34
		Diesel		19	26	20	21
Irrigated Area by Tanks (%)				0	0	0	0
Irrigated Area by Wells (%)				19	0	0	0
Irrigated Area by others (%)				0	0	0	0
Total				100	100	100	100

Table 21-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-beneficiary				
			Landles s	Margina l	Smal l	Mediu m	Larg e
Owned land				1.40	3.50	8.00	12.00
Leased-in Land/share cropping				0.00	0.00	0.00	0.00
Leased-out Land/share cropping				0.00	0.00	0.00	0.00
Total operated area (owned+LI-LO)				1.40	3.50	8.00	12.00
Irrigated Area by canal (%)				0	0	0	0
Irrigated Area by tube well (%)	Rente d	Electri c		27	24	0	0
		Diesel		24	14	0	0
	Owne d	Electri c		48	34	75	67
		Diesel		0	28	25	33
Irrigated Area by Tanks				0	0	0	0
Irrigated Area by Wells				0	0	0	0
Irrigated Area by others				0	0	0	0
Total				100	100	100	100

Table 21-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Total Sample Population		479	125	604
%f dependent members (codes 15,16,17)		5	6	5
Age group	<=15	27	37	29
	>15 to 25	22	24	23
	>25 to 40	26	22	25
	>40 to 59	15	11	14
	>59	9	6	8
	All Groups	100	100	100
Education	Illiterate	30	30	30
	Class 1 to 5	20	18	20
	Above Class 5 to 8	12	14	12
	Above Class 8 to 12	20	21	20
	Above Class 12	9	5	8
	Other diploma	0	0	0
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	9	12	9
	All Groups	100	100	100

Table 21-6: Occupational distribution of members of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Occupation	1 cultivation	16	15	16
	2 agricultural labour	1	1	1
	3 dairy	1	1	1
	4 casual labour	4	5	4
	5 self-employment	1	1	1
	6 salaried employment	4	2	3
	7 forestry	0	0	0
	8 Horticulture	0	0	0
	9 Floriculture	0	0	0
	10 Sericulture	0	0	0
	11 Fishing	0	0	0
	12 Aquaculture	0	0	0
	13 Poultry	0	0	0
	14 beekeeping	0	0	0
	15 Student	32	26	31
	16 housewife	25	26	25
	17 non-working	15	24	17
	888 others (no separate income)	2	0	2
	All Groups	100	100	100

Table 21-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary (%)	Non-Beneficiary (%)
Farming	44	41
Horticulture	0	0
Floriculture	0	0
Dairy	21	16
Poultry	0	2
Sericulture	0	0
Agricultural Labour	11	16
Casual Labour	16	20
Forestry	0	0
Fishing	0	0
Beekeeping	0	0
Salary	6	4
Other	1	0
Total	100	100

Table 21-8: Average income and cost of beneficiaries and non-beneficiaries (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)	Average Income (Rs.)	Average Cost (Rs.)	Average Profit (Rs.)
Farming	106525	52206	54319	90150	43335	46815
Horticulture						
Floriculture						
Dairy	24789	14414	10376	37375	16688	20688
Poultry				2000		
Sericulture						
Agricultural Labour	16650	300	16350	18500		
Casual Labour	24448	500	23948	23400		
Forestry						
Fishing						
Beekeeping						
Salary	142545			123000		
Other	33000	26000	7000		4000	

Table 21-9: Average income and cost of beneficiaries and non-beneficiaries (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	98450	47928	50523	84800	40470	44330
Horticulture						
Floriculture						
Dairy	25292	14536	10756	24280	14188	10093
Poultry				2000		
Sericulture						
Agricultural Labour	19000	300	18700	17500		
Casual Labour	23033	500	22533	21900		
Forestry						
Fishing						
Beekeeping						
Salary	142100			123000		
Other	56500	21800	34700		4000	

Table 21-10: Change in Average income and cost of beneficiaries and non-beneficiaries (2016-17)

	Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit
Farming	8	9	8
Horticulture			
Floriculture			
Dairy	-2	-1	-4
Poultry			
Sericulture			
Agricultural Labour	-12		
Casual Labour	6	0	6
Forestry			
Fishing			
Beekeeping			
Salary	0		
Other	-42	19	-80

Table 21-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
<i>items</i>	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.	Average Expend. Agri.
Rent on leased-in land	70000		70000	
Total rent on machinery (tractor, harvester etc.)	6953	5959	6413	5176
Expenditure on purchased water for irrigation	4833	2985	5148	2723
Expenditure on electricity for irrigation	14390	13238	13049	12675
Expenditure on diesel	23519	38667	21343	35667
Expenditure on other fuels for agriculture	2953	3625	2759	3625
Any other	28074	24510	26536	23155
<i>Total expenditure on agriculture</i>	51928	43335	48730	40470

Table 21-12: % increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	
Total rent on machinery (tractor, harvester, etc.)	8	15
Expenditure on purchased water for irrigation	-6	10
Expenditure on electricity for irrigation	10	4
Expenditure on diesel	10	8
Expenditure on other fuels for agriculture	7	0
Any other	6	6
<i>Total expenditure on agriculture</i>	7	7

Project-wise data for average expenditure on agriculture by households is provided below.
Table 21-12A: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 4)

	Average Expend. Agri. (Rs.)			
<i>items</i>	2016-17		2015-16	
Rent on leased-in land				
Total rent on machinery (tractor, harvester etc.)	5380	2830	5040	2650
Expenditure on purchased water for irrigation	2695.7	1383.3	2673.9	1266.7
Expenditure on electricity for irrigation	8000	2400	6000	2400
Expenditure on diesel	15738		16025	
Expenditure on other fuels for agriculture	1100	500	1280	500
Any other	16848	6220	16028	6240
<i>Total expenditure on agriculture</i>				

Table 21-12B: Average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 and 2015-16 (Project Code: 5)

	Average Expend. Agri. (Rs.)			
<i>items</i>	2016-17		2015-16	
Rent on leased-in land	70000		70000	
Total rent on machinery (tractor, harvester, etc.)	9050	10429	8243.3	8785.7
Expenditure on purchased water for irrigation	7068.2	4357.1	7857.1	3971.4
Expenditure on electricity for irrigation	15278	14786	14028	14143
Expenditure on diesel	28308	38667	24615	35667
Expenditure on other fuels for agriculture	3725	4666.7	3375	4666.7
Any other	39300	42800	37045	40070
<i>Total expenditure on agriculture</i>	172729		165164	

Table 21-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

Assets	Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Tractor	0.00	0.00	26.67	40.00	33.33	100.00
Trolley	0.00	0.00	8.33	50.00	41.67	100.00
Weeder	0.00	14.29	35.71	28.57	21.43	100.00
Manual/power sprayers	0.00	19.35	45.16	25.81	9.68	100.00
Threshers	0.00	19.23	42.31	26.92	11.54	100.00
Drier						
Electrical pump sets	0.00	21.05	42.11	23.68	13.16	100.00
Diesel pump sets	0.00	15.79	21.05	36.84	26.32	100.00
Sprinkler sets/drip irrigation equipment	0.00	11.54	38.46	30.77	19.23	100.00
Cane crusher/agro-processing equipment						
Leveller	0.00	0.00	0.00	33.33	66.67	100.00
Fodder choppers	0.00	19.44	47.22	19.44	13.89	100.00

Table 21-13B: Asset ownership by non-beneficiary households (2016-17)

Assets (% of number of equipment)	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Tractor	0.00	0.00	50.00	25.00	25.00	100.00
Trolley	0.00	0.00	33.33	33.33	33.33	100.00
Weeder	0.00	0.00	66.67	0.00	33.33	100.00
Manual/power sprayers	0.00	0.00	66.67	16.67	16.67	100.00
Threshers	0.00	0.00	66.67	16.67	16.67	100.00
Electrical Pump sets	0.00	12.50	62.50	12.50	12.50	100.00
Diesel Pump sets	0.00	0.00	33.33	33.33	33.33	100.00
Sprinkler sets/Drip Irrigation Equipment	0.00	0.00	50.00	25.00	25.00	100.00
Leveller	0.00	0.00	0.00	0.00	100.00	100.00
Fodder choppers	0.00	11.11	66.67	11.11	11.11	100.00

Table 21-14A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0.0	34.1	31.7	19.5	14.6	100.0
Buffalo	0.0	35.9	35.9	17.9	10.3	100.0
Young Stock	0.0	40.7	32.2	16.9	10.2	100.0
Male Draught	0.0	0.0	100.0	0.0	0.0	100.0
Goat	0.0	78.6	10.7	3.6	7.1	100.0

Table 21-14B: Livestock ownership by non-beneficiary households (2016-17) (% of number of equipment)

<i>Livestock</i>	Non-Beneficiary					Total
	Landless	Marginal	Small	Medium	Large	
Cow	0.0	50.0	33.3	8.3	8.3	100.0
Buffalo	0.0	28.6	71.4	0.0	0.0	100.0
Young Stock	0.0	46.7	40.0	6.7	6.7	100.0
Male Draught	0.0	100.0	0.0	0.0	0.0	100.0
Goat	0.0	100.0	0.0	0.0	0.0	100.0
Poultry	0.0	100.0	0.0	0.0	0.0	100.0

Table 21-15: Percentage distribution of households according to type of house (2016-17)

<i>Type</i>	Beneficiary	Non-beneficiary	Total
Kachha	20	20	20
Pucca	40	55	43
Semi-Pucca	40	25	37
Others	0	0	0
Total	100	100	100

Table 21-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes (%)	No (%)	Total (%)	Yes (%)	No (%)	Total (%)
TV	54	46	100	16	9	25
Telephone	1	99	100	0	25	25
Mobile phone	95	5	100	25	0	25
Cycle	33	68	100	6	19	25
Two wheeler	51	49	100	13	13	25
Four wheeler	5	95	100	0	25	25
Refrigerator	16	84	100	5	20	25

Table 21-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (qtls)	Marketed Quantity (quintals)	Price received (per quintal)	Total paid-out costs (Rs)	Profitability
paddy	2.6	2.6	20.5	13.7	1300.0	12250.0	5516.7
wheat	3.2	2.8	33.8	24.2	1545.0	19726.3	17585.5
jowar	1.3	0.3	5.5	5.0	1250.0	3000.0	3250.0
bajra	2.8	2.8	19.7	17.0	1186.5	12635.1	7503.1
maize	3.0	2.8	16.6	14.3	1254.2	7250.0	10621.9
gram	1.6	1.3	8.8	7.4	5030.0	7800.0	29422.0
other pulses	1.0	1.0	2.0	2.0	4200.0	5000.0	3400.0
groundnut	1.6	1.6	12.4	11.6	3550.0	17200.0	23980.0
soyabean	3.3	2.3	13.6	12.3	2892.2	13100.0	22570.7
mustard	1.7	1.7	9.1	7.9	3416.7	11388.9	15564.8
cotton	1.0	0.0	1.5	1.5	4590.0	2000.0	4885.0
vegetables	3.1	3.1	279.4	274.4	453.3	43750.0	80629.7
spices 1	0.8	0.8	2.0	0.0	0.0	8500.0	-8500.0
others	2.1	2.1	13.9	13.6	3141.3	15625.0	27174.5

Table 21-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

	Non-beneficiary						
Crop	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	1.5	0.5	9.0	3.5	1300.0	5500.0	-950.0
wheat	2.1	1.8	26.4	18.2	2223.7	15357.9	25019.5
bajra	2.4	2.4	18.3	15.3	1316.7	11777.8	8411.1
maize	1.3	1.0	8.0	6.7	1433.3	3466.7	6088.9
gram	2.0	2.0	12.0	10.5	5350.0	18000.0	38175.0
groundnut	2.4	2.4	19.0	17.8	3500.0	27800.0	34500.0
soyabean	1.3	0.7	5.2	4.8	2880.0	4700.0	9124.0
vegetables total	5.0	5.0	499.6	477.9	548.3	72200.0	189852.0
others	2.8	2.8	17.0	17.0	3075.0	23500.0	28775.0

Table 21-19: Difference in average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops among beneficiary and non-beneficiary households (2016-17)

	% Difference between Beneficiary and Non- Beneficiary						
Crop	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	41.9	80.6	56.1	74.4	0.0	55.1	117.2
wheat	34.6	37.2	21.9	24.8	-43.9	22.1	-42.3
bajra	17.0	14.6	7.1	9.7	-11.0	6.8	-12.1
maize	55.6	64.7	51.8	53.2	-14.3	52.2	42.7
gram	-29.0	-60.0	-36.4	-41.9	-6.4	-130.8	-29.7
groundnut	-54.8	-54.8	-53.2	-53.4	1.4	-61.6	-43.9
soyabean	60.3	69.3	61.7	61.1	0.4	64.1	59.6
vegetables total	-60.0	-60.0	-78.8	-74.2	-21.0	-65.0	-135.5

Table 21-20: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Land less	Margin al	Small	Mediu m	Large	La nd less	Margi nal	Small	Mediu m	Large
paddy		1300.0	1300.0		1300.0		1300.0			
wheat		1445.2	1669.0	1654.5	1608.3		2581.8	1716.7	1800.0	1750.0
jowar		1200.0		1300.0						
bajra		988.9	1250.0	1250.0	1250.0		1350.0	1290.0	1300.0	1400.0
maize		1361.1		1400.0	1400.0		1433.3			
gram		4866.7	5200.0	4600.0	5150.0		5200.0		5500.0	
other pulses				4200.0						
groundnut		4000.0	3325.0	3666.7	3600.0		3500.0	3550.0	3600.0	3300.0
sunflower										
soybean		2908.4	2843.3	2950.0	2800.0		2880.0			
mustard		3525.0	3266.7	3466.7	3500.0					
cotton				4590.0						
others		3090.9	3169.4	3162.5	3100			3050	3200	3000

Table 21-21: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1262.5	1250.0		1250.0		1225.0			
wheat		1408.8	1591.0	1581.8	1533.3		1211.4	1616.7	1700.0	1600.0
jowar		1100.0								
bajra		1183.3	1162.5	1161.1	1166.7		1250.0	1180.0	1200.0	1200.0
maize		1288.9	1400.0	1300.0	1300.0		1356.7			
gram		4633.3	5000.0	4700.0	4950.0		5000.0		550.0	
other pulses				4200.0						
groundnut		3800.0	3175.0	3366.7	3500.0		3300.0	3400.0	3500.0	3200.0
sunflower										
soyabean		2915.8	2833.3	3000.0	2850.0		2820.0			
mustard		3350.0	3200.0	3300.0	3300.0					
cotton				4400.0						
others		1900	2877.8	3050	2950			2900	3000	2800

Table 21-22: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average Annual Income (Rs)	% of Total Income	Average Annual income(Rs)
Milk		94	32444.4	99	42428.6
Milk Products	Ghee	0	1000.0	0	0.0
Animal sale		6	3866.7	1	2000.0
Others		0	0.0	0	0.0
TOTAL		100	25270.3	100	37625.0

Table 21-23: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	-9984	2856	-0.02	43.22
Milk Products	1000	1000		
Animal sale	1867	776	6.19	-15.25
TOTAL	-12355	-218	0.24	51.23

Table 21-24: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary		
	Yes	No	overall	Yes	No	overall
Have you heard about RKVY?	92	8	100	0	100	100
Did you receive any benefits from RKVY in the year 2016-17?	100	0	100	0	100	100
Did you receive any benefits from RKVY in the last five years excluding this year?	55	45	100	0	100	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	49	51	100	21	79	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	62	38	100	16	84	100

Table 21-25: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	29	88	34
Newspaper	1	13	2
Agriculture/Horticulture Department	23	0	20
SAU	0	0	0
KVK	5	0	5
Input suppliers	1	0	1
TV/Radio	0	0	0
Agri. Exhibitions	4	0	3
ZP/GP	38	0	34
Other sources	0	0	0
Total	100	100	100

Table 21-26: Percentage distribution of farmers according to the interventions made under crop development (From Kharif, Rabi & Summer 2016-17)

		Crop 1	Crop 2	Fertilizer s	Micro nutrient s	Bio- fertilizer s and bio- control agents	Pesticide s	Other s
Number of Beneficiari es	Landless	0						
	Marginal	31						
	Small	43						
	Medium	17						
	Large	9						
	Total	100						
Number of Non- Beneficiari es	Landless	0	0	0	0	0	0	0
	Marginal	66	54	54	54	54	54	54
	Small	18	27	27	27	27	27	27
	Medium	9	12	12	12	12	12	12
	Large	6	7	7	7	7	7	7
	Total	100	100	100	100	100	100	100

Table 21-27A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether the soil is tested in your area?			Soil health card issued? (among those who had soil tested)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless						
Marginal	2	98	100	2	0	2
Small	19	81	100	19	0	19
Medium	36	64	100	36	0	36
Large	0	100	100	0	0	0
Total	11	89	100	11	0	11
Non-beneficiary						
Landless						
Marginal	0	100	100	0	0	0
Small	0	100	100	0	0	0
Medium	0	100	100	0	0	0
Large	0	100	100	0	0	0
Total	0	100	100	0	0	0

Table 21-27B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Soil health card issued? (Overall)			Place of soil test			
	Yes	No	Total	Government Institute	Private organization	Do not know	Total
Beneficiary							
Landless							
Marginal	2	0	2	100	0	0	100
Small	19	0	19	100	0	0	100
Medium	36	0	36				0
Large	0	0	0				0
Total	11	0	11				0

Table 21-28: Information regarding training and demonstration under RKVY (% of households) (2016-17)

	No. of households undergone training	No. of households undergone Demonstration	No. of households found training beneficial	No. of households want more training?
Landless				
Marginal	78	78	26	39
Small	78	78	56	59
Medium	83	83	33	42
Large	86	86	0	14
Total	79	79	33	43

Table 21-29A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		81	48	55	67	68
Contact details of the department which pay subsidy not available		74	48	64	50	64
Eligibility or criteria for availing the subsidy not known		83	38	73	67	69
Procedure for the subsidy very tedious		26	43	45	50	35
No of documents required for availing subsidy are too many		21	43	27	50	30
Subsidy paid after purchase while initial payment remains the highest problem		83	71	73	100	80
Delay in transfer		71	67	73	83	71
Prescribed machinery/asset not easily available in the market		50	43	55	50	49
Institutional financing facility not available		62	24	55	50	50
Capacity building/technical advice not provided		50	38	45	83	49
Long time gap between the purchase and receiving the subsidy amount		71	38	36	67	58
Biased towards large land owners		69	48	36	50	58
Poor quality of materials/machinery are supplied		38	38	64	33	41
Implementing agencies are located far away		71	48	64	67	64
Incidence of bribery		50	38	55	67	49
Lack of monitoring		83	62	82	67	76
Complementary inputs not available		17	43	82	33	34
Restricted choice		86	57	100	83	80
Lack of marketing support		86	38	73	67	70
Any other (specify)		0	0	0	0	0

Table 21-29B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		92	83	100	100	90
Contact details of the department which pay subsidy not available		83	83	100	100	85
Eligibility or criteria for availing the subsidy not known		58	67	100	100	65
Procedure for the subsidy very tedious		17	33	100	100	30
No of documents required for availing subsidy are too many		17	50	100	100	35
Subsidy paid after purchase while initial payment remains the highest problem		92	100	100	100	95
Delay in transfer		75	67	100	100	75
Prescribed machinery/asset not easily available in the market		25	50	0	0	30
Institutional financing facility not available		67	100	100	100	80
Capacity building/technical advice not provided		50	67	100	100	60
Long time gap between the purchase and receiving the subsidy amount		50	67	100	100	60
Biased towards large land owners		75	33	100	0	60
Poor quality of materials/machinery are supplied		25	50	0	100	35
Implementing agencies are located far away		83	83	100	0	80
Incidence of bribery		17	83	100	100	45
Lack of monitoring		83	83	100	100	85
Complementary inputs not available		92	67	0	100	80
Restricted choice		92	50	0	100	75
Lack of marketing support		92	83	100	100	90
Any other (specify)		0	0	0	0	0

Table 21-30A: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landless										
Marginal	35	43	35	43	43	35	41	37	26	52
Small	7	70	63	15	48	30	63	15	37	41
Medium	8	83	42	50	58	33	50	42	25	67
Large	14	57	57	14	14	57	57	14	0	71
Total	23	56	45	34	44	35	49	30	27	52

Table 21-30B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory	Satisfactory	Non-satisfactory
Landless								
Marginal	17	61	17	61	30	48	31	46
Small	11	67	7	67	11	67	37	41
Medium	0	92	17	75	8	83	42	50
Large	14	57	29	43	0	71	43	29
Total	13	66	15	63	20	59	35	44

Table 21-31: Project Details

Project Code	Project Name	Implementing agency
1	Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy	Jaipur Zila Dugdh Utpadak Sahakari Sangh Ltd
2	Strengthening of Veterinary Institutions	Department of Animal Husbandry, Jaipur
3	Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C)	Swami Keshwanand Rajasthan Agricultural University, Bikaner
4	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner	Extension Education, SK NAU Jobner Jaipur
5	Genetic Improvement and development of Climate resilient Watermelon & musk melon for Rajasthan	Rajasthan Argriculture Research Inst, Durgapura Jaipur

Table 21-32: General Information regarding the implementing agency

Issues\ Projects	Jaipur ZilaDugdhUtpada kSahakari Sangh Ltd	Department of Animal Husbandry, Jaipur	Extension Education, SK NAU Jobner Jaipur
Type of construction	Cold-storage	Cold-storage	Others
New construction/Improvement of an older construction	New	New	New
Awareness about DAP	Yes	Yes	Yes
Included in DAP	Am not aware	Am not aware	No
Project proposed by	Implementing agency	Implementing agency	Implementing agency
Level at which the project was proposed	District	District	Gram Panchayat level

Table 21-33: Fund Flow in the project

Issues\ Projects	Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy	Strengthening of Veterinary Institutions	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner
Funds required for the project in 2016-17	82.8089 cr	530.8 Lakh (100%)	75.7 lakhs (100%)
Funds approved for the project in 2016-17	41.4045 cr	200 Lakh (37.67%)	75.7 lakhs (100%)
Funds released for the project in 2016-17	32.69 cr	200 Lakh (37.67%)	75.7 lakhs (100%)
Number of times funding released for the project in 2016-17	4	1	1
Major problems in the release of funds	Reduced amount	No response	Delayed Release

Note: Values in brackets are the percentage out of funds required

Table 21-34: Physical Capacity of the projects

Issues\ Projects		Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy	Strengthening of Veterinary Institutions	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner
Required physical capacity of the selected work. (in numbers)		10 Lakh Lit PD	94Lakh	5
Existing physical capacity excluding the current project.		5 Lakh LPD	94 Lakh	5
Capacity of current project. (numbers)		10 Lakh LPD	94 Lakh	5
Number of phases in the project		3	3	2
In case of multiple phases, ways for management of funds		Provisions for fund in phased manner in RKVY	Provisions for fund in phased manner in RKVY	Provisions for fund in phased manner in RKVY
Fund manage ment across the phases	Phase 1	No response	94	3
	Phase 2	No response	112	2
	Phase 3	No response	44	
	Phase 4	No response	-	-

Table 21-35: Tendering & Maintenance regarding the project

Issues\ Projects	Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy	Strengthening of Veterinary Institutions	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner
Whether tender was called for execution of the work	No	No	Yes
e-tender issued			Yes
Opinion: e-tendering increases efficiency of tendering	Yes	Yes	Yes
Opinion: e-tendering increases transparency	Yes	Yes	Yes
Opinion: e-tendering has increased number and quality of responses from vendors	Yes		Yes
Number of days given to respond to tenders		Construction work has been allotted to Rajasthan State Ag. Marketing Board	60
Number of vendors responded to the tenders			1
Method for evaluating the tenders			Financial Criteria Only
Any re-bidding made			No
Selected vendor a Government / Private Organization	Co-operative	Government	Private
Whether selected vendor worked with the agency before	Yes	Yes	
Agency responsible for the maintenance of the constructed project in future years	Your own agency	Your own agency	Your own agency
If same agency, whether any financial provision is there in the project for maintenance in future	Yes	No	No

Table 21-36: Benefits and Challenges regarding the projects

Issues\ Projects		Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy	Strengthening of Veterinary Institutions	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner
Number of farmers expected to be benefitted from the construction	2017-18	No response	Livestock owners of entire state	250
	2018-19	No response	No response	300
	2019-20	No response	No response	No response
Beneficiaries from the project other than the farmers		Cooperatives, Others(Milk Producer)	No response	No response
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Developing Co-operatives, FPO's	Rural roads, Developing Co-operatives, FPO's, others (Vet Institutions)	Training centres, Extension /training Services
Project needs enhancement / improvement		No	Yes	No
Problems associated with the existing project			Physical Achievement	
Opinion: the project will complete in stipulated time		Yes	Yes	Yes
Reasons for delay in project				
Whether infrastructure is geo-tagged?		Yes	No	No
Reasons for not being geo-tagged			others (Training completed , infrastructure required to geo tagging)	Training has nt been provided

Table 21-37: Convergence with other projects

Issues\ Projects	Strengthening of Infrastructure to enhance milk handling capacity to Jaipur Dairy	Strengthening of Veterinary Institutions	To establish demonstration unit of sirohi goat for raising income of small marginal and landless labour under different KVYs and SKNAU, Jobner
Whether any convergence with other schemes	No	No	No

Table 21-38: General Information regarding the implementing agency for extension/ training projects

Issues\ Projects	Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C)	Genetic Improvement and development of Climate resilient Watermelon & musk melon
Type of knowledge and training imparted	Soil health	Machinery related
Whether project mentioned in DAP	Am not aware	Yes
Project was proposed by	Nodal agency	Implementing agency
Level at which the project was proposed.	District	District

Table 21-39: Fund flow in the projects

Issues\ Projects	Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C)	Genetic Improvement and development of Climate resilient Watermelon & musk melon
Funds required for the project in 2016-17	32.7 lakhs (100%)	7.35 lakhs (100%)
Funds approved for the project in 2016-17	32.7 lakhs (100%)	7.35 lakhs (100%)
Funds released for the project in 2016-17	32.7 lakhs (100%)	7.35 lakhs (100%)
Number of times were the funding released for the project in 2016-17	1	1
Major problems in the release of funds.	Delayed release	
Number of phases required	1	5
In case of multiple phases, ways for management of funds.		Provisions for fund in phased manner in RKVY-- 1

Table 21-40: Physical capacity of the projects

Issues\ Projects		Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C)	Genetic Improvement and development of Climate resilient Watermelon & musk melon
If there are multiple phases, how the project is designed to fulfill the physical target?	Phase 1	No response	No response
	Phase 2	No response	No response
	Phase 3	No response	No response
	Phase 4	No response	No response
Required capacity in the selected work for the agency in terms of physical infrastructure.		Physical infrastructure is sufficient to cater the need.	
Required capacity in the selected work for the agency in terms of human resources		To run the project, two SRFs are needed which are already appointed.	
Present capacity in the selected work for the agency in terms of physical infrastructure		Sufficient physical infrastructure and facilities are available.	All facilities available at RARI
Present capacity in the selected work for the agency in terms of human resources.		Sufficient human resource is available	

Table 21-41: Benefits and Challenges regarding the projects

Issues\ Projects		Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C)	Genetic Improvement and development of Climate resilient Watermelon & musk melon
Mode of campaign for the project (multiple choices may apply)		Radio	Personal Visit, TV, Radio, Mobile
Number of farmers are expected to get benefit from the project?	2017-18	700	All in Distt
	2018-19	1500	All in Distt
	2019-20	2000	All in Distt
Beneficiaries from the project other than the farmers		Local traders, Local Government, SHG's	Others(Extn worker of Ag deptt)
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Soil Testing, Research Labs, Trainings centres	Research labs

Table 21-42: Convergence with other projects

Issues\ Projects		Crop weather relationship, impact assessment and awareness for negating weather calamities in arid region (Zone 1C)	Genetic Improvement and development of Climate resilient Watermelon & musk melon
Whether any convergence with other schemes		Yes	No
Name of the schemes converged		GKMS project (Gramin Krishi Mausam Seva), AICRP projects running at research station	
Ways by which convergence achieved		technical services	Financial supplement
Opinion: Whether the project will meet the target of beneficiaries		Yes	No

22 SIKKIM

Sikkim is in eastern part of India, situated at the north of West Bengal. Sikkim, in the west, is bound by the north-south spur of the Great Himalayan Range which includes the world's third highest peak, Khangchendzonga and down to its south is Singalila ridge. In the north it is bound by Dongkia range and also partly includes the Tibetan Plateau. In the east it is bound by the Chola range. Total geographical area of the state is 7096 square km. Net sown area in Sikkim is 77 thousand hectare in 2015-16⁵¹. The average size of land-holding is 1.42 hectares in Sikkim in 2010-11, which varies from 0.37 hectares for marginal farmers to 15.77 hectares for large farmers. Primary sector contributes to 8.67 percent of GSVA in the state in 2015-16 (current prices). Principal crops are rice, wheat, maize, finger millet, barley, buckwheat, pulses, oilseeds, vegetables, fruits etc.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Sikkim. Under RKVY scheme, Central Government has allocated Rs. 14.71 Crore for Sikkim, for which Rs. 14.40 Crore funds has been released and expenditure of Rs. 7.43 crore has been incurred in Sikkim during 2016-17 till 5th February, 2018. According to MIS report, Sikkim proposed only one project amounting to Rs. 2 Crores in 2016-17. Up to the date the data was accessed, the only project that is proposed under RKVY is on animal husbandry. The sub-sector for which it is proposed is Breed Development. Figure 22-1 shows allocation, release and expenditure in RKVY in Sikkim over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Sikkim. We have selected one project for Sikkim and analysed the performance of RKVY by collecting primary information. List of selected project for Sikkim is given below (Table 22-1).

⁵¹ Agriculture Statistics, Government of India

22.1 RESULTS FROM PRIMARY SURVEY

22.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Sikkim, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, the majority of the beneficiary households (43% of beneficiary households) are marginal farmers, 38% are small farmers, 3% are medium farmers and 3% are large farmers. In the non-beneficiary households, 50% are marginal, 20% are small farmers, 10% are medium farmers and 10% are large farmers (Table 22-2).

22.1.1.1 LAND-HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample in Sikkim, for Kharif 2016-17, the average area of operated land is same among the beneficiary households as compared to non-beneficiary households. Households depend on canals for irrigation in Kharif season (Table 22-3A & Table 22-3B).

We have collected separate data for land-holding and irrigation for Kharif and Rabi season. For Rabi 2016-17 also, the average area of operated land is same for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. But for medium farmers, operated area is higher for beneficiary households (Table 22-4A & Table 22-4B).

A total number of the population covered is 264, among them, 221 people belong to beneficiary households and 43 people belong to non-beneficiary households (Table 22-5). Among them in beneficiary households, 22% of the population is below 15 age group, while 11 percent are in

above 60 age group. In non-beneficiary households, 19% of the population is below 15 age groups, while 7 percent are in above 60 age group. Taking both the groups into consideration, 68% population is in working age group. On the education front, 14% of the population in beneficiary group and 5% of non-beneficiary group is illiterate. 73% population in beneficiary households and 93% population in non-beneficiary households have attended school (class 1 to 12); while 10% population in beneficiary households and 2% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour, agricultural labour or salaried employees or are engaged in dairy (Table 22-6).

22.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 23% of the beneficiary households have reported income from farming. For non-beneficiary households, 28% of households have reported farming as an occupation. 35% of beneficiary households and 28% of non-beneficiary households have reported income from dairy. 4% of households from beneficiary households and 11% of non-beneficiary households have reported income from casual labour (Table 22-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 117822 in Sikkim while the same for non-beneficiary households is Rs. 102778 in 2016-17 (Table 22-8). Average annual income for beneficiary households was Rs. 114950 in 2015-16 while it was Rs. 63214 for non-beneficiary households in the same year. Average income for beneficiary households in Sikkim are higher than non-beneficiary households and both have increased from 2015-16 to 2016-17. Major sources of income are farming, dairy, poultry and fishing apart from salary and casual labour. For farming, the average income of non-beneficiary households is higher than beneficiaries; so is the average (Table 22-8).

Table 22-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 143600 which is higher than non-beneficiaries (Rs. 75000); so is the average cost (Rs. 32922 and Rs. 27711 respectively).

In terms of percentage change in income (Table 22-10), average income has increased by 12% in farming for beneficiary and decreased by 1% for non-beneficiary households. However, the average cost has increased more for beneficiary households in farming (7%) than non-beneficiary households (3%).

22.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 22-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that rent on machinery (tractor, harvester etc.) is higher for beneficiaries than non-beneficiaries.

Table 22-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in rent on machinery, and the increase is higher for beneficiary households as compared to non-beneficiary households.

22.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Sikkim, for beneficiary households, beneficiary farmers own agricultural implements like Manual/ power sprayers, Electric pump sets, Sprinkler sets / Drip Irrigation Equipment, Fodder Choppers and bullock cart. Medium farmers have more access to implements like electric pump sets (Table 22-13A). Marginal & Small farmers have equipments like Manual/ power sprayers, Sprinkler sets / Drip Irrigation Equipment and fodder chopper. Non-beneficiary households own equipments like Manual/ power sprayers, Electric & Diesel pump sets, Sprinkler sets / Drip Irrigation Equipment, Fodder Choppers (Table 22-13B).

Marginal and small farmers from beneficiary households have a significant proportion of livestock (Table 22-14B). They own cows, young stock, male draught, pig, poultry and goat.

In our sample, 48% of the households for beneficiary and 50% of non-beneficiary groups have pucca houses (Table 22-15). 13% households in beneficiary category and 10% in non-beneficiary category have kachha houses.

It is observed from our sample that 88% of beneficiary households possess TV while for non-beneficiaries, it is 60% (Table 22-16). In the case of mobile phones, 100% of beneficiary and 80% of non-beneficiary households have reported to possess it. 43% of beneficiary households have refrigerator, while for non-beneficiary households, the proportion is 20%.

22.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that both the beneficiary and non-beneficiary households cultivated paddy, maize, pulses, mustard, spices, fruits and vegetables in the majority of the cultivated area (Table 22-17 and Table 22-18). Average production of paddy is higher for beneficiary households (30 qtls) as compared to non-beneficiary households (25 qtls). Price of the marketed quantity for paddy and maize is higher for the beneficiary household vis-à-vis non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 22-19). Unlike other states, marginal farmers are getting lower price than small farmers for paddy, and maize both for beneficiary and no-beneficiary households (Table 22-19).

In 2015-16 also, it is seen that price received by marginal farmers is lower than small farmers for paddy and maize for both the categories of the households.

22.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Sikkim, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, around 92% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 100% (Table 22-21).

The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries as compared to beneficiaries both in 2016-17 and 2015-16. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for non-beneficiaries (Table 22-22).

22.1.1.7 AWARENESS REGARDING RKVY

Regarding the awareness of RKVY, it is found that in our sample, 100% of the beneficiaries and 10% of the non-beneficiaries have heard about RKVY. 13% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households 90% are deprived of any benefits throughout these years. 18% of the beneficiary households and 40% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 80% of the beneficiary households and 70% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17 (Table 22-21).

In our sample in Sikkim, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, Agriculture / Horticulture Department, SAU and Zila / Gram Panchayet (Table 22-22). For non-beneficiary households, 100% of the households received information from SAU.

22.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Animal husbandry development is considered as an important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of intervention made under animal husbandry development in Sikkim through RKVY (Table 22-23). In the project “Distribution of 400 nos. of Milch cow”, farmers got financial assistance in purchasing cows (Table 22-23).

In Sikkim, 45% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil (Table 22-24). Among them, 55% of the households are provided with soil health card. The tests have been done in government institutes for 100% of the cases (Table 22-25).

Within our sample in Sikkim, 18% of beneficiary households had undergone training and 17% had undergone demonstration (Table 22-26). 86% of the households found training beneficial and want more training.

It is also found in our study that 100% of the beneficiary and 100% of the non-beneficiary households have mobile phones; among them 100% of beneficiary and 90% of non-beneficiary households receive text messages. All of the beneficiary households and 20% of the non-beneficiary households have reported to receive agriculture-related text messages (Table 22-27).

22.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned their major problem as Restricted Choice, Lack of marketing support, Capacity building/technical advice not provided, Long time gap between the purchase and receiving the subsidy amount and Delay in transfer.

For non-beneficiary households, major problems are: Information about RKVY programme details not easily available, Contact details of the department which pay subsidy not available, No of documents required for availing subsidy are too many, Subsidy paid after purchase while initial payment, Capacity building/technical advice not provided and Long time gap between the purchase and receiving the subsidy amount (Table 22-28A & Table 22-28B).

According to the feedback from beneficiary respondents about the success of the RKVY, it is successful in employment generation and providing financial assistance. But the performance is not satisfactory for improving market facilities, better price realization, building infrastructure, post-harvest storage and procurement in the state (Table 22-29A & 28-29B).

22.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Sikkim. Under RKVY scheme, Central Government has allocated Rs. 14.71 Crore for Sikkim, for which Rs. 14.40 Crore funds has been released and expenditure of Rs. 7.43 crore has been incurred in Sikkim during 2016-17 till 5th February, 2018. According to MIS report, Sikkim proposed only one project amounting

to Rs. 2 Crores in 2016-17. Up to the date the data was accessed, the only project that is proposed under RKVY is on animal husbandry. The sub-sector for which it is proposed is Breed Development.

This study analyses performance of RKVY for the year 2016-17 in Sikkim. We have selected one project for Sikkim and analysed the performance of RKVY by collecting primary information. In our sample in Sikkim, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. In our sample, the majority of the beneficiary households (43% of beneficiary households) are marginal farmers, 38% are small farmers, 3% are medium farmers and 3% are large farmers. In the non-beneficiary households, 50% are marginal, 20% are small farmers, 10% are medium farmers and 10% are large farmers. In our sample in Sikkim, for Kharif 2016-17, the average area of operated land is same among the beneficiary households as compared to non-beneficiary households. Households depend on canals for irrigation in Kharif season.

Total number of the population covered is 264, among them, 221 people belong to beneficiary households and 43 people belong to non-beneficiary households. Among them in beneficiary households, 22% of the population is below 15 age group, while 11 percent are in above 60 age group. In non-beneficiary households, 19% of the population is below 15 age groups, while 7 percent are in above 60 age group. Taking both the groups into consideration, 68% population is in working age group. On the education front, 14% of the population in beneficiary group and 5% of non-beneficiary group is illiterate. 73% population in beneficiary households and 93% population in non-beneficiary households have attended school (class 1 to 12); while 10% population in beneficiary households and 2% population in non-beneficiary households have studied beyond school.

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In our sample, 48% of the households for beneficiary and 50% of non-beneficiary groups have pucca house. 13% households in beneficiary category and 10% in non-beneficiary category have kachha houses. It is observed from our sample that 88% of beneficiary households possess TV while for non-beneficiaries, it is 60%. In the case of mobile phones, 100% of beneficiary and 80% of non-beneficiary households have reported to possess it. 43% of beneficiary households have refrigerator, while for non-beneficiary households, the proportion is 20%.

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seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, around 92% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 100%.

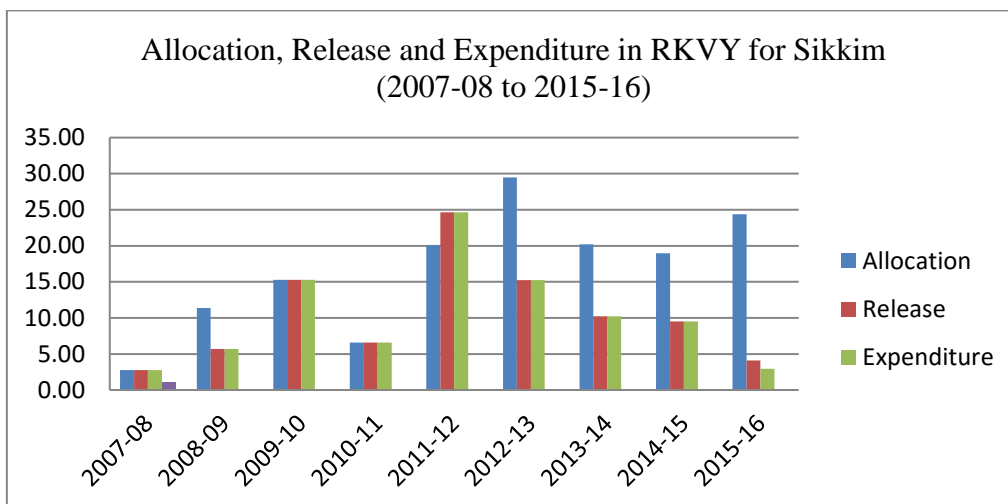
Regarding the awareness of RKVY, it is found that in our sample, 100% of the beneficiaries and 10% of the non-beneficiaries have heard about RKVY. 13% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households 90% are deprived of any benefits throughout these years. 18% of the beneficiary households and 40% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 80% of the beneficiary households and 70% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. In our sample in Sikkim, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, Agriculture / Horticulture Department, SAU and Zila / Gram Panchayet. For non-beneficiary households, 100% of the households received information from SAU.

Animal husbandry development is considered as an important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of intervention made under animal husbandry development in Sikkim through RKVY. In the project “Distribution of 400 nos. of Milch cow”, farmers got financial assistance in purchasing cows. In Sikkim, 45% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil. Among them, 55% of the households are provided with soil health card. The tests have been done in government institutes for 100% of the cases. Within our sample in Sikkim, 18% of beneficiary households had undergone training and 17% had undergone demonstration. 86% of the households found training beneficial and want more training.

In our study, it is found that beneficiary households have mentioned their major problem as Restricted Choice, Lack of marketing support, Capacity building/technical advice not provided, Long time gap between the purchase and receiving the subsidy amount and Delay in transfer.

For non-beneficiary households, major problems are: Information about RKVY programme details not easily available, Contact details of the department which pay subsidy not available, No of documents required for availing subsidy are too many, Subsidy paid after purchase while initial payment, Capacity building/technical advice not provided and Long time gap between the purchase and receiving the subsidy amount. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in employment generation and providing financial assistance. But the performance is not satisfactory for improving market facilities, better price realization, building infrastructure, post-harvest storage and procurement in the state.

Figure 10-1: Allocation, Release and Expenditure in RKVY for Sikkim (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 22-1: List of selected project name and code

Project Code	Project Name
1	Distribution of 400 nos. of Milch cow.

Table 22-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	6(15)	1(10)	7(14)
Marginal	17(43)	5(50)	22(44)
Small	15(38)	2(20)	17(34)
Medium	1(3)	1(10)	2(4)
Large	1(3)	1(10)	2(4)
Total	40(100)	10(100)	50(100)

Table 22-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			-	1.2	4	8	15
Leased-in Land / share cropping (acre)			-	-	-	-	-
Leased-out Land / share cropping (acre)			-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)			-	1.2	4	8	15
Irrigated Area by canal (%)			-	100	100	100	100
Irrigated Area by tube-well (%)	Rented	Electric	-	-	0	0	0
		Diesel	-	-	0	0	0
	Owned	Electric	-	-	0	0	0
		Diesel	-	-	0	0	0
Irrigated Area by Tanks (%)			-	-	0	0	0
Irrigated Area by Wells (%)			-	-	0	0	0
Irrigated Area by others (%)			-	-	0	0	0

Table 22-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			-	1.2	4	8	15
Leased-in Land / share cropping (acre)			-	-	-	-	-
Leased-out Land / share cropping (acre)			-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)			-	1.2	4	8	15
Irrigated Area by canal (%)			-	100	100	100	100
Irrigated Area by tube-well (%)	Rented	Electric	-	0	0	0	0
		Diesel	-	0	0	0	0
	Owned	Electric	-	0	0	0	0
		Diesel	-	0	0	0	0
Irrigated Area by Tanks (%)			-	0	0	0	0
Irrigated Area by Wells (%)			-	0	0	0	0
Irrigated Area by others (%)			-	0	0	0	0

Table 22-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			-	1.2	4	8	15
Leased-in Land / share cropping (acre)			-	-	-	-	-
Leased-out Land / share cropping (acre)			-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)			-	1.2	4	8	15
Irrigated Area by canal (%)			-	100	100	100	100
Irrigated Area by tube-well (%)	Rente d	Electric	-	0	0	0	0
		Diesel	-	0	0	0	0
	Owne d	Electric	-	0	0	0	0
		Diesel	-	0	0	0	0
Irrigated Area by Tanks (%)			-	0	0	0	0
Irrigated Area by Wells (%)			-	0	0	0	0
Irrigated Area by others (%)			-	0	0	0	0

Table 22-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			-	1.2	4	6	-
Leased-in Land / share cropping (acre)			-	-	-	-	-
Leased-out Land / share cropping (acre)			-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)			-	1.2	4	6	-
Irrigated Area by canal (%)			-	100	100	33.3	-
Irrigated Area by tube-well (%)	Rente d	Electri c	-	0	0	0.0	-
		Diesel	-	0	0	0.0	-
	Owne d	Electri c	-	0	0	33.3	-
		Diesel	-	0	0	33.3	-
Irrigated Area by Tanks (%)			-	0	0	0	-
Irrigated Area by Wells (%)			-	0	0	0	-
Irrigated Area by others (%)			-	0	0	0	-

Table 22-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	22	19	22
	>15 to 25	22	28	23
	>25 to 40	29	26	29
	>40 to 59	16	21	17
	>59	11	7	10
	All Groups	100	100	100
Education	Illiterate	14	5	12
	Class 1 to 5	20	30	22
	Above Class 5 to 8	20	12	19
	Above Class 8 to 12	31	51	34
	Above Class 12	10	2	9
	Other diploma	3	0	2
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	2	0	2
	All Groups	100	100	100

Table 22-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	10	16	11
agricultural labour	1	0	1
dairy	12	12	12
casual labour	3	9	4
self-employment (specify)	4	5	4
salaried employment	10	7	10
Student	29	28	29
housewife	12	16	13
non-working	11	5	10
others (no saperate income)	5	2	5
All Groups	100	100	100

Table 22-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	23	28
Dairy	35	28
Poultry	5	0
Agricultural Labour	2	0
Casual Labour	4	11
Fishing	1	0
Salary	12	11
Other	19	22
Total	100	100

Table 22-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	161000	55708	80780	74000	22375	38200
Dairy	69000	27158	42538	90000	41000	49000
Poultry	6000	2760	3240			
Agricultural Labour	60000		60000			
Casual Labour	70000	1000	69750	50000		50000
Fishing	150000	60000	90000			
Salary	238077	10615	227462	60000	2500	57500
Other	122352	33211	92305	202500	50500	152000
Total	117822	34348	83474	102778	31105	71673

Table 22-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	143600	52111	68560	75000	21688	40300
Dairy	51950	22143	28700	63000	29200	33800
Poultry	8500	3400	5100			
Agricultural Labour	62500		62500			
Casual Labour	63750	1000	63500	42500		42500
Fishing	150000	60000	90000			
Salary	218846	8846	210000	55000	2500	52500
Other		32974			50500	
Total	114950	32922	82028	63214	27711	35504

Table 22-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	12	7	18	-1	3	-5
Dairy	33	23	48	43	40	45
Poultry	-29	-19	-36			
Agricultural Labour	-4		-4			
Casual Labour	10	0	10	18		18
Fishing	0	0	0			
Salary	9	20	8	9	0	10
Other		1			0	

Table 22-11: Average annual expenditure for agriculture (Rs.)

items	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	0	0	0
Total rent on machinery (tractor, harvester etc)	10325	4450	9020	4270
Expenditure on purchased water for irrigation	0	0	0	0
Expenditure on electricity for irrigation	0	200	0	200
Expenditure on diesel	0	400	0	300
Expenditure on other fuels for agriculture	125	0	125	0
Any other	39663	12950	37850	13120
Total expenditure on agriculture	50113	18000	46995	17890

Table 22-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
<i>Rent on leased-in land</i>		
<i>Total rent on machinery (tractor, harvester etc)</i>	14	4
<i>Expenditure on purchased water for irrigation</i>		
<i>Expenditure on electricity for irrigation</i>		0
<i>Expenditure on diesel</i>		33
<i>Expenditure on other fuels for agriculture</i>	0	
<i>Any other</i>	5	-1
<i>Total expenditure on agriculture</i>	7	1

Table 22-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Manual / Power Sprayers	0	30	40	10	20
Electrical Pump sets	0	0	0	100	0
Sprinkler sets / Drip Irrigation Equipment	0	13	88	0	0
Fodder Choppers	0	32	59	5	5
Bullock cart	0	0	100	0	0

Table 22-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Manual / Power Sprayers	0	0	50	50	0
Electrical Pump sets	0	0	0	100	0
Diesel Pump sets	0	0	0	100	0
Sprinkler sets / Drip Irrigation Equipment	0	50	50	0	0
Fodder Choppers	20	60	20	0	0

Table 22-14A: Livestock ownership by beneficiary households (2016-17)(% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	10	45	38	3	5
Young Stock	10	45	38	3	5
Male Draught	0	25	75	0	0
Goat	0	50	50	0	0
Pig	0	100	0	0	0
Poultry	0	67	33	0	0

Table 22-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	13	10	12
Pucca	48	50	48
Semi-Pucca	40	40	40
Others	0	0	0
Total	100	100	100

Table 22-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	88	13	100	60	40	100
Telephone	0	100	100	0	100	100
Mobile phone	100	0	100	80	20	100
Cycle	13	88	100	20	80	100
Two wheeler	30	70	100	20	80	100
Four-wheeler	10	90	100	0	100	100
Refrigerator	43	58	100	20	80	100

Table 22-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivate d Area (in Acres)	Irrigate d Area (in Acres)	Productio n (Qtls)	Markete d Quantity (Qtls)	Price receive d (per qtl)	Total paid- out costs (Rs.)	Profitabilit y
paddy	3	3	30	22	1340	1989 7	9905
maize	3	3	14	10	798	7107	476
other pulses	1	1	2	1	1600	5000	-4200
mustard	3	3	6	4	6000	1000 0	14000
fruit	2	2	83	83	1750	4500 0	99375
vegetable	4	4	539	526	404	9081 3	121409
spices	2	2	109	109	6850	5500 0	691650

Table 22-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	3	3	25	20	994	14188	5191
maize	3	3	15	12	759	7429	1349
vegetable	1	1	70	68	300	10000	10400

Table 22-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Land less	Marg inal	Smal l	Medi um	Larg e	Land less	Marg inal	Smal l	Medi um	Larg e
paddy		285	2573	1600	1550		630	1600	1600	
maize		282	1315		1300		325	1305	1400	
other pulses		1600								
mustard			6000							

Table 22-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landl ess	Margin al	Sma ll	Mediu m	Larg e	Landle ss	Margin al	Sma ll	Mediu m	Larg e
paddy		364	2451	1600	1550		268	1539	1500	1500
maize		292	1314	1400	1300		279		1252	1200
other pulses		1600					2000			
soyabe an								5500		
mustar d			6000							

Table 22-21: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average income	% of Total Income	Average income
Milk		92	63256	100	90000
Milk Products	Ghee	4	18800	0	
	Curd	1	20000	0	
Eggs		1	3800	0	
Dung cake		0	5000	0	
Animal sale		1	6333	0	
Others		1	40000	0	
TOTAL		100	46259	100	90000

Table 22-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	-30	-14	17	43
Eggs			-25	
Dung cake			25	
Animal sale			0	
Others			100	
TOTAL	-49	-45	32	43

Table 22-21: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	10	90	100	82	18	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	13	88	100	10	90	100	12	88	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	18	83	100	40	60	100	22	78	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	80	20	100	70	30	100	78	22	100

Table 22-22: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	23	0	22
News Paper	5	0	5
Agriculture / Horticulture Department	23	0	22
SAU	15	100	17
KVK	3	0	2
Input Suppliers	5	0	5
TV/ Radio	0	0	0
Agri. Exhibitions	3	0	2
ZP/GP	25	0	24
Other sources	0	0	0
Total	100	100	100

Table 22-23: Details of Interventions made under animal husbandry development (in 2016-17) in Sikkim for beneficiaries

		Cow
No of beneficiary of RKVY		40
Actual cost (Rs.)		40000
Nature of subsidy		
	Bank loan at lower rate of interest	
	Bank loan at longer repayment period	
	Any other	100
Subsidy amount from RKVY (Rs.)		40000
If subsidy not received, number of households who have said who would buy this animal		48
If subsidy not received, number of households who have said who would not buy this animal		53

Table 22-24: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Whether soil is tested in your area?		soil health card issued? (who tested soil)	
	Yes	No	Yes	No
Beneficiary				
Landless	0.0	100.0		
Marginal	38.9	61.1	14.3	85.7
Small	53.3	46.7	25.0	75.0
Medium	100.0	0.0	100.0	0.0
Large	100.0	0.0	50.0	50.0
Total	45.0	55.0	27.8	72.2
Non-beneficiary				
Landless	0.0	100.0		
Marginal	20.0	80.0	0.0	100.0
Small	50.0	50.0	0.0	100.0
Medium	100.0	0.0	100.0	0.0
Large				
Total	30.0	70.0	33.3	66.7

Table 22-25: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium	100	0	0
Large			
Total	100	0	0

Table 22-26: Information regarding training and demonstration under RKVY (% of households) (2016-17)

			Type of training					
	Number of Beneficiaries	% of beneficiary households undergone training	Demonstration	Field Visit	Kris hi Mela	Others	% of households found training beneficial	% of households who want more training
Landless	4	0						0
Marginal	18	6	0	100	0	0	100	100
Small	15	20	0	67	33	0	67	67
Medium	1	100	100	0	0	0	100	100
Large	2	100	0	100	0	0	100	100
Total	40	18	17	83	0	0	86	86

Table 22-27: Usage of mobile phone in receiving agriculture-related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	100	100	0	0	0
Marginal	100	72	6	6	0
Small	100	93	67	60	0
Medium	100	100	100	100	0
Large	100	100	100	100	0
Total	100	85	35	33	0
Non-Beneficiary					
Landless	100	100	0	0	0
Marginal	100	80	20	20	0
Small	100	100	0	0	0
Medium	100	100	100	100	0
Large					
Total	100	90	20	20	0

Table 22-28A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	17	18	0	0	0	10
Contact details of the department which pay subsidy not available	17	6	7	0	0	8
Eligibility or criteria for availing the subsidy not known	0	6	7	0	0	5
Procedure for the subsidy very tedious	0	6	13	0	0	8
No of documents required for availing subsidy are too many	33	35	7	0	0	23
Subsidy paid after purchase while initial payment remains the highest problem	0	0	0	0	0	0
Delay in transfer	33	71	40	100	100	55
Prescribed machinery/asset not easily available in the market	0	35	20	100	0	25
Institutional financing facility not available	33	59	53	0	100	53
Capacity building/technical advice not provided	50	76	47	0	200	63
Long time gap between the purchase and receiving the subsidy amount	0	0	0	0	0	0
Biased towards large land owners	0	12	0	0	0	5
Poor quality of materials/machinery are supplied	0	0	0	0	0	0
Implementing agencies are located far away	50	29	13	0	0	25
Incidence of bribery	33	29	13	0	0	23
Lack of monitoring	0	29	7	0	0	15
Complementary inputs not available	17	29	13	100	100	25
Restricted Choice	50	76	67	100	200	73
Lack of marketing support	50	76	67	100	200	73
Any other (specify)	0	0	0	0	0	0

Table 22-28B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY not easily available	-	100	100	100		100
Contact details of the department which pay subsidy not available	-	100	100	100		100
Eligibility or criteria for availing the subsidy not known	-	100	100	100		90
Procedure for the subsidy very tedious	-	100	100	100		90
No of documents required for availing subsidy are too many	-	100	100	100		100
Subsidy paid after purchase while initial payment remains the highest problem	-	100	100	100		100
Delay in transfer	-	100	100	100		90
Prescribed machinery/asset not easily available in the market	-	40	100	0		40
Institutional financing facility not available	-	40	100	0		50
Capacity building/technical advice not provided	-	100	100	100		100
Long time gap between the purchase and receiving the subsidy amount	-	100	100	100		100
Biased towards large land owners	-	100	50	100		90
Poor quality of materials/machinery are supplied	-	100	100	100		90
Implementing agencies are located far away	-	100	100	100		90
Incidence of bribery	-	100	50	100		90
Lack of monitoring	-	100	50	100		80
Complementary inputs not available	-	80	50	100		60
Restricted Choice	-	40	100	0		50
Lack of marketing support	-	80	100	0		70
Any other	-	0	0	0		0

Table 22-29A: Opinion of beneficiary households about RKVY (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	57.1	0.0	0.0	57.1	0.0	57.1	0.0	57.1	57.1	0.0
Marginal	82	0	14	68	5	77	9	73	77	5
Small	88	0	35	53	0	88	6	82	88	0
Medium	50	0	50	50	0	100	0	50	50	0
Large	100	0	0	50	0	50	0	100	100	0
Total	80	0	20	60	2	78	6	74	78	2

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 22- 29B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	14.3	42.9	14.3	42.9	0.0	57.1	0	0
Marginal	18.2	63.6	18.2	63.6	4.5	77.3	0	0
Small	11.8	76.5	35.3	52.9	17.6	70.6	0	0
Medium	0	50	0	50	0	50	0	0
Large	0	100	50	50	0	100	0	0
Total	14	66	24	56	8	72	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

23 TAMIL NADU

Tamil Nadu is in the southern part of India, with a total geographical area of 130.33 lakh hectare (GoTN52). Tamil Nadu has historically been an agricultural state. Net cropped area is 48.33 thousand hectares in the state, which is 37% of the total geographical area. The average size of land holdings in this state is 0.80 hectares which vary from 0.37 hectares for marginal farmers (less than 1 hectare) to 20.59 large farmers (10 hectares and above) (Department of Economics and Statistics, Tamil Nadu). Gross cropped area of 60.74 lakh hectare, among which net irrigated area, is 28.33 lakh hectare. Small and Marginal holders account for 92% of the total holdings operating 61% of the area occupied. Agriculture in Tamil Nadu was estimated to have contributed around 10.22% in the total GSVA in 2015-2016. (Agriculture statistics at a glance 2016). The principal source of livelihood for more than 40% of the population is agriculture and allied activities in the state. The principal crops include rice, jowar, ragi, bajra, maize and pulses.

RKVY was started in 2007-08 in Tamil Nadu. The state was allotted with Rs. 153.6 Crore under that scheme in 2007-08. In the initial years, the priority areas were micro/minor irrigation, crops, mechanization, animal husbandry and organic farming/biofertilizer. The Central government, like other major states, provides financial assistance in agriculture projects in 60:40% for Centre and state. Under this scheme, the central government has allocated Rs. 259.94 Crore for Tamil Nadu in 2015-16. The state agriculture is facing the challenges in terms of increasing vulnerability of growing population, climate variability, declining production resources, rising input costs, labour shortage and volatile market prices. The policy initiatives aim to provide support to the farmers in terms of introduction of crop-specific agricultural practices, improving productivity, commercial and dynamic farming system, increasing mechanization of agriculture, use of infrastructure and technology to empower farmers, promotion of capacity building and supply of better quality inputs. RKVY has taken up various

⁵² Policy Note 2017-18, Agriculture Department, Government of Tamil Nadu. http://cms.tn.gov.in/sites/default/files/documents/agri_e_pn_2017_18.pdf

projects in this state to cope up with these problems. Tamil Nadu proposed 59 projects amounting to Rs. 524.7 Crores in 2016-17. 59 projects are pointed out which needs funds from RKVY in 2016-17, among which crop development (201crore) is given highest priority in terms of cost, while in terms of the number of projects, fisheries are given priority. Project with highest average cost is proposed for agriculture mechanization. Allocation, release and expenditure were highest in 2012-13 for Tamil Nadu, after which year it has reduced substantially. Figure 10-1 shows allocation, release and expenditure in RKVY in Tamil Nadu over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Tamil Nadu by collecting primary information from households dependent on agriculture and allied activities covering 11 projects under RKVY (Table 23-1).

23.1 RESULTS FROM PRIMARY SURVEY

23.1.1 RESULTS FROM HOUSEHOLD SURVEY

In this study, both beneficiary and non-beneficiary households are surveyed to see the impact of RKVY interventions on farm households. Total 450 sample households were surveyed in Tamil Nadu, out of which 360 households belong to the beneficiary group. Information was collected on households' characteristics, income and expenditure, interventions of RKVY and their benefits, and problems related to implementation of RKVY and suggestions.

23.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

The households are categorized based on their operated area of land. Among them, the households who do not have any operated area of land are called landless farmers. Households, whose operated area is less than 2.5 acre, are called marginal farmers. Households, whose operated area is between 2.5 to 5 acres, are called small farmers. Households, whose operated area is 5 to 10 acres, are called medium farmers. Households, whose operated area is more than 10 acres, are called large farmers. Majority of farmers in our sample are marginal farmers, as is reflected from Table 23-2.

In our sample, 60% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 31% of them are small farmers (operated area 2.5 to 5 acres), 7% is medium

(operated area 5 to 10 acres) and 2% in large farmers (operated area more than 10 acres). In the non-beneficiary households, 67% are marginal, 30% are small, 2% are medium and 1% are large farmers.

In our sample in Tamil Nadu, for kharif 2016-17, the average area of owned land is higher for the marginal category of land-holding among the beneficiary households as compared to non-beneficiary households. For rest of the categories, non-beneficiary has more amount of land. Marginal, small and medium farmers from both beneficiary and non-beneficiary households operate in the leased-in land. For marginal and small farmers, non-beneficiary households operate in more leased-in land. In kharif season, there are many sources of irrigation: canal, tube wells (electric and diesel), tank, wells etc. All of them are used in kharif season both by beneficiary and non-beneficiary households. But in rabi season, majority of the farmers depend on tube wells for irrigation. This may be reason for that almost all of the households own tube wells. The details of the land-holding and irrigation facilities are described below.

23.1.1.2 DEMOGRAPHY OF SAMPLE HOUSEHOLDS

In our sample in Tamil Nadu, a total of 360 households are beneficiaries and 90 are non-beneficiaries. Total number of the population covered is 1661, among them, 1340 people belong to beneficiary households and 321 people belong to non-beneficiary households. Among them in beneficiary households, 16% of the population is below 15 age group, while 12% are in above 60 age group. Rest 72% population in beneficiary households is in working-age-group. In non-beneficiary households also, 16% of the population is below 15 age group, while 12% are in above 60 age group. Taking both the groups into consideration, 72% population is in working-age. In the education front, 2% of the population is illiterate. Around 77% population in both beneficiary and non-beneficiary households have attended school (class 1 to 12); while 18% population in beneficiary households and 19% population in non-beneficiary households have studied beyond class 12. Major occupation is cultivation, while some members of the households are engaged in horticulture. (Table 23-4)

23.1.1.3 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

Average earning of the beneficiary households is higher as compared to non-beneficiaries for households. Same is true for households who are engaged in cultivation (Table 23-5). This proves the positive outcome from the intervention of RKVY programme for agrarian households in Tamil Nadu. Beneficiary households also earn a significant amount from horticulture.

In the sample of our study, 38% of the beneficiary households have reported income from farming. For non-beneficiary households, 39% of households have reported farming as an occupation. 8% of beneficiary households have reported income from horticulture while for non-beneficiary households, 9% reported income from them (Table 23-6).

Average annual income of the sample beneficiary households in aggregate is Rs. 11435 in Tamil Nadu while the same for non-beneficiary households is Rs. 126301 in 2016-17. Average annual income for beneficiary households was Rs. 109261 in 2015-16 while it was Rs. 119845 for non-beneficiary households in the same year. This shows that there is an increase in income of beneficiary households in the current year. Major sources of income are farming, horticulture, dairy, poultry, sericulture, agriculture labour work, casual labour work apart from salary. For farming, the average income of non-beneficiary households is higher than beneficiaries; so is the average cost. Average income from horticulture is higher for non-beneficiary households. Average cost on horticulture is also higher for non-beneficiary households.

Table 23-8 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, the average income of beneficiary households is Rs. 127107 which is lower than non-beneficiaries (Rs. 133992); so is the average cost (Rs. 50843 and Rs. 53597 respectively).

In terms of percentage change in income (Table 23-9), average profit for farming has increased and for horticulture, it has decreased in Tamil Nadu for beneficiary households in 2016-17 over the previous year. Average income has increased by 4% in farming for beneficiary households. However, the average cost has decreased by 22% for beneficiary households in farming.

23.1.1.4 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 23-10 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Expenditure on agriculture is higher for non-beneficiaries in 2016-17 as compared to beneficiaries. It is evident from the table that both for the beneficiary and non-beneficiary households, rent in the leased-in land is the major factor of the annual expenditure. Apart from that most of the households have reported expenditure as rent on agriculture machinery (tractor, harvester etc.) (Rs. 34959 in 2016-17 for beneficiary and Rs. 39213 for non-beneficiary) and components that are clubbed in others (i.e. seed fertilizer etc.) (Rs. 24394 in 2016-17 for beneficiary and Rs. 33470 for non-beneficiary). Expenditure on purchased water for irrigation and electricity and diesel are other important components of agriculture expenditure. The component-wise analysis shows that rent on machinery (tractor, harvester etc.) is higher for non-beneficiaries and so is the expenditure on purchased water for irrigation and electricity and diesel.

Table 23-11 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. Rent on machinery (tractor, harvester etc.) has increased and expenditure on purchased water for irrigation for beneficiary households has decreased over this year.

In our sample, 11% of the beneficiary households and 13% of non-beneficiary households have kaccha houses. 89% of beneficiary households and 85% of non-beneficiary households have pucca houses (Table 23-12).

There is a disparity in ownership of different assets across different households. Almost 100% of the beneficiary and non-beneficiary households possess TV (Table 23-13). In the case of the mobile phone, almost 100% of both beneficiary and non-beneficiary households have reported to have it. Non-beneficiary households also have more two-wheelers and four-wheelers. It can be said from the data on asset ownership that asset-wise non-beneficiary households are more well-off.

23.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that households cultivated paddy, jowar, maize, ragi, tur, gram, sugarcane etc. in the majority of the cultivated area. On an average, beneficiary households used the more cultivated area for jowar, tur, gram etc. as compared to non-beneficiary households; while the situation is opposite for crops like paddy, maize, ragi etc. (Table 23-14 and Table 23-15). Average production of jowar, tur, gram and sugarcane are higher for beneficiary households as compared to non-beneficiaries. Paddy, maize, ragi production are higher for non-beneficiary households as compared to beneficiary households. There is not much difference in price of the marketed quantity of products is received by the beneficiary and non-beneficiary households. Profitability is higher for jowar, maize, ragi, tur, gram for beneficiary households, but it is lower for paddy. The details of crop-wise cultivated area, irrigated area, production, the price received, total paid-out cost and profitability are described in the following table.

A closer look says that average production of paddy is 10% lower for paddy, while paid-out cost is 18% lower for beneficiary households as compared to non-beneficiary households (Table 23-16). As a net result, the profitability of paddy is 8% lower for paddy for beneficiaries. For jowar, tur, gram and sugarcane; cultivated area, irrigated area as well as production and marketed quantity is comparatively higher for beneficiaries.

23.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households have income from livestock. RKVY also provides support for the development of animal husbandry and livestock. Milk is the only product from livestock (Table 23-19). There is not much difference in average income from it. Income from milk is higher for non-beneficiaries on an average.

23.1.1.7 AWARENESS OF RKVY & ITS SOURCES

Regarding the awareness of RKVY, it is found that in our sample, 97% of non-beneficiary households are not aware of RKVY (Table 23-20). 99% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. This can be easily observed from the Table 23-20 that beneficiary households have better awareness regarding

RKVY or other government programmes. So increasing awareness is a basic requirement for the success of such government scheme.

In our sample in Tamil Nadu, the majority of the beneficiary households had received information regarding RKVY from Agriculture/Horticulture Department, friends and neighbours and agriculture exhibition (Table 23-21). For non-beneficiary households, 33% of the households received information from friends and neighbours. It is evident that for such government schemes to succeed, government departments and local bodies need to be active in disseminating the awareness regarding the programme.

23.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural mechanization through RKVY. Beneficiaries have received support from RKVY programme in buying tractor/mini-tractor, rotavator, tiller and other sowing and planting equipment (Table 23-22). The majority of them has received it through direct benefit transfer. Beneficiaries have reported that these implements have helped in solving labour problems. 21% of the cost of the tractor/mini-tractor (average) is provided by RKVY in Tamil Nadu, while for rotavator, it is 41%; for the tiller, it is 46%; for a cultivator, it is 42%, for other sowing and planting equipment, it is 19% (Table 23-23). For DBT in RKVY, number of days taken to receive subsidy varies from 48 days to 967 days.

In Tamil Nadu, 89% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 23-24A and Table 23-24B). The share is less for marginal farmers, both for the beneficiary and non-beneficiary households. Among them, 87% of the households are provided with soil health card.

23.2 CONCLUSION

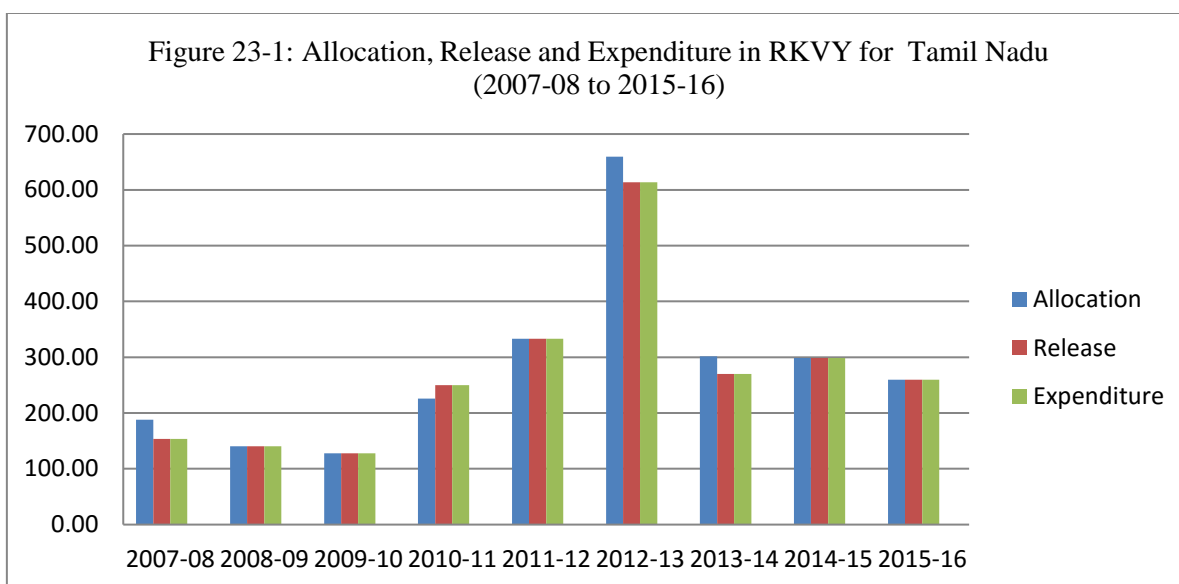
Under RKVY scheme, the central government has allocated Rs. 259.94 crore for Tamil Nadu in 2015-16. The state agriculture is facing the challenges in terms of increasing vulnerability of growing population, climate variability, declining production resources, rising input costs, labour shortage and volatile market prices. The policy initiatives aim to provide support to the

farmers in terms of introduction of crop-specific agricultural practices, improving productivity, commercial and dynamic farming system, increasing mechanization of agriculture, use of infrastructure and technology to empower farmers, promotion of capacity building and supply of better quality inputs. RKVY has taken up various projects in this state to cope up with these problems. Tamil Nadu proposed 59 projects amounting to Rs. 524.7 crores in 2016-17. 59 projects are pointed out which needs funds from RKVY in 2016-17, among which crop development (201 crore) is given highest priority in terms of cost, while in terms of number of projects, fisheries are given priority. Project with highest average cost is proposed for agriculture mechanization. Allocation, release and expenditure were highest in 2012-13 for Tamil Nadu, after which year it has reduced substantially.

In this study, both beneficiary and non-beneficiary households are surveyed to see the impact of RKVY interventions on farm households. Total 450 sample households were surveyed in Tamil Nadu, out of which 360 households belong to the beneficiary group. In our sample in Tamil Nadu, a total of 360 households are beneficiaries and 90 are non-beneficiaries. Total number of the population covered is 1661, among them, 1340 people belong to beneficiary households and 321 people belong to non-beneficiary households. In our sample, 60% of beneficiary households are marginal farmers i.e. their operated area is less than 2.5 acres. 31% of them are small farmers (operated area 2.5 to 5 acres), 7% is medium (operated area 5 to 10 acres) and 2% in large farmers (operated area more than 10 acres). In the non-beneficiary households, 67% are marginal, 30% are small, 2% are medium and 1% are large farmers.

In our sample in Tamil Nadu, for kharif 2016-17, the average area of owned land is higher for the marginal category of land-holding among the beneficiary households as compared to non-beneficiary households. For rest of the categories, non-beneficiary has more amount of land. In the sample of our study, 38% of the beneficiary households have reported income from farming. For non-beneficiary households, 39% of households have reported farming as an occupation. 8% of beneficiary households have reported income from horticulture while for non-beneficiary households, 9% reported income from that. Average annual income of the sample beneficiary households in aggregate is Rs. 11435 in Tamil Nadu while the same for non-beneficiary households is Rs. 126301 in 2016-17. Average annual income for beneficiary households was

Rs. 109261 in 2015-16 while it was Rs. 119845 for non-beneficiary households in the same year. This shows that there is an increase in income of beneficiary households in the current year. Expenditure on agriculture is higher for non-beneficiaries in 2016-17 as compared to beneficiaries. Households cultivated paddy, jowar, maize, ragi, tur, gram, sugarcane etc. in the majority of the cultivated area. On an average, beneficiary households used the more cultivated area for jowar, tur, gram etc. as compared to non-beneficiary households; while the situation is opposite for crops like paddy, maize, ragi etc. Average production of jowar, tur, gram and sugarcane are higher for beneficiary households as compared to non-beneficiaries. Paddy, maize, ragi production are higher for non-beneficiary households as compared to beneficiary households. There is not much difference in price of the marketed quantity of products is received by the beneficiary and non-beneficiary households. Profitability is higher for jowar, maize, ragi, tur, gram for beneficiary households, but it is lower for paddy. In our sample in Tamil Nadu, the majority of the beneficiary households had received information regarding RKVY from Agriculture/Horticulture Department, friends and neighbours and agriculture exhibition. Beneficiaries have received support from RKVY programme in buying tractor/mini-tractor, rotavator, tiller and other sowing and planting equipment. The majority of them has received it through direct benefit transfer. Beneficiaries have reported that these implements have helped in solving labour problems. 21% of the cost of the tractor/mini-tractor (average) is provided by RKVY in Tamil Nadu, while for rotavator, it is 41%; for the tiller, it is 46%; for a cultivator, it is 42%, for other sowing and planting equipment, it is 19%. For DBT in RKVY, number of days taken to receive subsidy varies from 48 days to 967 days. In our study, it is found that beneficiary households have cited the problems that they face most as: availability of information about RKVY programme details, contact details of the department, the number of documents required for availing subsidy are too many, subsidy paid after purchase while initial payment remains the highest problem.



Source: <http://rkvy.nic.in/>

Table 23-1: List of RKVY projects surveyed in Tamil Nadu

Project code	Name of the Selected projects
1	Integrated Food grain Production Programme for paddy
2	Pulses Improvement Programme
3	Enhancement programme for Horticulture crops
4	Onion development Programme
5	Soil Conservation in the Catchment of River valley projects in Tamil Nadu
6	Agricultural Mechanization
7	Establishment of Six Centres of Excellence by Tamil Nadu Agricultural University
8	Promotion of Organic cultivation for quality Black pepper production in DLF Chettinad
9	Door step veterinary and Emergency health services in 155 units
10	Increasing Production and Productivity through implementation of sustainable sugarcane Initiative and Enrichment of Soil Fertility through Sugarcane Trash Mulching
11	Mango Research Centre, Paiyur- for case study

Table 23-2: Distribution of farmers in our sample according to their land-holding (operated area) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless			
Marginal	215(60)	60(67)	275(61)
Small	112(31)	27(30)	139(31)
Medium	25(7)	2(2)	27(6)
Large	8(2)	1(1)	9(2)
Total	360(100)	90(100)	450(100)

Table 23-2A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif2016-17)

For Kharif 2016-17			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.73	3.73	6.39	13.44
Leased-in Land/share cropping				1.75	2.1	4.4	7
Leased-out Land/share cropping					2		
Total operated area (owned+LI-LO)				1.73	3.9	7.27	14.31
Irrigated Area by canal				14.5	16.2	17.6	34.1
Irrigated Area by tube well	Rented	Electric		9.3	13.7	14.5	0
		Diesel		9	12.6	3.1	0
	Owned	Electric		15.5	15.1	18.1	24.8
		Diesel		18.8	12	16.5	0
Irrigated area by tanks				15.8	12.9	15.3	0
Irrigated area by Wells				17.1	13.5	15	41.1
Irrigated Area by others				0	4.1	0	0

Table 23-2B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.60	4.05	7.50	15.00
Leased-in Land/share cropping				2.50	2.50	2.50	
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.61	4.14	8.75	15.00
Irrigated Area by canal				16.4	17.7	42.9	66.7
Irrigated Area by tube well	Rented	Electric		6.7	16.4	0.0	0.0
		Diesel		19.1	13.1	0.0	0.0
	Owned	Electric		12.6	20.0	57.1	0.0
		Diesel		21.3	15.6	0.0	33.3
Irrigated Area by Tanks				11.6	0.0	0.0	0.0
Irrigated Area by Wells				12.3	17.2	0.0	0.0
Irrigated Area by others				0.0	0.0	0.0	0.0

Table 23-2C: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.73	3.73	6.39	13.44
Leased-in Land/share cropping				1.75	2.10	4.40	7.00
Leased-out Land/share cropping					2.00		
Total operated area (owned+LI-LO)				1.73	3.90	7.27	14.31
Irrigated Area by canal				0.0	0.0	20.3	24.4
Irrigated Area by tube well	Rented	Electric		44.4	33.9	26.1	18.0
		Diesel		12.2	11.3	13.5	6.8
	Owned	Electric		43.3	36.7	28.7	36.9
		Diesel		0.0	18.1	11.4	13.9
Irrigated Area by Tanks				0.0	0.0	0.0	0.0
Irrigated Area by Wells				0.0	0.0	0.0	0.0
Irrigated Area by others				0.0	0.0	0.0	0.0

Table 23-2D: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi2016-17)

For Rabi 2016-17			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land				1.60	4.05	7.50	15.00
Leased-in Land/share cropping				2.50	2.50	2.50	
Leased-out Land/share cropping							
Total operated area (owned+LI-LO)				1.61	4.14	8.75	15.00
Irrigated Area by canal				0.0	24.8	0.0	0.0
Irrigated Area by tube well	Rented	Electric		47.5	33.1	17.8	14.7
		Diesel		0.0	8.3	0.0	0.0
	Owned	Electric		52.5	33.8	60.0	38.8
		Diesel		0.0	0.0	22.2	46.5
Irrigated Area by Tanks				0.0	0.0	0.0	0.0
Irrigated Area by Wells				0.0	0.0	0.0	0.0
Irrigated Area by others				0.0	0.0	0.0	0.0

Table 23-4: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Total Sample Population		1340	321	1661
Age group	<=15	16	16	16
	>15 to 25	17	17	17
	>25 to 40	26	27	26
	>40 to 59	29	28	29
	>59	12	12	12
	All Groups	100	100	100
Education	Illiterate	2	1	2
	Class 1 to 5	30	31	30
	Above Class 5 to 8	14	11	14
	Above Class 8 to 12	32	34	33
	Above Class 12	18	19	18
	Other diploma	1	1	1
	can read and write	0	0	0
	can read only	0	0	0
	can count only	1	0	1
	could not attend class 1	1	2	1
	All Groups	100	100	100

Table 23-5: Earning from sample households

Occupation	Average Earning in last 365 days		
	Beneficiary	Non-Beneficiary	Total
cultivation	80849	79188	80519
agricultural labour	46667		40000
salaried employment	36000		36000
Horticulture	156990	135172	152197
Student	11544	6604	10644
housewife	26203	27340	26432
others (no separate income)	70000		61250
All Groups	52174	49232	51605

Table 23-6: Percentage distribution of households according to sources of income (2016-17)

Occupation	Percentage of households engaged		
	Beneficiary	Non-Beneficiary	Total
cultivation	38	39	38
salaried employment	1	0	1
Horticulture	8	9	8
Student	36	33	35
housewife	14	15	14
non-working	3	3	3
others (no separate income)	1	1	1

Table 23-7: Average income and cost of beneficiaries and non-beneficiaries (2016-17)

Source	Beneficiary			Non- Beneficiary		
	Average income	Average Cost	Average Profit	Average income	Average Cost	Average Profit
Farming	132146	39644	92502	138992	41698	97295
Horticulture	182383	73065	109318	215974	103107	112867
Floriculture		17588			17490	
Dairy	54609	17624	36985	57873	20404	37469
Poultry	55222	33500	21722	65000	70000	-5000
Sericulture	200000	100000	100000			
Agricultural Labour	22000	25000	-3000			
Casual Labour	30000	25000	5000	10000		
Beekeeping	1250					
Salary	149000					
Other		77797			54786	
Total	114365	41078	73287	126301	47514	78786

Table 23-8: Average income and cost of beneficiaries and non-beneficiaries (2015-16)

Source	Beneficiary			Non- Beneficiary		
	Average income	Average Cost	Average Profit	Average income	Average Cost	Average Profit
Farming	127107	50843	76264	133992	53597	80395
Horticulture	173822	54996	118826	209607	49948	159659
Floriculture	3	19598	-19595	3	21600	-21597
Dairy	35019	9060	25959	40840	12294	28546
Poultry	99750	89667	10083	65000	35500	29500
Sericulture	200000	100000	100000			
Agricultural Labour	30000	2500	27500			
Beekeeping	2000					
Salary	90000					
Other	45000			70000		
Total	109261	41140	68121	119845	43587	76258

Table 23-9: Change in Average income and cost of beneficiaries (2016-17)

Source	Average income	Average Cost	Average Profit
Farming	4	-22	21
Horticulture	5	33	-8
Floriculture	-100	-10	-100
Dairy	56	95	42
Poultry	-45	-63	115
Sericulture	0	0	0
Agricultural Labour	-27	900	-111
Beekeeping	-38		
Salary	66		
Other	-100		
Total	5	0	8

Table 23-10: Annual average expenditure for agriculture (Rs.)

<i>items</i>	Average expenditure on Agriculture			
	2016-17		2015-16	
	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	13188	14500	8750	3000
Total rent on machinery (tractor, harvester, etc.)	34959	39213	39025	42516
Expenditure on purchased water for irrigation	11467	13851	8936	10241
Expenditure on electricity for irrigation	8475	9486	9548	11137
Expenditure on diesel	9460	10964	11242	12468
Expenditure on other fuels for agriculture	6894	7557	4672	4853
Any other	24394	33470	20362	28867
<i>Total expenditure on agriculture</i>	108837	129042	102535	113082

Table 23-11: % increase in average expenditure on agriculture of beneficiary households in 2016-17 over 2015-16

<i>items</i>	% change in total expenditure from 2015-16
Rent on leased-in land	101
Total rent on machinery (tractor, harvester, etc.)	-11
Expenditure on purchased water for irrigation	-11
Expenditure on electricity for irrigation	4
Expenditure on diesel	-17
Expenditure on other fuels for agriculture	131
Any other	19
<i>Total expenditure on agriculture</i>	1

Table 7-12: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary
Kachha	11	13
Pucca	89	85
Semi-Pucca	0	1
Others	0	1
Total	100	100

Table 23-13: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes (%)	No (%)	Total (%)	Yes (%)	No (%)	Total (%)
TV	100	0	100	99	1	100
Telephone	2	98	100	5	95	100
Mobile phone	99	1	100	100	0	100
Cycle	40	60	100	43	57	100
Two wheeler	99	1	100	100	0	100
Four wheeler	6	94	100	10	90	100
Refrigerator	93	7	100	93	7	100

Table 23-14: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (QTLs)	Marketed Quantity (QTLs)	Price Received (Per QTLs)	Total Paid-out Costs (Rs)	Profitability
paddy	3.00	3.01	82.82	66.26	1386.44	21533.42	70332.39
jowar	0.77	0.77	6.75	6.07	1500.00	4868.33	4236.67
maize	2.93	2.93	64.82	62.87	1325.00	58658.28	24644.47
ragi	3.88	3.88	31.67	31.04	1100.00	19405.95	14738.05
tur	2.82	2.82	19.14	18.57	5000.00	53169.72	39680.28
gram	5.08	5.08	33.03	32.04	2500.00	10163.81	69936.19
sugarcane	3.58	3.58	1236.38	1112.75	250.00	236149.29	42038.21
fruit 1	1.32	1.32	270.86	261.85	1048.00	115226.00	159192.80
fruit 2	1.83	1.83	119.17	116.78	800.00	20166.67	73257.33
vegetable 1	2.01	2.03	177.05	159.53	867.31	59473.67	78887.92
spices 1	2.80	2.80	14.08	13.37	39380.95	235776.19	290747.14
flower 1	0.50	0.50	1.00	1.00	40000.00	25000.00	15000.00
others	2.75	2.75	17.29	17.04	5417.02	51252.66	41053.38

Table 23-15: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non-beneficiary households (2016-17)

Crop	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (QTLs)	Marketed Quantity (QTLs)	Price Received (Per QTLs)	Total Paid-out Costs (Rs)	Profitability
paddy	3.21	3.37	92.73	74.19	1383.16	26173.68	76442.80
jowar	0.75	0.75	6.60	5.94	1500.00	5750.00	3160.00
maize	3.19	3.19	70.59	68.47	1325.00	66947.37	23775.38
ragi	4.44	4.44	42.46	41.51	1125.00	30555.56	16143.19
tur	2.75	2.75	18.70	18.14	5000.00	59500.00	31200.00
gram	3.09	3.09	20.10	19.49	2500.00	7231.82	41493.18
sugarcane	3.39	3.39	1169.86	1052.88	250.00	226000.00	37220.00
fruit 1	1.17	1.17	176.00	169.67	1083.33	82000.00	101809.16
fruit 2	1.50	1.50	97.50	95.55	800.00	16500.00	59940.00
vegetable 1	1.99	1.99	179.16	161.43	847.22	63804.17	72962.92
spices 1	2.33	2.33	11.67	11.08	40000.00	198666.67	244533.33
flower 1	1.00	1.00	10.00	10.00	8000.00	30000.00	50000.00
others	2.33	2.33	8.73	8.64	6000.00	42555.56	9284.44

Table 23-16: Difference in average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops among beneficiary and non-beneficiary households (2016-17)

Crop	% Difference between Beneficiary and Non- Beneficiary						
	Cultivated Area	Irrigated Area	Production	Marketed Quantity	Price received	Total paid-out costs	Profitability
paddy	-6.76	-10.69	-10.69	-10.69	0.24	-17.73	-7.99
jowar	2.22	2.22	2.27	2.19	0.00	-15.33	34.07
maize	-8.17	-8.17	-8.17	-8.18	0.00	-12.38	3.66
ragi	-12.67	-12.67	-25.41	-25.22	-2.22	-36.49	-8.70
tur	2.36	2.36	2.35	2.37	0.00	-10.64	27.18
gram	64.37	64.37	64.33	64.39	0.00	40.54	68.55
sugarcane	5.69	5.69	5.69	5.69	0.00	4.49	12.95
fruit 1	13.42	13.42	53.90	54.33	-3.26	40.52	56.36
fruit 2	22.22	22.22	22.23	22.22	0.00	22.22	22.22
vegetable 1	1.42	2.39	-1.18	-1.18	2.37	-6.79	8.12
spices 1	20.15	20.15	20.65	20.67	-1.55	18.68	18.90
flower 1	-50.00	-50.00	-90.00	-90.00	400.00	-16.67	-70.00
others	17.74	17.74	98.05	97.22	-9.72	20.44	342.17

Table 23-17: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1382	1390	1390	1390		1373	1390		1390
jowar		1500					1500			
maize		1325	1325	1325	1325		1325	1325	1325	1325
ragi		1100	1100	1100	1100		1100	1137	1100	
tur		5000	5000	5000			5000	5000		
gram		2500	2500	2500	2500		2500	2500		
sugarcane		250	250	250	250		250	250		

Table 23-18: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1313	1321	1320	1320		1305	1320		1320
jowar		1425					1425			
maize		1258	1258	1258	1258		1258	1258	1258	1258
ragi		1045	1045	1045	1045		1045	1080	1045	
tur		4750	4750	4750			4750	4750		
gram		2375	2375	2375	2375		2375	2375		
sugarcane		237	237	237	237		237	237		

Table 23-19: Distribution of income from livestock

	Beneficiary	Non-beneficiary
2016-17	35882	36822
2015-16	35882	36822

Table 23-20: Awareness regarding RKVY (2016-17)

	Beneficiary			Non-Beneficiary		
	Yes	No	Total	Yes	No	Total
Have you heard about RKVY?	86	14	100	3	97	100
Did you receive any benefits from RKVY in the year 2016-17?	92	8	100	2	33	35
Did you receive any benefits from RKVY in the last five years excluding this year?	1	99	100	0	100	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	1	99	100	0	100	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	0	100	100	0	100	100

Table 23-21: Source of Awareness regarding RKVY (%) (2016-17)

Source	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	16	33	16
Newspaper	9	0	9
Agriculture/Horticulture Department	56	67	56
SAU	0	0	0
KVK	0	0	0
Input Suppliers	0	0	0
TV/Radio	0	0	0
Agri. Exhibitions	15	0	15
ZP/GP	4	0	4
Other sources	0	0	0
Total	100	100	100

Table 23-22: Number of beneficiaries who bought the implements in 2016-17

Implements	Number of Beneficiaries
Tractor/mini-tractor	13
Rotavator	63
Tiller	4
Cultivators	12
Other Sowing and Planting equipment	12

Table 23-23: Details of intervention in agriculture mechanization in Tamil Nadu for beneficiaries

		Tractor/mini-tractor	Rotavator	Tiller	Cultivators	Other Sowing and Planting equipment
No of beneficiaries of RKVY		13	63	4	12	12
number of benefits received						
Total Cost (Rs.)		6123511	6116776	546358	599175	340200
Amount financed by loan (Rs.)		4856511	3622886	166679	346475	63800
Source of Credit						
	Bank	13	63	3	10	7
	MFI					
	Money lender					
	Other					
Subsidy amount from RKVY (Rs.)		1267000	2493890	252500	252700	63801
Mode of subsidy Transfer:						
	Price subsidy					1
	DBT	13	63	3	10	11
If DBT, Number of days taken to receive a subsidy?		161	950	48	170	967
Benefits derived from the implement						
1	Solved labour problem	13	85	3	21	5
2	Enabled timely operations		2	1		7
3	Saved water					
4	Helped in controlling weed			1		
5	Helped in good plant growth			1		
6	Reduced Drudgery			1		
7	Helped in transportation					
8	Reduced cost of Cultivation			1		
9	Increased cropping intensity					
10	Not useful					
Subsidy received from any other scheme						
Subsidy not received from any other scheme		13	63	3	11	8
If subsidy not received, number of households who have said who would buy this implement			24	1		
If subsidy not received, number of households who have said who would not buy this implement			39	2	11	8

Table 23-24A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Whether the soil is tested in your area?			Soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless			0			0
Marginal	81	19	100	88	12	100
Small	100	0	100	87	13	100
Medium	100	0	100	76	24	100
Large	100	0	100	88	13	100
Total	89	11	100	87	13	100
Non-beneficiary						
Landless			0			0
Marginal	83	17	100	86	14	100
Small	100	0	100	89	11	100
Medium	100	0	100	100	0	100
Large	100	0	100	100	0	100
Total	89	11	100	88	13	100
Overall						
Landless			0			0
Marginal	82	18	100	88	12	100
Small	100	0	100	87	13	100
Medium	100	0	100	78	22	100
Large	100	0	100	89	11	100
Total	89	11	100	87	13	100

24 TELANGANA

Telangana is the 29th state of India, which was formed from Andhra Pradesh on the 2nd of June 2014. Geographical area of the state is 11487 thousand hectares⁵³. Telangana has predominantly rural population from marginalized social groups, for whom agriculture and allied services are the major occupation. Primary sector, which consists of crops, livestock, forestry & logging, fishing & aquaculture, and mining & quarrying sectors; contributed to the state GSVA about 18.5% in 2016-17 (Socio-Economic Outlook 2016-17 for Telangana). The major contributors in primary sector are agriculture and allied sector with 15.3% share. Gross cropped area in Telangana is 6288 thousand hectares in 2013-14. Rural landless households in Telangana constituted 43.3% of total rural households (Telangana Social Development Report 2017). The average size of holdings in the state was 1.12 hectares in 2010-11. Major crops are paddy, maize, arhar (red gram) and cotton, which account for about 75% of the total gross cropped area in the state.

RKVY was started in 2014-15 in Telangana. Under RKVY scheme, Rs. 427.85 crore was allocated, among which Rs. 256.99 crore was released and Rs. 171.74 crore was spent for Telangana for 2016-17 till 31st June 2017. In Telangana, in 2016-17, highest number of projects is allocated to research among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 33 projects proposed with priority sectors being research. In the medium-size category (cost 5 to 10 crore), highest number of projects are allocated for animal husbandry, agriculture mechanization, seed and horticulture (one project each). For large projects with cost 10 to 25 crore, priority areas are animal husbandry, seed and horticulture (one project each). Agriculture mechanization and marketing and post-harvest management are given important sectors in the very large (cost > 25 crore) category. So small projects are dominated by research and large projects are by marketing and post-harvest management in 2016-17. In aggregate, up to the date the data was accessed, 85 projects are

⁵³ <http://www.mospi.gov.in/statistical-year-book-india/2017/177>

pointed out which needs funds from RKVY in 2016-17, among which marketing and post-harvest management (450 crore), among which building godowns and warehouses (442 crores) is given highest priority in terms of cost, while in terms of number of projects, research (29) are given priority. To sum up, a number of research and horticulture projects are proposed but they are mainly small-sized projects. In 2016-17, Telangana aims to make lump sum investment in preparing godowns and warehouses. Figure 24-1 shows allocation, release and expenditure in RKVY in Telangana over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Telangana. We have selected 8 projects for Telangana and analysed the performance of RKVY by collecting primary information. List of selected projects for Telangana is given below (Table 24-1).

24.1 RESULTS FROM PRIMARY SURVEY

24.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Telangana, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, the majority of the beneficiary households (56% of beneficiary households) are marginal farmers, 34% are small farmers, and 10% belong to medium category. In the non-beneficiary households, 60% are marginal, 30% are small, and 10% are medium farmers (Table 24-2).

24.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for kharif 2016-17, the average area of owned land is higher for marginal and medium farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tube well (electric and diesel) for irrigation in kharif season. Diesel tubewells are mainly used by marginal farmers (Table 24-3A & 24-3B).

We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of owned land is higher for marginal and medium farmers among the beneficiary households as compared to non-beneficiary households (Table 24-4A & 24-4B). Households depend on tube well (electric and diesel) for irrigation in kharif season; some of it is rented.

In our sample, a total of 120 households are beneficiaries and 30 are non-beneficiaries. A total number of the population covered is, 763 among them, 619 people belong to beneficiary households and 144 people belong to non-beneficiary households (Table 24-5). Among them in beneficiary households, 32% of the population is below 15 age group, while 8 percent are in above 60 age group. Rest 60% population in beneficiary households is in working-age-group. In non-beneficiary households, 28% of the population is below 15 age-groups, while 7 percent are in above 60 age group. Rest 65% population in non-beneficiary households is in working-age-group. Taking both the groups into consideration, 61% population is in working-age group. On the education front, 24% of the population in beneficiary group and 19% of non-beneficiary group is illiterate. 68% population in beneficiary households and 70% population in non-beneficiary households have attended school (class 1 to 12); while 5% population in beneficiary households and 7% population in non-beneficiary households have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 24-6)

24.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 62% of the beneficiary households have reported income from farming. For non-beneficiary households, 54% of households have reported farming as an occupation. 7% of beneficiary households have reported income from dairy. 13% of beneficiary

and 14% of beneficiary households have reported income from work as casual labour (Table 24-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 152778 in Telangana while the same for non-beneficiary households is Rs. 117446 in 2016-17 (Table 24-8). Average annual income for beneficiary households was Rs. 131619 in 2015-16 while it was Rs. 99527 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming and dairy apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is higher for non-beneficiary households as compared to beneficiary households (Table 24-8).

Table 24-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 177667 which is higher than non-beneficiaries (Rs. 133900); so is the average cost (Rs. 72575 and Rs. 55000 respectively).

In terms of percentage change in income (Table 24-10), average income has increased by 13% in farming both for beneficiary and non-beneficiary households. However, the average cost has increased more for beneficiary households in farming than non-beneficiary households.

24.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 24-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on purchased water for irrigation, electricity for irrigation and expenditure on diesel are higher for beneficiaries than non-beneficiaries in 2016-17.

Table 24-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in expenditure on purchased water for irrigation for both beneficiary and non-beneficiary households, though the latter is higher than the former.

24.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Telangana, for beneficiary households, only small and medium farmers own large agricultural implements like tractor and trolley. Marginal and small farmers have more access to implements like manual/power sprayers, electrical & diesel pump sets and Sprinkler sets/Drip Irrigation Equipment, leveller and fodder chopper (Table 24-13A). In non-beneficiary households, medium farmers own equipment like tractor and trolley (Table 24-13B).

Marginal, small and medium farmers from beneficiary households have a significant proportion of ownership of livestock (Table 24-14B). Small farmers among the beneficiaries have more cows, buffalos, young stock and goat as compared to other classes.

In our sample, 43% of the households for beneficiary and 30% of non-beneficiary groups have pucca houses (Table 24-15). 43% households in beneficiary category and 50% of non-beneficiary category have semi-pucca houses.

It is observed from our sample that 75% of beneficiary households possess TV while for non-beneficiaries; it is 80% (Table 24-16). In the case of mobile phones almost all households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles and two-wheelers are there, but four-wheelers and refrigerator are very rare.

24.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, jowar, bajra, maize, ragi, pulses, groundnut, soyabean, cotton, fruit, vegetables and spices in the majority of the cultivated area (Table 24-17). But for non-beneficiary households, the emphasis is on paddy, pulses, maize and soyabean (Table 24-18). Average production of paddy is almost similar for beneficiary and non-beneficiary households (40 qtls). Price of the marketed quantity for paddy and groundnut are more for the beneficiary household vis-à-vis non-beneficiary households;

while for jowar, maize, soyabean, cotton; average price is higher for non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 24-19). For paddy, soyabean, cotton, marginal farmers are getting less price as compared to small farmers. But for jowar, maize, gram; the situation is opposite (Table 24-19).

In 2015-16 also, it is seen that price received by marginal farmers is low for paddy, maize, gram, soyabean and cotton as compared to small farmers for beneficiary households.

24.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. In our sample for Telangana, it is seen that average income from livestock is lower for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, 96% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries, the share is 100% (Table 24-21).

The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries in 2016-17 and 2015-16. Income from milk is higher for beneficiaries for both the years. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for non-beneficiaries (Table 24-22).

24.1.1.7 AWARENESS REGARDING RKVY PROGRAMME

Regarding the awareness of RKVY, it is found that in our sample, non-beneficiary households mostly are not aware of RKVY. 70% of the non-beneficiaries have not heard about RKVY. 44% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 23% of the beneficiary households and 10% of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 35% of the beneficiary households and 17% of the non-beneficiary

households had received some benefits from government schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 24-21 that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in Telangana, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours; Agriculture/Horticulture Department and Zila Panchayat and Gram Panchayat (Table 24-22). For non-beneficiary households, 89% of the households received information from friends and neighbours.

24.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY (Table 24-23A). Several crops are distributed to farmers through the RKVY programme. For the project “Distribution of soybean seed in Nizamabad, Medak, Karim Nagar, and Adilabad”, we surveyed the households of villages Danthepalli and Gurjal, where seeds for soyabean were distributed under this project. Under the project “Hybrid vegetable seed distribution”, seeds were distributed for vegetables like brinjal, bottle gourd, tomato, spinach, chilly, ladyfinger etc. in our sample village Porandla and Adraspalli. Under the project “Supply of vegetable mini kits”, seed for crops like tomato, okra, capsicum, beans, Bitter gourd, maize etc. were distributed in villages like Kothapalli and Mandalagudem. Majority of the beneficiaries are marginal farmers (Table 24-23A). The majority of the farmers have received benefit through price subsidy (Table 24-23B).

In Telangana, 36% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 24-24A). Among them, 65% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 24-24B).

Within our sample in Telangana, 100% of beneficiary households had undergone training and demonstration (Table 24-25). Only 4% of the households found training beneficial and want more training. RKVY programme has facilitated training and demonstration in Telangana for all categories of farmers.

24.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as institutional financing facility not available, Capacity building/technical advice not provided, subsidy paid after purchase while initial payment and lack of monitoring (Table 24-26A). For non-beneficiary households, major problems are biased towards large land owners, Capacity building/technical advice not provided, information about RKVY programme details not easily available, Prescribed machinery/asset not easily available in the market, eligibility or criteria for availing the subsidy not known, Implementing agencies are located far away and complementary inputs not available (Table 24-26B). Information about RKVY programme details not easily available is the major problem for marginal farmers in non-beneficiary category.

According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in increasing production, better price realization, providing financial assistance, improving marketing facilities, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in post-harvesting storage, and procurement (Table 24-27A & 24-27B).

24.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

In Telangana, three projects were selected - Permanent Pandals, Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms and Construction of scientific godowns. The survey observed that permanent pandal was being built under the first project, new fish seed farm for the second project and warehouse for the third project. The projects were proposed by implementing agency at state level for first project, implementing agency at district level for second project and nodal agency for third project (Table 24-28).

Fund for second project is not released till the date of survey (Table 24-29). But for the first and third project, some funds are released. It is reported that the major problems regarding funds are delayed release, reduced amount and uncertainty in amount released.

Tender was called for execution of the work for second and third project, but not for first one. Third project also called for e-tender. Respondent of that project expressed that e-tendering improves the efficiency of the tendering process (Table 24-30).

Complementary/ Supplementary projects for the first project could be warehouse, marketing sheds, cold-storage, seed-bank, soil-testing labs, research labs, demonstration unit, training centre, rural roads, extension and training services, co-operatives, FPOs, WUAs, rural electrification, and stable power supply (Table 24-31). No convergence of these projects with other schemes was reported (Table 24-32).

24.2 CONCLUSION

RKVY was started in 2014-15 in Telangana. Under RKVY scheme, Rs. 427.85 crore was allocated, among which Rs. 256.99 crore was released and Rs. 171.74 crore was spent for Telangana for 2016-17 till 31st June 2017. Among the proposals, small projects are dominated by research and large projects are by marketing and post-harvest management in 2016-17. In aggregate, up to the date the data was accessed, 85 projects are pointed out which needs funds from RKVY in 2016-17, among which marketing and post-harvest management (450 crore), among which building godowns and warehouses (442 crores) are given highest priority in terms of cost, while in terms of number of projects, research (29) are given priority. To sum up, a number of research and horticulture projects are proposed but they are mainly small-sized projects. In 2016-17, Telangana aims to make lump sum investment in preparing godowns and warehouses.

This study analyses performance of RKVY for the year 2016-17 in Telangana. We have selected 8 projects for Telangana and analysed the performance of RKVY by collecting primary information. In our sample in Telangana, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. In our sample, the majority of the beneficiary households (56% of beneficiary households) are marginal farmers, 34% are small farmers, and 10% belong to medium category. In the non-beneficiary households, 60% are marginal, 30% are small, and 10% are medium farmers.

In our sample, for kharif 2016-17, the average area of owned land is higher for marginal and medium farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tube well (electric and diesel) for irrigation in kharif season. Diesel tubewells are mainly used by marginal farmers.

In our sample, a total of 120 households are beneficiaries and 30 are non-beneficiaries. A total number of the population covered is, 763 among them, 619 people belong to beneficiary households and 144 people belong to non-beneficiary households. In the sample of our study, 62% of the beneficiary households have reported income from farming. For non-beneficiary households, 54% of households have reported farming as an occupation. 7% of beneficiary households have reported income from dairy. 13% of beneficiary and 14% of beneficiary households have reported income from work as casual labour.

Average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is higher for non-beneficiary households as compared to beneficiary households.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on purchased water for irrigation, electricity for irrigation and expenditure on diesel are higher for beneficiaries than non-beneficiaries in 2016-17.

In our sample in Telangana, for beneficiary households, only small and medium farmers own large agricultural implements like tractor and trolley. Marginal and small farmers have more access to implements like manual/power sprayers, electrical & diesel pump sets and Sprinkler sets/Drip Irrigation Equipment, leveller and fodder chopper. In non-beneficiary households, medium farmers own equipment like tractor and trolley.

Marginal, small and medium farmers from beneficiary households have a significant proportion of ownership of livestock. Small farmers among the beneficiaries have more cows, buffalos,

young stock and goat as compared to other classes. In our sample, 43% of the households for beneficiary and 30% of non-beneficiary groups have pucca houses. 43% households in beneficiary category and 50% of non-beneficiary category have semi-pucca houses. It is observed from our sample that 75% of beneficiary households possess TV while for non-beneficiaries; it is 80%. In the case of mobile phones almost all households have reported to possess it, for both the categories.

It is seen from the sample that beneficiary households cultivated paddy, jowar, bajra, maize, ragi, pulses, groundnut, soyabean, cotton, fruit, vegetables and spices in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy, pulses, maize and soyabean. Average production of paddy is almost similar for beneficiary and non-beneficiary households (40 qtls). Price of the marketed quantity for paddy and groundnut are more for the beneficiary household vis-à-vis non-beneficiary households; while for jowar, maize, soyabean, cotton; average price is higher for non-beneficiary households. For paddy, soyabean, cotton, marginal farmers are getting less price as compared to small farmers. But for jowar, maize, gram; the situation is opposite. Average income from livestock is lower for beneficiary households as compared to non-beneficiary households. Among the households who have livestock, 96% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries, the share is 100%.

Regarding the awareness of RKVY, it is found that in our sample, non-beneficiary households mostly are not aware of RKVY. 70% of the non-beneficiaries have not heard about RKVY. 44% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. In our sample in Telangana, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours; Agriculture/Horticulture Department and Zila Panchayat and Gram Panchayat.

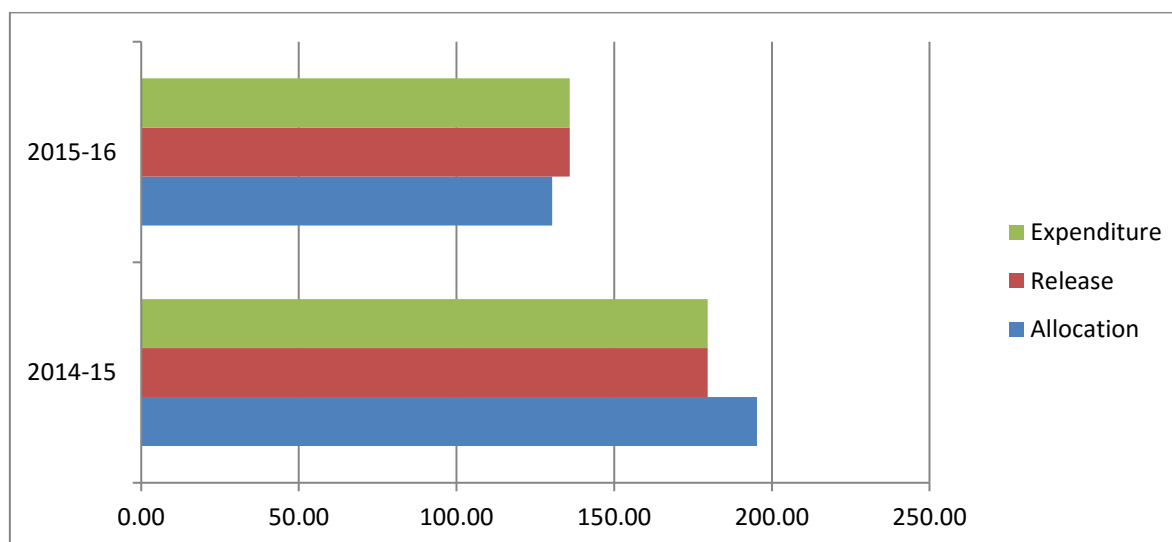
Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. Several crops are distributed to farmers through the RKVY programme. For the project “Distribution of soybean seed in Nizamabad, Medak, Karim Nagar, and Adilabad”, we surveyed the households

of villages Danthepalli and Gurjal, where seeds for soyabean were distributed under this project. Under the project “Hybrid vegetable seed distribution”, seeds were distributed for vegetables like brinjal, Bottle gourd, Tomato, Spinach, Chilly, Ladyfinger etc. in our sample village Porandla and Adraspalli. Under the project “Supply of vegetable mini kits”, seed for crops like tomato, okra, capsicum, beans, Bitter gourd, maize etc. were distributed in villages like Kothapalli and Mandalagudem. Majority of the beneficiaries are marginal farmers. The majority of the farmers have received benefit through price subsidy.

In Telangana, 36% of the farmers have reported that the soil has been tested to know the nature of the soil. Among them, 65% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Telangana, 100% of beneficiary households had undergone training and demonstration. Only 4% of the households found training beneficial and want more training. RKVY programme has facilitated training and demonstration in Telangana for all categories of farmers.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as institutional financing facility not available, Capacity building/technical advice not provided, subsidy paid after purchase while initial payment and lack of monitoring. For non-beneficiary households, major problems are biased towards large land owners, Capacity building/technical advice not provided, information about RKVY programme details not easily available, Prescribed machinery/asset not easily available in the market, eligibility or criteria for availing the subsidy not known, Implementing agencies are located far away and complementary inputs not available. Information about RKVY programme details not easily available is the major problem for marginal farmers in non-beneficiary category. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in increasing production, better price realization, providing financial assistance, improving marketing facilities, building infrastructure and capacity building. However, it appears that RKVY has not been very successful in post-harvesting storage, and procurement.

Figure 24-1: Allocation, Release and Expenditure in RKVY for Telangana (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 24-1: List of selected project name and code

Project Code	Project Name
1	Distribution of soybean seed in Nizamabad, Medak, Karim Nagar, and Adilabad (H)
2	Land preparation package for paddy (IA)
3	Hybrid vegetable seed distribution (H)
4	Permanent Pandals (IA)
5	Female calf feed subsidy programme Sunandini (IA)
6	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms (IA)
7	Construction of scientific godowns (IA)
8	Supply of vegetable mini kits (H)

Table 24-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless			
Marginal	67(56)	18(60)	85(116)
Small	41(34)	9(30)	50(64)
Medium	12(10)	3(10)	15(20)
Large			
Total	120(100)	30(100)	150(200)

Table 24-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.8	3.6	6.5	
Leased-in Land/share cropping (acre)				2.0	2.4	4.0	
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.8	3.9	7.5	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rente d	Electric		22.7	28.7	25.7	
		Diesel		17.7	0.0	0.0	
	Owne d	Electric		30.8	42.6	57.1	
		Diesel		28.8	28.7	17.1	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	

Table 24-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.4	4.2	3.8	
Leased-in Land/share cropping (acre)				1.0	3.0	5.0	
Leased-out Land/share cropping (acre)							
Total operated area (owned+LI-LO) (acre)				1.4	4.0	7.2	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rente d	Electric		27.4	36.0	25.5	
		Diesel		20.5	0.0	0.0	
	Owne d	Electric		31.6	64.0	74.5	
		Diesel		20.5	0.0	0.0	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	

Table 24-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.7	3.6	6.3	
Leased-in Land/share cropping (acre)				2.0	2.4	4.0	
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.7	3.9	7.3	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rente d	Electric		22.3	28.7	26.3	
		Diesel		22.9	0.0	0.0	
	Owne d	Electric		51.7	59.8	76.2	
		Diesel		50.4	43.9	25.8	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	

Table 24-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)				1.4	4.2	3.8	
Leased-in Land/share cropping (acre)				1.0	3.0	5.0	
Leased-out Land/share cropping (acre)							
Total operated area (owned+ LI-LO) (acre)				1.4	4.0	7.2	
Irrigated Area by canal (%)				0.0	0.0	0.0	
Irrigated Area by tube well (%)	Rente d	Electri c		27.4	36.0	25.5	
		Diesel		28.3	0.0	0.0	
	Owne d	Electri c		60.6	100.0	100.0	
		Diesel		41.6	0.0	0.0	
Irrigated Area by Tanks (%)				0.0	0.0	0.0	
Irrigated Area by Wells (%)				0.0	0.0	0.0	
Irrigated Area by others (%)				0.0	0.0	0.0	

Table 24-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	32	28	31
	>15 to 25	18	22	19
	>25 to 40	27	26	27
	>40 to 59	16	16	16
	>59	8	7	7
	All Groups	100	100	100
Education	Illiterate	24	19	23
	Class 1 to 5	21	16	20
	Above Class 5 to 8	12	15	13
	Above Class 8 to 12	35	39	36
	Above Class 12	5	7	5
	Other diploma	1	1	1
	can read and write	0	1	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	3	1	2
	All Groups	100	100	100

Table 24-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	21	20	21
agricultural labour	0	0	0
dairy	0	0	0
casual labour	2	3	2
self-employment (specify)	1	1	1
salaried employment	2	6	3
forestry	0	0	0
Horticulture	0	0	0
Floriculture	0	0	0
Sericulture	0	0	0
Fishing	0	0	0
Aquaculture	0	0	0
Poultry	0	0	0
beekeeping	0	0	0
Student	34	31	33
housewife	24	26	25
non-working	14	10	14
others (no separate income)	0	1	1
All Groups	100	100	100

Table 24-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	62	54
Horticulture	0	0
Floriculture	0	0
Dairy	7	9
Poultry	0	0
Sericulture	0	0
Agricultural Labour	3	0
Casual Labour	13	14
Forestry	0	0
Fishing	0	0
Beekeeping	0	0
Salary	7	16
Other	8	7
Total	100	100

Table 24-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	201158	82267	118892	150900	61733	89167
Horticulture						
Floriculture						
Dairy	27857	10692	17165	53000	13200	39800
Poultry						
Sericulture						
Agricultural Labour	21667		21667			0
Casual Labour	44040	2667	41373	39375		39375
Forestry						
Fishing						
Beekeeping						
Salary	150714	10909	139805	125556	15333	110222
Other	117934	29000	88934	85000	50667	34333
Total	152778	65956	86822	117446	49136	68310

Table 24-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	177667	72575	105092	133900	55000	78900
Horticulture						
Floriculture						
Dairy	20867	8000	12867	24000	10000	14000
Poultry						
Sericulture						
Agricultural Labour	17000		17000			0
Casual Labour	38560	2833	35727	35250		35250
Forestry						
Fishing						
Beekeeping						
Salary	148077	9100	138977	94375	9400	84975
Other	60667	24500	36167	75000	45000	30000
Total	131619	57953	73666	99527	43767	55760

Table 24-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	13	13	13	13	12	13
Horticulture						
Floriculture						
Dairy	34	34	33	121	32	184
Poultry						
Sericulture						
Agricultural Labour	27					
Casual Labour	14	-6	16	12		
Forestry						
Fishing						
Beekeeping						
Salary	2	20	1	33		
Other	94	18	146	13	13	14

Table 24-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	23000	28571	23000	27857
Total rent on machinery (tractor, harvester etc.)	13496	11520	12350	10777
Expenditure on purchased water for irrigation	4525	4200	3950	3500
Expenditure on electricity for irrigation	3911	3396	3644	3124
Expenditure on diesel	11355	10950	10715	10425
Expenditure on other fuels for agriculture	1562	2150	1500	1650
Any other	60954	38263	52454	32927
<i>Total expenditure on agriculture</i>	82329	61583	72211	54890

Table 24-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	3
Total rent on machinery (tractor, harvester etc.)	9	7
Expenditure on purchased water for irrigation	15	20
Expenditure on electricity for irrigation	7	9
Expenditure on diesel	6	5
Expenditure on other fuels for agriculture	4	30
Any other	16	16
<i>Total expenditure on agriculture</i>	14	12

Table 24-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	0	17	83	0
Trolley	0	0	17	83	0
Weeder					
Manual/Power Sprayers	0	41	43	16	0
Threshers	0	0	0	100	0
Drier					
Electrical Pump sets	0	49	38	12	0
Diesel Pump sets	0	67	17	17	0
Sprinkler sets/Drip Irrigation Equipment	0	100	0	0	0
Cane Crusher/Agro-processing Equipment					
Leveller	0	33	0	67	0
Fodder Choppers	0	55	34	11	0
Bullock cart					
Harvest Combine					
Others	0	0	0	100	0

Table 24-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	0	0	100	0
Trolley	0	0	0	100	0
Weeder					
Manual/Power Sprayers	0	48	38	14	0
Threshers					
Drier					
Electrical Pump sets	0	52	36	12	0
Diesel Pump sets	0	100	0	0	0
Sprinkler sets/Drip Irrigation Equipment					
Cane Crusher/Agro-processing Equipment					
Leveller	0	100	0	0	0
Fodder Choppers	0	60	27	13	0
Bullock cart					
Harvest Combine					
Others					

Table 24-14A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

Livestock	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0	57	32	12	0
Buffalo	0	55	34	11	0
Young Stock	0	50	33	17	0
Male Draught	0	60	40	0	0
Sheep	0	0	50	50	0
Goat	0	60	20	20	0
Pig					
Poultry					
Others					

Table 24-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	13	20	15
Pucca	43	30	41
Semi-Pucca	43	50	45
Others	0	0	0
Total	100	100	100

Table 24-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	75	25	100	80	20	100
Telephone	0	100	100	0	100	100
Mobile phone	98	2	100	100	0	100
Cycle	48	53	100	63	37	100
Two wheeler	63	38	100	53	47	100
Four wheeler	0	100	100	0	100	100
Refrigerator	4	96	100	7	93	100
Others (specify)	100	0	100	100	0	100

Table 24-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
Paddy	1.88	1.88	40	33	1524	20235	30013
Wheat							0
Jowar	2.34	2.09	20	18	1303	8344	15235
Bajra	1.00	1.00	14	13	1200	6000	9600
Maize	2.26	2.23	38	37	1339	18400	30696
Ragi	1.54	1.54	7	7	4746	12385	19926
Other pulses	2.50	2.50	12	10	5000	18000	32000
Groundnut	1.80	1.80	13	13	3700	20400	26220
Soyabean	2.09	2.07	10	10	2256	11605	11032
Cotton	1.58	1.58	12	12	4354	20400	31762
Other oilseeds	2.00	2.00	8	8	5600	18000	26800
Fruit 1	2.00	2.00	150	150	1200	50000	130000
Vegetable 1	1.43	1.43	124	124	1264	50278	106304
Vegetable 2	1.38	1.38	89	89	1490	48563	84048
Vegetable 3	1.08	1.08	80	80	1265	33300	67268
Spices 1	1.00	1.00	50	50	2150	48000	59500
Others	3.63	3.38	78	73	1538	49500	61969

Table 24-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivate d Area (in Acres)	Irrigate d Area (in Acres)	Productio n (Qtls)	Markete d Quantity (Qtls)	Price receive d (per qtl)	Total paid- out costs (Rs)	Profitabilit y
Paddy	2.02	2.02	41	34	1456	2122 9	28196
Jowar	1.50	1.50	13	11	1325	5500	9075
Bajra							
Maize	2.18	1.86	38	37	1525	1677 3	39253
Tur	1.67	1.67	11	10	3167	1200 0	18611
Gram	1.67	1.67	8	7	4467	1366 7	18344
Moong	1.50	1.50	7	6	3475	9000	12719
Groundnut	1.00	1.00	8	7	3500	8000	16500
Sunflower							
Soyabean	1.86	1.57	7	7	2300	1092 9	5007
Cotton	1.75	1.75	14	14	4413	2512 5	34995
Vegetable 1	1.17	1.17	87	87	1160	3916 7	61367
vegetable 2	0.88	0.88	80	80	1483	4600 0	72600

Table 24-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
Paddy		1518.1	1534.3	1514.5			1391.8	1532.5	1500.0	
Wheat										
Jowar		1362.5	1250.0	1383.3			1325.0			
Bajra			1200.0							
Maize		1391.1	1296.4	1313.6			1784.5	1231.3	1360.0	
Tur								3166.7		
Gram		5000.0	4766.7	4600.0			4700.0	4000.0		
Masur							3850.0		3100.0	
Other pulses			5000.0							
Groundnut			3825.0	3200.0				3500.0		
Sunflower										
Soyabean		2061.1	2372.9	2150.0			2160.0	2300.0	3000.0	
Mustard										
Cotton		3916.7	4433.3	4562.5			4500.0	4383.3		
Other oilseeds				5600.0						

Table 24-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
Paddy		1403.2	1457.1	1441.4			1206.4	1467.5	1425.0	
Jowar		1287.5	1205.6	1323.3			1275.0			
Bajra			1150.0							
Maize		1320.4	1231.1	1254.5			1248.2	1170.0	1313.3	
Tur								3200.0		
Gram		4500.0	4622.2	4450.0			4750.0	4500.0		
Masur										
Moong							4000.0		3000.0	
Other pulses			4500.0							
Groundnut			3700.0	3000.0				3200.0		
Soyabean		2322.2	2475.0	2140.0			2590.0	2200.0	2800.0	
Mustard										
Cotton		3650.0	4091.7	4137.5			4100.0	4291.7		
Other oilseeds				5000.0						

Table 24-21: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average Annual income (Rs)	% of Total Income	Average Annual income (Rs)
Milk		96	2833.3	100	8833.3
Others		4	125.0	0	0.0
TOTAL		100	2958.3	100	8833.3

Table 24-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

<i>Items</i>	Difference in the average income of beneficiaries over non-beneficiaries (Rs)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	-68	-44	27	121
Others			50	
TOTAL	-67	-42	28	121

Table 24-21: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about RKVY?	100	0	100	30	70	100	86	14	100
Did you receive any benefits from RKVY in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from RKVY in the last five years excluding this year?	44	56	100	0	100	100	35	65	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	23	77	100	10	90	100	21	79	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	35	65	100	17	83	100	31	69	100

Table 24-22: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbours	11	89
News Paper	0	0
Agriculture/Horticulture Department	60	11
SAU	0	0
KVK	0	0
Input Suppliers	4	0
TV/Radio	0	0
Agri. Exhibitions	2	0
ZP/GP	23	0
Other sources	0	0
Total	100	100

Table 28-23A: Distribution of farmers in crop development (in 2016-17) in Telangana for beneficiaries

		Crop 1	Crop 2	Fertilizer s	Micro nutrient s	Bio- fertilizer s and bio- control agents	Pesticide s	Other s
Number of Benefici aries (%)	Landless	0	0					
	Marginal	54	71					
	Small	36	25					
	Medium	10	4					
	Large	0	0					
	Total	100	100					
Number of Non- Benefici aries (%)	Landless	0	0	0	0	0	0	0
	Marginal	66	54	57	57	57	57	57
	Small	26	35	33	33	33	33	33
	Medium	9	11	10	10	10	10	10
	Large	0	0	0	0	0	0	0
	Total	100	100	100	100	100	100	100

Table 28-23B: Details of Interventions made under crop development (in 2016-17) in Telangana for beneficiaries

		Seeds/planting materials (specify)	
		Crop1____	Crop2_____
No of beneficiary of RKVY		115	24
Average actual cost of these materials (Rs)		2371	20739
Whether Material or subsidy received from RKVY (%)			
	Material	35	0
	Subsidy	65	100
If Material, quantity supplied (Kg)			

If subsidy, then	quantity of subsidized input (Kg) (average)	0	0
	Unit price (average)	0	0
	Price paid by beneficiary (average)	0	0
	Market price (average)	0	0
	Amount of subsidy (average)	0	0
If subsidy, Nature of subsidy (%)			
	Price subsidy	0	0
	DBT	0	0
If DBT, the total amount received as DBT (Rs)		0	0
If DBT, average number of days taken to receive the amount in your bank account?		0	0
Area in acres		0.82	9.19

Table 24-24A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?			Soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless						
Marginal	18	82	100	42	58	100
Small	51	49	100	62	38	100
Medium	83	17	100	100	0	100
Large						
Total	36	64	100	65	35	100
Non-beneficiary						
Landless						
Marginal	6	94	100	100	0	100
Small	11	89	100	100	0	100
Medium						
Large						
Total	7	93	100	100	0	100

Table 24-24B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Do not know
Beneficiaries			
Landless	100	0	0
Marginal	100	0	0
Small	100	0	0
Medium			
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium			
Large			
Total	100	0	0

Table 24-25: Information regarding training and demonstration under RKVY (% of households) (2016-17)

			Type of training					
	Number of Beneficiaries	% of beneficiary households undergone training	Demonstration	Field Visit	Kris hi Mela	Others	% of households found training beneficial	% of households who want more training
Landless	0	0	0	0	0	0	0	0
Marginal	67	100	9	100	28	72	3	0
Small	41	100	5	100	29	71	2	0
Medium	12	100	0	100	58	42	17	#DIV/0!
Large	0	0	0	0	0	0	0	0
Total	120	100	7	100	32	68	4	0

Table 24-26A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		46	49	58		48
Contact details of the department which pay subsidy not available		25	24	0		23
Eligibility or criteria for availing the subsidy not known		52	61	50		55
Procedure for the subsidy very tedious		45	49	50		47
No of documents required for availing subsidy are too many		51	49	50		50
Subsidy paid after purchase while initial payment remains the highest problem		58	61	50		58
Delay in transfer		37	27	25		33
Prescribed machinery/asset not easily available in the market		42	46	42		43
Institutional financing facility not available		60	63	75		63
Capacity building/technical advice not provided		57	71	50		61
Long time gap between the purchase and receiving the subsidy amount		52	34	42		45
Biased towards large land owners		25	49	42		35
Poor quality of materials/machinery are supplied		34	46	50		40
Implementing agencies are located far away		51	44	50		48
Incidence of bribery		43	56	17		45
Lack of monitoring		66	49	33		57
Complementary inputs not available		36	44	50		40
Restricted Choice		48	51	67		51
Lack of marketing support		46	51	33		47
Any other		0	0	0		0

Table 24-26B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available		83	67	67		
Contact details of the department which pay subsidy not available		67	78	67		
Eligibility or criteria for availing the subsidy not known		72	78	67		
Procedure for the subsidy very tedious		61	89	67		
No of documents required for availing subsidy are too many		61	44	100		
Subsidy paid after purchase while initial payment remains the highest problem		72	78	33		
Delay in transfer		72	56	100		
Prescribed machinery/asset not easily available in the market		61	100	67		
Institutional financing facility not available		61	67	67		
Capacity building/technical advice not provided		78	78	100		
Long time gap between the purchase and receiving the subsidy amount		67	56	67		
Biased towards large land owners		78	78	100		
Poor quality of materials/machinery are supplied		50	78	67		
Implementing agencies are located far away		72	78	67		
Incidence of bribery		56	67	67		
Lack of monitoring		72	67	33		
Complementary inputs not available		72	67	100		
Restricted Choice		78	56	67		
Lack of marketing support		67	78	0		
Any other		0	0	0		

Table 24-27A: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless										
Marginal	44	35	75	4	47	32	65	14	65	14
Small	36	46	72	10	58	24	72	10	64	18
Medium	47	33	80	0	47	33	73	7	67	13
Large										
Total	41	39	75	5	51	29	68	12	65	15

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 24- 27B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless								
Marginal	45	34	40	39	26	53	0	0
Small	52	30	50	34	18	64	0	0
Medium	53	7	60	13	27	53	0	0
Large								
Total	48	30	45	35	23	57	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 24-28: Details of the projects

Sl. No.	Project Name	Implementing agency
04	Permanent Pandals (IA)	Department of Horticulture & Public Gardens, Nampally, Hyderabad
06	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms (IA)	District Fisheries Officers in Telangana State , Hyderabad
07	Construction of scientific godowns (IA)	Agricultural Marketing Department, B.R.K.R. Bhavan 1st floor, Tankbund, Hyderabad

Table 24-29: General Information regarding the implementing agency for construction project.

Issues\ Projects	Permanent Pandals	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms	Construction of scientific godowns
Type of construction	Permanent Pandal	Construction of New Fish seed farm	Warehouse
New construction/Improvement of an older construction	New	New	New
Awareness about DAP	Yes	Yes	Yes
Included in DAP	Yes	Yes	
Project proposed by	Implementing Agency	Implementing Agency	Nodal agency
Level at which the project was proposed	State	District	Block

Table 24-30: Fund Flow in the project

Issues\ Projects	Permanent Pandals	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms	Construction of scientific godowns
Funds required for the project in 2016-17	Rs.16.12 crores	Rs. 60.00 Lakhs	Rs.442.50 Crores
Funds approved for the project in 2016-17	Rs.16.12 crores	Rs. 60.00 Lakhs	Rs.442.50 Crores (Central 265.50, State 177.00 crores)
Funds released for the project in 2016-17	An amount of Rs.8.00 crores were released towards implementing RKVY AAP 2016-17 (all components)	not released	132.74 (central)
Number of times funding released for the project in 2016-17	1		1
Major problems in the release of funds	Delayed release, Reduced amount and Uncertainty in amount released	Uncertainty in amount released	Delayed release

Table 24-31: Physical Capacity of the projects

Issues\ Projects		Permanent Pandals	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms	Construction of scientific godowns
Required physical capacity of the selected work. (in numbers)		645 ha	new project	
Existing physical capacity excluding the current project.		2287.99 ha		
Capacity of current project. (numbers)		645 ha		
Number of phases in the project		Single		
In case of multiple phases, ways for management of funds		Provisions for fund in phased manner in RKVY	Provisions for fund in phased manner in RKVY	Provisions for fund in phased manner in RKVY
Fund management across the phases	Phase 1	No response	94	3
	Phase 2	No response	112	2
	Phase 3	No response	44	
	Phase 4	No response	-	-

Table 24-32: Tendering & Maintenance regarding the project

Issues\ Projects	Permanent Pandals	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms	Construction of scientific godowns
Whether tender was called for execution of the work	No	No	Yes
e-tender issued			No
Opinion: e-tendering increases efficiency of tendering			Yes
Opinion: e-tendering increases transparency		Yes	Yes
Opinion: e-tendering has increased number and quality of responses from vendors		Yes	Yes
Number of days given to respond to tenders			15
Agency responsible for the maintenance of the constructed project in future years	Concerned Farmer (beneficiary)		
If same agency, whether any financial provision is there in the project for maintenance in future	Yes	No	No

Table 24-33: Benefits and Challenges regarding the projects

Issues\ Projects	Permanent Pandals	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms	Construction of scientific godowns
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries	Warehouse, Marketing Sheds, Cold-storage, Seed-bank, Soil-testing labs, Research labs, Demonstration unit, Training Centre, Rural roads, Extension / training services Developing co-operatives, FPO s, WUA s , Rural electrification, Stable power supply		
Project needs enhancement / improvement	Yes	Yes	No
Problems associated with the existing project	Financial	Financial	
Opinion: the project will complete in stipulated time	Yes	No	Yes
Reasons for delay in project		Shortage and delay of funds	

Table 24-34: Convergence with other projects

Issues\ Projects	Permanent Pandals	Provision of operational equipment and inputs for fish seed production and rearing in government fish seed farms	Construction of scientific godowns
Whether any convergence with other schemes	No	No	No

25 TRIPURA

Tripura is in eastern part of India with the geographic area of 10,49,169 hectares. The state is surrounded by neighbouring state Bangladesh from north, south and west. Forest area is over 60% of its land use statistics leaving only 27% land for agricultural cultivation. A large part of the land is hilly, with altitudes varying from 15 to 940 metres above sea level, but majority of the population lives in the plains. Agriculture sector is one of the key sectors in Tripura. More than 42% of its population now directly depends on agriculture & allied activities. Gross cropped area in Tripura is 4,85,677 hectare in 2015-16 (Economic Review of Tripura 2015-16). The average size of land-holding is 0.49 hectares in Tripura in 2010-11. Small and marginal farmers constitute about 96% of the total farmers in the state. Agriculture contributes to 26% of GSDP in the state in 2014-15. Potential crops are rice, pulses, Oilseeds, Potato, maize, Sugarcane etc. among others.

RKVY was started in 2007-08 in Tripura. Under RKVY scheme, Central Government has allocated Rs. 34.41 Crore for Tripura, for which 100% funds has been released and expenditure of Rs. 33.58 crore has been incurred in Tripura during 2016-17 till 31st July 2017. Tripura proposed 34 projects amounting to Rs. 63.4 crores in 2016-17. Among different sectors, animal husbandry and fisheries are given importance in terms of number of projects among the very small-sized projects (cost < 1 crore). In this category, there are 26 projects proposed. In the category small size category (cost 1 to 5 crore), priority sector is horticulture. In the medium-size category (cost 5 to 10 crore), important sector is information technology. For large projects with cost 10 to 25 crore, priority area is crop development. No project is proposed with cost more than 25 crore. So small projects are dominated by animal husbandry and fisheries and large projects are by crop development 2016-17. In aggregate, up to the date the data was accessed, 34 projects are pointed out which needs funds from RKVY in 2016-17, among which crop development (201 crore) is given highest priority in terms of cost, while in terms of number of projects, animal husbandry is given priority. Project with highest average cost is proposed for crop development. Figure 25-1 shows allocation, release and expenditure in RKVY in Tripura over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Tripura. Due to small geographical region, number of projects ongoing in Tripura is also less as compared to other states of India. So, we have selected one project for Tripura and analysed the performance of RKVY by collecting primary information. List of selected projects for Tripura is given below (Table 25-1).

25.1 RESULTS FROM PRIMARY SURVEY

25.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Tripura, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analysed.

In our sample, the majority of the beneficiary households (75% of beneficiary households) are marginal farmers and 25% are small farmers. In the non-beneficiary households, 50% are marginal and 50% are small farmers (Table 25-2).

25.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for kharif 2016-17, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tube well (electric and diesel) for irrigation in kharif season (Table 25-3A & 25-3B).

We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households (Table 25-4A & 25-4B).

Households depend on tube well (electric and diesel) for irrigation in kharif season; some of it is rented.

In our sample, a total of 40 households are beneficiaries and 10 are non-beneficiaries. A total number of the population covered is 223, among them, 181 people belong to beneficiary households and 42 people belong to non-beneficiary households (Table 25-5). Among them in beneficiary households, 21% of the population is below 15 age group, while 10.5% are in above 60 age group. Rest 68.5% population in beneficiary households is in working-age-group. In non-beneficiary households, 19% of the population is below 15 age-groups, while 9.5 percent are in above 60 age group. Rest 71.4% population in non-beneficiary households is in working-age-group. Taking both the groups into consideration, 69.1% population is in working-age group. On the education front, 17.7% of the population in beneficiary group and 21.4% of non-beneficiary group is illiterate. 77.3% population in beneficiary households and 69% population in non-beneficiary households have attended school (class 1 to 12); while 2.8% population in beneficiary households and 7.1% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour, self-employed or salaried employees or are engaged in dairy and beekeeping (Table 25-6).

In the sample of our study, 39% of the beneficiary households have reported income from farming. For non-beneficiary households, 48% of households have reported farming as an occupation. 15% of beneficiary households and 19% of non-beneficiary households have reported income from dairy. More households have reported income for beneficiary households from casual labour as compared to the non-beneficiary households (Table 25-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 61067 in Tripura while the same for non-beneficiary households is Rs. 112524 in 2016-17 (Table 25-8). Average annual income for beneficiary households was Rs. 53624 in 2015-16 while it was Rs. 98705 for non-beneficiary households in the same year. Average income for non-beneficiary households in Tripura are higher than beneficiary households and both have increased from 2015-16 to 2016-17. Major sources of income are farming and dairy apart from salary and casual labour. For farming, the average income of non-beneficiary households is higher than

beneficiaries; so is the average cost. Average income from salary is also higher for non-beneficiary households (Table 25-8).

Table 25-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 72263 which is lower than non-beneficiaries (Rs. 104500); so is the average cost (Rs. 32088 and Rs. 44600 respectively).

In terms of percentage change in income (Table 25-10), average income has increased by 12% in farming both for beneficiary and non-beneficiary households. However, the average cost has increased more for non-beneficiary households in farming than beneficiary households.

25.1.1.2 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 25-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation is higher for beneficiaries than non-beneficiaries.

Table 25-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in purchase of water for irrigation for beneficiary households. Expenditure on electricity for irrigation for both beneficiary and non-beneficiary households has also increased, though the former is higher than the later. Opposite trend is followed for expenditure in diesel.

25.1.1.3 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Tripura, for beneficiary households, marginal farmers do not own large agricultural implements like tractor, trolley and leveller. Marginal farmers have more access to implements like manual/power sprayers, electrical & diesel pump sets and fodder chopper (Table 25-13A). Small farmers have equipment like tractor, trolley, manual/power sprayers,

diesel pump sets, leveller and fodder chopper. In non-beneficiary households, farmers own equipment like manual/power sprayers, electric pump sets and fodder choppers (Table 25-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 25-14B). They own cows, buffalo, pig and poultry. For both the categories, cows are the mostly reared by the households, among other livestock animals.

In our sample, 45% of the households for beneficiary and 10% of non-beneficiary groups have pucca houses (Table 25-15). 38% households in beneficiary category and 60% in the non-beneficiary category have semi-pucca houses.

It is observed from our sample that 58% of beneficiary households possess TV while for non-beneficiaries, it is 80% (Table 25-16). In the case of mobile phones, 100% of households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles is 100%. Some households have two-wheelers, four-wheelers and refrigerator.

25.1.1.4 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that both the beneficiary and non-beneficiary households cultivated paddy, wheat, maize, gram, masur, moong, mustard and vegetables in the majority of the cultivated area (Table 25-17 and Table 25-18). Average production of paddy is much higher for non-beneficiary households (42.7 qtls) as compared to beneficiary households (31.8 qtls). But the price of the marketed quantity for paddy and wheat is higher for the beneficiary household vis-à-vis non-beneficiary households; while for gram, moong and mustard; average price is higher for non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 25-19). Unlike other states, marginal farmers are getting higher price than small farmers for paddy, masur, mustard for beneficiary households (Table 25-20). For non-beneficiary households, small farmers are getting higher price than marginal farmers, for paddy and mustard.

In 2015-16 also, it is seen that price received by marginal farmers is higher than small farmers for paddy, masur and mustard, both for beneficiary and non-beneficiary households.

25.1.1.5 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Tripura, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 94% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 99% (Table 25-21). Apart from that, some income comes from the selling eggs and animal sale.

The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries as compared to beneficiaries both in 2016-17 and 2015-16. The situation is opposite for animal sale. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for non-beneficiaries (Table 25-22).

25.1.1.6 AWARENESS REGARDING RKVY PROGRAMME

Regarding the awareness of RKVY, it is found that in our sample, households in Tripura are quite aware of the programme. 100% of the beneficiaries and 90% of the non-beneficiaries have heard about RKVY. 25% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 10% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 28% of the beneficiary households and 30% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17 (Table 25-23).

In our sample in Tripura, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours, Agriculture/Horticulture Department and Zila/Gram Panchayat (Table 25-24). For non-beneficiary households, 67% of the households received information from friends and neighbours.

25.1.1.7 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY (Table 28-23). In the project “Achieving self-sufficiency through popularization of hybrids through SRI (H)”, crops like paddy, gram, masur, potato and wheat were provided to the households (Table 25-25). The majority of the farmers have received benefit through price subsidy. Beneficiaries have reported that these implements have helped in solving labour problems and reduction in cost of agriculture. 14% of the cost of the tiller is provided by RKVY in Tripura (Table 25-26).

In Tripura, 38% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil (Table 25-27A). Among them, 100% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 25-27B).

Within our sample in Tripura, 70% of beneficiary households had undergone training and 100% had undergone demonstration (Table 25-28). 64% of the households found training beneficial and want more training.

It is also found in our study that 98% of the beneficiary and 100% of the non-beneficiary households have mobile phones, among them 90% of the households (in both categories) receives text messages. Only 48% of the beneficiary households and none of the non-beneficiary households have reported to receive agriculture-related text messages (Table 25-29).

25.1.1.8 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned their major problem as information about RKVY programme details not easily available. Other problems mentioned by them include Procedure for the subsidy very tedious, No of documents required for availing subsidy are too many, subsidy paid after purchase while initial payment remains the highest problem, delay in transfer, biased towards large land owners, Long time gap between the

purchase and receiving the subsidy amount and lack of marketing support etc. Lack of monitoring and unavailability of information is specifically highlighted by small farmers. Apart from these, non-beneficiary households mentioned Capacity building/technical advice not provided, Incidence of bribery, institutional financing facility not available and restricted choice as major impediments (Table 25-30A and Table 25-30B).

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in providing financial assistance, building infrastructure, increasing production. However, it appears that RKVY has not been very successful in procurement in the state (Table 25-31A & 25-31B).

25.2 CONCLUSION

RKVY was started in 2007-08 in Tripura. Under RKVY scheme, Central Government has allocated Rs. 34.41 Crore for Tripura, for which 100% funds has been released and expenditure of Rs. 33.58 crore has been incurred in Tripura during 2016-17 till 31st July 2017. Tripura proposed 34 projects amounting to Rs. 63.4 Crores in 2016-17. Small projects are dominated by animal husbandry and fisheries and large projects are by crop development in the proposals for projects for 2016-17. Project with highest average cost is proposed for crop development.

This study analyses performance of RKVY for the year 2016-17 in Tripura. Due to small geographical region, number of projects ongoing in Tripura is also less as compared to other states of India. So, we have selected one project for Tripura and analysed the performance of RKVY by collecting primary information. In our sample in Tripura, total 50 households are considered for the survey, among which 40 households are beneficiaries of RKVY and 10 are non-beneficiaries. In our sample, the majority of the beneficiary households (75% of beneficiary households) are marginal farmers and 25% are small farmers. In the non-beneficiary households, 50% are marginal and 50% are small farmers. There are no landless, medium and large farmers in the sample. In our sample, for kharif 2016-17, the average area of owned land is higher for marginal farmers among the beneficiary households as compared to non-beneficiary households. Households depend on tube well (electric and diesel) for irrigation in kharif season.

In our sample for Tripura, a total of 40 households are beneficiaries and 10 are non-beneficiaries. A total number of the population covered is 223, among them, 181 people belong to beneficiary households and 42 people belong to non-beneficiary households. Among them in beneficiary households, 21% of the population is below 15 age group, while 10.5% are in above 60 age group. Rest 68.5% population in beneficiary households is in working-age-group. In non-beneficiary households, 19% of the population is below 15 age-groups, while 9.5 percent are in above 60 age group. On the education front, 17.7% of the population in beneficiary group and 21.4% of non-beneficiary group is illiterate. 77.3% population in beneficiary households and 69% population in non-beneficiary households have attended school (class 1 to 12); while 2.8% population in beneficiary households and 7.1% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour, self-employed or salaried employees or are engaged in dairy and beekeeping. In the sample of our study, 39% of the beneficiary households have reported income from farming. For non-beneficiary households, 48% of households have reported farming as an occupation. 15% of beneficiary households and 19% of non-beneficiary households have reported income from dairy. Average income for non-beneficiary households in Tripura are higher than beneficiary households but both have increased from 2015-16 to 2016-17.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation is higher for beneficiaries than non-beneficiaries.

In our sample in Tripura, for beneficiary households, marginal farmers have more access to implements like manual/power sprayers, electrical & diesel pump sets and fodder chopper. Small farmers have equipment like tractor, trolley, manual/power sprayers, diesel pump sets, leveller and fodder chopper. In non-beneficiary households, farmers own equipment like manual/power sprayers, electric pump sets and fodder choppers. Marginal and small farmers

from beneficiary households have a significant proportion of ownership of livestock. They own cows, buffalo, pig and poultry. For both the categories, cows are the mostly reared by the households, among other livestock animals.

In our sample, 45% of the households for beneficiary and 10% of non-beneficiary groups have pucca houses. 38% households in beneficiary category and 60% in the non-beneficiary category have semi-pucca houses. It is observed from our sample that 58% of beneficiary households possess TV while for non-beneficiaries, it is 80%. In the case of mobile phones, 100% of households have reported to possess it, for both the categories.

It is seen from the sample that both the beneficiary and non-beneficiary households cultivated paddy, wheat, maize, gram, masur, moong, mustard and vegetables in the majority of the cultivated area. Average production of paddy is much higher for non-beneficiary households (42.7 qtls) as compared to beneficiary households (31.8 qtls). But the price of the marketed quantity for paddy and wheat is higher for the beneficiary household vis-à-vis non-beneficiary households; while for gram, moong and mustard; average price is higher for non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. Unlike other states, marginal farmers are getting higher price than small farmers for paddy, masur, mustard for beneficiary households. For non-beneficiary households, small farmers are getting higher price than marginal farmers, for paddy and mustard.

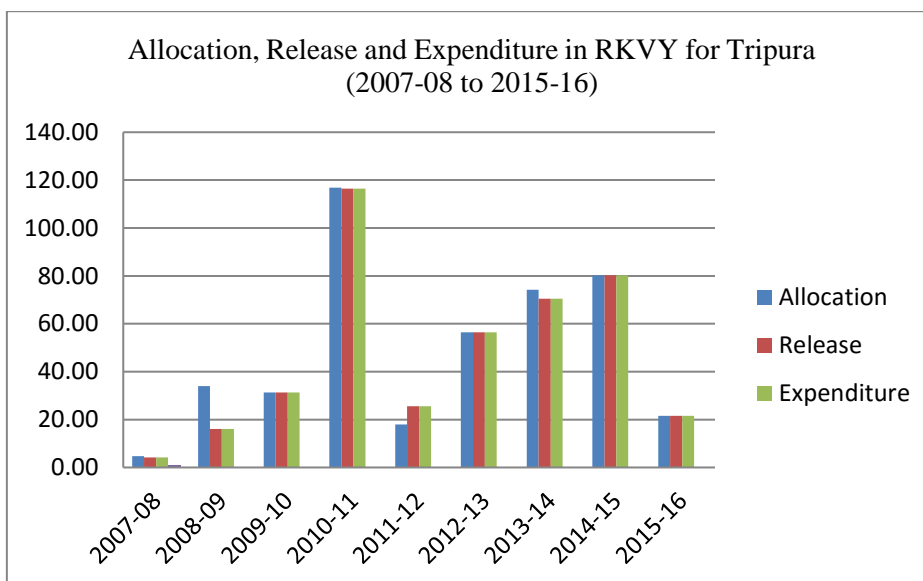
Apart from cultivation, the households earn income from livestock. In our sample for Tripura, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, large share of income from livestock comes from milk for both beneficiary and non-beneficiary households. The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries as compared to beneficiaries both in 2016-17 and 2015-16. Regarding the awareness of RKVY, it is found that in our sample, households in Tripura are quite aware of the programme. 100% of the beneficiaries and 90% of the non-beneficiaries have heard about

RKVY. Majority of the beneficiary households had received information regarding RKVY from friends and neighbours, Agriculture/Horticulture Department and Zila/Gram Panchayat.

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. In the project “Achieving self-sufficiency through popularization of hybrids through SRI (H)”, crops like paddy, gram, masur, potato and wheat were provided to the households. The majority of the farmers have received benefit through price subsidy. Beneficiaries have reported that these implements have helped in solving labour problems and reduction in cost of agriculture. 14% of the cost of the tiller is provided by RKVY in Tripura. In Tripura, 38% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil. Among them, 100% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Tripura, 70% of beneficiary households had undergone training and 100% had undergone demonstration. 64% of the households found training beneficial and want more training.

In our study, it is found that beneficiary households have mentioned their major problem as information about RKVY programme details not easily available. Other problems mentioned by them include Procedure for the subsidy very tedious, No of documents required for availing subsidy are too many, subsidy paid after purchase while initial payment remains the highest problem, delay in transfer, biased towards large land owners, Long time gap between the purchase and receiving the subsidy amount and lack of marketing support etc. Lack of monitoring and unavailability of information is specifically highlighted by small farmers. Apart from these, non-beneficiary households mentioned Capacity building/technical advice not provided, Incidence of bribery, institutional financing facility not available and restricted choice as major impediments. According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in providing financial assistance, building infrastructure, increasing production. However, it appears that RKVY has not been very successful in procurement in the state.

Figure 25-1: Allocation, Release and Expenditure in RKVY for Tripura (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 25-1: List of selected project name and code

Project Code	Project Name
01	Achieving self-sufficiency through popularization of hybrids through SRI (H)

Table 25-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	(0)	(0)	(0)
Marginal	30(75)	5(50)	35(70)
Small	10(25)	5(50)	15(30)
Medium	(0)	(0)	(0)
Large	(0)	(0)	(0)
Total	40(100)	10(100)	50(100)

Table 25-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			0.0	1.4	3.4	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.5	1.5	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO) (acre)			0.0	1.4	3.5	0.0	0.0
Irrigated Area by canal (%)			-	0.0	0.0	-	-
Irrigated Area by tube well (%)	Rented	Electric	-	0.0	0.0	-	-
		Diesel	-	25.0	0.0	-	-
	Owned	Electric	-	25.0	0.0	-	-
		Diesel	-	50.0	100.0	-	-
Irrigated Area by Tanks (%)			-	0.0	0.0	-	-
Irrigated Area by Wells (%)			-	0.0	0.0	-	-
Irrigated Area by others (%)			-	0.0	0.0	-	-

Table 25-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.0	2.2	3.2	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+ LI-LO) (acre)			0.0	2.2	3.2	0.0	0.0
Irrigated Area by canal (%)			-	-	0.0	-	-
Irrigated Area by tube well (%)	Rente d	Electric	-	-	0.0	-	-
		Diesel	-	-	0.0	-	-
	Owne d	Electric	-	-	0.0	-	-
		Diesel	-	-	100. 0	-	-
Irrigated Area by Tanks (%)			-	-	0.0	-	-
Irrigated Area by Wells (%)			-	-	0.0	-	-
Irrigated Area by others (%)			-	-	0.0	-	-

Table 25-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.0	1.2	3.4	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.5	1.5	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+ LI-LO) (acre)			0.0	1.3	3.5	0.0	0.0
Irrigated Area by canal (%)			-	0.0	0.0	-	-
Irrigated Area by tube well (%)	Rented	Electric	-	0.0	0.0	-	-
		Diesel	-	25.0	46.7	-	-
	Owned	Electric	-	25.0	0.0	-	-
		Diesel	-	50.0	53.3	-	-
Irrigated Area by Tanks (%)			-	0.0	0.0	-	-
Irrigated Area by Wells (%)			-	0.0	0.0	-	-
Irrigated Area by others (%)			-	0.0	0.0	-	-

Table 25-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.0	2.0	3.0	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO) (acre)			0.0	2.0	3.0	0.0	0.0
Irrigated Area by canal (%)			-	0.0	0.0	-	-
Irrigated Area by tube well (%)	Rente d	Electri c	-	0.0	0.0	-	-
		Diesel	-	0.0	0.0	-	-
	Owne d	Electri c	-	100.0	50.0	-	-
		Diesel	-	0.0	50.0	-	-
Irrigated Area by Tanks (%)			-	0.0	0.0	-	-
Irrigated Area by Wells (%)			-	0.0	0.0	-	-
Irrigated Area by others (%)			-	0.0	0.0	-	-

Table 25-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	21.0	19.0	20.6
	>15 to 25	17.1	16.7	17.0
	>25 to 40	28.2	23.8	27.4
	>40 to 59	23.2	31.0	24.7
	>59	10.5	9.5	10.3
	All Groups	100.0	100.0	100.0
Education	Illiterate	17.7	21.4	18.4
	Class 1 to 5	24.3	19.0	23.3
	Above Class 5 to 8	14.9	11.9	14.3
	Above Class 8 to 12	38.1	38.1	38.1
	Above Class 12	2.8	7.1	3.6
	Other diploma	0.0	0.0	0.0
	can read and write	1.7	2.4	1.8
	can read only	0.0	0.0	0.0
	can count only	0.0	0.0	0.0
	could not attend class 1	0.6	0.0	0.4
	All Groups	100.0	100.0	100.0

Table 25-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	16.6	19.0	17.0
agricultural labour	0.0	0.0	0.0
dairy	1.1	0.0	0.9
casual labour	8.3	4.8	7.6
self-employment (specify)	3.9	7.1	4.5
salaried employment	2.8	7.1	3.6
forestry	0.0	0.0	0.0
Horticulture	0.0	0.0	0.0
Floriculture	0.0	0.0	0.0
Sericulture	0.0	0.0	0.0
Fishing	0.0	0.0	0.0
Aquaculture	0.0	0.0	0.0
Poultry	0.0	0.0	0.0
beekeeping	0.6	0.0	0.4
Student	23.2	19.0	22.4
housewife	27.6	26.2	27.4
non-working	16.0	16.7	16.1
others (no separate income)	0.0	0.0	0.0
All Groups	100.0	100.0	100.0

Source of income of sample households

Table 25-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	39	48
Horticulture	0	0
Floriculture	0	0
Dairy	15	19
Poultry	7	5
Sericulture	0	0
Agricultural Labour	0	0
Casual Labour	23	10
Forestry	0	0
Fishing	0	0
Beekeeping	0	0
Salary	5	10
Other	10	10
Total	100	100

Table 25-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	81197	35588	45610	117500	50100	67400
Horticulture						
Floriculture						
Dairy	32267	14733	17533	45000	18250	26750
Poultry	2143	550	1593	1000		
Sericulture						
Agricultural Labour						
Casual Labour	53864					
Forestry						
Fishing						
Beekeeping						
Salary	83600	11667	71933	246000	30000	216000
Other	73600	33950	39650	200000	85000	115000
Total	61067	28859	32208	112524	44667	67857

Table 25-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	72263	32088	40176	104500	44600	59900
Horticulture						
Floriculture						
Dairy	23441	11125	12316	36750	15750	21000
Poultry	1783	450	1333	800		
Sericulture						
Agricultural Labour						
Casual Labour	47682			50000		
Forestry						
Fishing						
Beekeeping						
Salary	73800	10333	63467	210000	25000	185000
Other	68200	29300	38900	180000	80000	100000
Total	53624	25161	28464	98705	39944	58760

Table 25-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%)
(2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	12	11	14	12	12	13
Horticulture						
Floriculture						
Dairy	38	32	42	22	16	27
Poultry	20	22	19	25		
Sericulture						
Agricultural Labour						
Casual Labour	13			15		
Forestry						
Fishing						
Beekeeping						
Salary	13	13	13	17	20	17
Other	8	16	2	11	6	15

Table 25-11: Average annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	650	0	650	0
Total rent on machinery (tractor, harvester etc.)	7878	10350	7075	9480
Expenditure on purchased water for irrigation	208	0	168	0
Expenditure on electricity for irrigation	63	450	53	400
Expenditure on diesel	1438	1000	1303	800
Expenditure on other fuels for agriculture	225	0	173	0
Any other	25085	38400	22683	33920
<i>Total expenditure on agriculture</i>	35545	50200	32103	44600

Table 25-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	
Total rent on machinery (tractor, harvester etc.)	11	9
Expenditure on purchased water for irrigation	24	
Expenditure on electricity for irrigation	19	13
Expenditure on diesel	10	25
Expenditure on other fuels for agriculture	30	
Any other	11	13
<i>Total expenditure on agriculture</i>	11	13

Table 25-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	-	0	3	-	-
Trolley	-	0	3	-	-
Weeder	-	0	0	-	-
Manual/Power Sprayers	-	40	34	-	-
Threshers	-	0	0	-	-
Drier	-	0	0	-	-
Electrical Pump sets	-	5	0	-	-
Diesel Pump sets	-	5	24	-	-
Sprinkler sets/Drip Irrigation Equipment	-	0	0	-	-
Cane Crusher/Agro-processing Equipment	-	0	0	-	-
Leveller	-	0	3	-	-
Fodder Choppers	-	50	28	-	-
Bullock cart	-	0	0	-	-
Harvest Combine	-	0	0	-	-
Others	-	0	3	-	-

Table 25-13B: Asset ownership by non-beneficiary households (% of number of implements)
(2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	-	0	0	-	-
Trolley	-	0	0	-	-
Weeder	-	0	0	-	-
Manual/Power Sprayers	-	43	36	-	-
Threshers	-	0	0	-	-
Drier	-	0	0	-	-
Electrical Pump sets	-	14	9	-	-
Diesel Pump sets	-	0	18	-	-
Sprinkler sets/Drip Irrigation Equipment	-	0	0	-	-
Cane Crusher/Agro-processing Equipment	-	0	0	-	-
Leveller	-	0	0	-	-
Fodder Choppers	-	43	36	-	-
Bullock cart	-	0	0	-	-
Harvest Combine	-	0	0	-	-
Others	-	0	0	-	-

Table 25-14A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	-	50	37	-	-
Buffalo	-	5	5	-	-
Young Stock	-	28	21	-	-
Male Draught	-	0	0	-	-
Sheep	-	0	0	-	-
Tripurat	-	0	5	-	-
Pig	-	3	5	-	-
Poultry	-	8	11	-	-
Others	-	8	16	-	-

Table 25-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	0	0	0
Pucca	45	10	38
Semi-Pucca	38	60	42
Others	18	30	20
Total	100	100	100

Table 25-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	58	43	100	80	20	100
Telephone	0	100	100	0	100	100
Mobile phone	100	0	100	100	0	100
Cycle	100	0	100	100	0	100
Two wheeler	30	70	100	60	40	100
Four wheeler	3	98	100	0	100	100
Refrigerator	13	88	100	20	80	100

Table 25-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	1.92	2.60	31.83	24.84	1368.92	15612.50	18388.49
wheat	1.00	0.00	13.00	12.00	1850.00	14000.00	8200.00
maize	0.75	0.00	11.00	10.00	1100.00	5500.00	5500.00
gram	0.94	0.50	5.50	5.33	4433.33	10422.22	13222.22
masur	0.83	0.50	4.42	4.40	3466.67	6083.33	9170.00
moong	0.50	0.00	2.00	2.00	5600.00	3500.00	7700.00
mustard	0.92	1.00	5.50	5.17	3283.33	6166.67	10797.22
vegetable 1	0.77	0.78	52.15	51.23	598.46	12153.85	18505.80
vegetable 2	0.86	0.90	57.86	56.43	792.86	17857.14	26882.65
vegetable 3	1.00	1.00	62.50	62.50	710.00	15500.00	28875.00
others	2.94	2.94	52.50	52.50	1412.50	35250.00	38906.25

Table 25-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	2.58	2.50	42.70	34.20	1352.00	20550.00	25688.40
wheat	1.00	0.00	10.00	8.00	1800.00	8000.00	6400.00
maize	1.00	1.00	12.00	10.00	1100.00	4000.00	7000.00
gram	1.00	0.00	6.00	6.00	4650.00	11000.00	16900.00
masur	1.00	0.00	7.00	7.00	3300.00	8500.00	14600.00
moong	1.00	0.00	4.00	4.00	7000.00	10000.00	18000.00
mustard	1.00	1.00	6.00	5.00	3500.00	6500.00	11000.00
vegetable 1	1.00	1.00	68.33	68.33	983.33	26000.00	41194.44
vegetable 2	1.00	1.00	80.00	80.00	950.00	31000.00	45000.00
vegetable 3	1.00	1.00	45.00	45.00	1100.00	20000.00	29500.00
others	2.50	3.00	60.00	60.00	1375.00	33500.00	49000.00

Table 25-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1371	1361				1346	1358		
wheat			1850					1800		
maize		1100	1100					1100		
gram		4429	4450				4700	4600		
masur		3500	3300				3300			
moong		5600						7000		
vegetable 1		665	492				1350	800		
vegetable 2		550	830					950		
vegetable 3			710					1100		

Table 25-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1366	1360				1342	1338		
wheat			1825					1800		
maize		1100	1100				1050	1050		
gram		4463	4500				4243	4350		
masur		3467	3300				3280	3200		
moong		5600	7000				5500			
mustard		3340	3333				3175	3050		
vegetable 1		741	580				634	463		
vegetable 2		550	907				515	840		
vegetable 3			840				500	650		

Table 25-21: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average Annual income (Rs)	% of Total Income	Average Annual income (Rs)
Milk		94.0	32267	99.4	45000
Milk Products	Ghee	0.0		0.0	
	Curd	0.0		0.0	
	Butter	0.0		0.0	
	Paneer	0.0		0.0	
	Others	0.0		0.0	
Meat		0.0		0.0	
Eggs		1.9	1429	0.6	1000
Skin/Hides Etc.		0.0		0.0	
Manure		0.0		0.0	
Dung cake		0.0		0.0	
Animal sale		3.1	8000	0.0	
Others		1.0	1667	0.0	
TOTAL		100.0	12875	100.0	18100

Table 25-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

	Difference in the average income of beneficiaries over non-beneficiaries (Rs)		Percentage change in average income between 2016-17 and 2015-16 (%)	
Items	2016-17	2015-16	Ben	Non-Ben
Milk	-12733	-9383	24.74	27.66
Eggs	429	229	38.89	25.00
Animal sale			60.00	
Others			25.00	
TOTAL	-5225	-3950	25.86	27.64

Table 25-23: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about RKVY?	100	0	100	90	10	100	98	2	100
Did you receive any benefits from RKVY in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from RKVY in the last five years excluding this year?	25	75	100	0	100	100	20	80	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	10	90	100	0	100	100	8	92	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	28	73	100	30	70	100	28	72	100

Table 25-24: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	40	67	45
News Paper	0	0	31
Agriculture/Horticulture Department	38	22	22
SAU	0	0	0
KVK	0	0	0
Input Suppliers	0	0	0
TV/Radio	0	0	0
Agri. Exhibitions	0	0	0
ZP/GP	23	11	20
Other sources	0	0	0
Total	100	100	100

Table 25-25: Distribution of farmers in crop development (in 2016-17) in Tripura for beneficiaries

		Crop 1	Crop 2	Fertilizer s	Micro nutrient s	Bio- fertilizer s and bio- control agents	Pesticide s	Other s
Number of Benefici aries (%)	Landless	0	0	0	0	0	0	0
	Marginal	75	67	75	75	75	75	75
	Small	25	33	25	25	25	25	25
	Medium	0	0	0	0	0	0	0
	Large	0	0	0	0	0	0	0
	Total	100	100	100	100	100	100	100
Number of Non- Benefici aries (%)	Landless	0	0	0	0	0	0	0
	Marginal	50	43	50	50	50	50	50
	Small	50	57	50	50	50	50	50
	Medium	0	0	0	0	0	0	0
	Large	0	0	0	0	0	0	0
	Total	100	100	100	100	100	100	100

Table 25-26: Details of Interventions made under crop development (in 2016-17) in Tripura for beneficiaries

		Seeds/planting materials (specify)	
		Crop1	Crop2
No of beneficiary of RKVY		40	30
Average actual cost of these materials (Rs)		1873	1909
Whether Material or subsidy received from RKVY (%)			
	Material	0	0
	Subsidy	100	27
If Material, quantity supplied (Kg)			
If subsidy, then	quantity of subsidized input (Kg) (average)	10	5
	Unit price (average)	200	52
	Price paid by beneficiary (average)	949	456
	Market price (average)	1873	912
	Amount of subsidy (average)	949	456
If subsidy, Nature of subsidy (%)			
	Price subsidy	3	0
	DBT	98	27
If DBT, the total amount received as DBT (Rs.)		-	-
If DBT, average number of days taken to receive the amount in your bank account?		-	-
Area in acres		2	1

Table 25-27A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Whether soil is tested in your area?		Soil health card issued? (who tested soil)	
	Yes	No	Yes	No
Beneficiary				
Landless				
Marginal	30	70	100	78
Small	60	40	100	50
Medium				
Large				
Total	38	63	100	67
Non-beneficiary				
Landless				
Marginal	67	33	100	50
Small	43	57	100	100
Medium				
Large				
Total	50	50	100	67

Table 25-27B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Do not know
Beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium			
Large			
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium			
Large			
Total	100	0	0

Table 25-28: Information regarding training and demonstration under RKVY (% of households)
(2016-17)

			Type of training					
	Number of Beneficiaries	% of beneficiary households undergone training	Demonstration	Field Visit	Kris hi Mela	Others	% of households found training beneficial	% of households who want more training
Landless								
Marginal	30	67	100	0	0	0	60	100
Small	10	80	100	0	0	0	75	100
Medium								
Large								
Total	40	70	100	0	0	0	64	100

Table 25-29: Usage of mobile phone in receiving agriculture-related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless					
Marginal	97	87	40	40	0
Small	100	100	70	70	0
Medium					
Large					
Total	98	90	48	48	0
Non-Beneficiary					
Landless					
Marginal	100	100	0	0	0
Small	100	80	0	0	0
Medium					
Large					
Total	100	90	0	0	0

Table 25-30A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	-	63	100	-	-	73
Contact details of the department which pay subsidy not available	-	23	30	-	-	25
Eligibility or criteria for availing the subsidy not known	-	37	0	-	-	28
Procedure for the subsidy very tedious	-	50	40	-	-	48
No of documents required for availing subsidy are too many	-	47	60	-	-	50
Subsidy paid after purchase while initial payment remains the highest problem	-	50	50	-	-	50
Delay in transfer	-	50	40	-	-	48
Prescribed machinery/asset not easily available in the market	-	17	20	-	-	18
Institutional financing facility not available	-	33	20	-	-	30
Capacity building/technical advice not provided	-	33	20	-	-	30
Long time gap between the purchase and receiving the subsidy amount	-	47	40	-	-	45
Biased towards large land owners	-	57	40	-	-	53
Poor quality of materials/machinery are supplied	-	40	20	-	-	35
Implementing agencies are located far away	-	40	60	-	-	45
Incidence of bribery	-	33	40	-	-	35
Lack of monitoring	-	33	70	-	-	43
Complementary inputs not available	-	33	30	-	-	33
Restricted Choice	-	33	10	-	-	28
Lack of marketing support	-	50	40	-	-	48
Any other (specify)	-	0	0	-	-	0

Table 25-30B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Landless	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	-	60	80	-	-	70
Contact details of the department which pay subsidy not available	-	60	80	-	-	70
Eligibility or criteria for availing the subsidy not known	-	60	60	-	-	60
Procedure for the subsidy very tedious	-	80	0	-	-	40
No of documents required for availing subsidy are too many	-	100	0	-	-	50
Subsidy paid after purchase while initial payment remains the highest problem	-	80	80	-	-	80
Delay in transfer	-	100	40	-	-	70
Prescribed machinery/asset not easily available in the market	-	40	40	-	-	40
Institutional financing facility not available	-	100	60	-	-	80
Capacity building/technical advice not provided	-	100	100	-	-	100
Long time gap between the purchase and receiving the subsidy amount	-	60	100	-	-	80
Biased towards large land owners	-	40	40	-	-	40
Poor quality of materials/machinery are supplied	-	80	60	-	-	70
Implementing agencies are located far away	-	80	40	-	-	60
Incidence of bribery	-	100	60	-	-	80
Lack of monitoring	-	80	80	-	-	80
Complementary inputs not available	-	60	20	-	-	40
Restricted Choice	-	100	60	-	-	80
Lack of marketing support	-	60	100	-	-	80
Any other (specify)	-	0	0	-	-	0

Table 25-31A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	-	-	-	-	-	-	-	-	-	-
Marginal	49	37	71	14	40	46	51	37	86	0
Small	53	13	40	27	40	27	47	20	60	7
Medium	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-
Total	50	30	62	18	40	40	50	32	78	2

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 25- 31B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	-	-	-	-	-	-	-	-
Marginal	80	6	57	29	57	29	0	0
Small	60	7	53	13	47	20	0	0
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
Total	74	6	56	24	54	26	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

26 UTTARAKHAND

Uttarakhand is in northern part of India, on the south slope of Himalaya range, with geographical area of 53483 Sq. km. The state was formed in 2000 as the 27th state of India, when it was carved out of northern Uttar Pradesh. Uttarakhand is a diversified agricultural economy, with two distinct climatic regions: hilly terrain and plain region. Climatic condition of the plains is very similar to Gangetic plain but the climate and thus, cultivation is quite different in hilly region. Total cropped area in Uttarakhand is 1124 thousand hectare in 2012-13 (State at a Glance: Uttarakhand, 2015⁵⁴). The average size of land-holding is 2.02 hectares in Uttarakhand in 2010-11. Average area of operational holding is 0.89 hectares. Agriculture and allied sectors contribute to 14.73 percent of GSDP in the state in 2013-14. Main agricultural products are rice, wheat, ragi, small millets, pulses, oilseeds, sugarcane, tea etc.

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Uttarakhand. Under RKVY scheme, Central Government has allocated Rs. 46.87 Crore for Uttarakhand, for which Rs. 46.57 Crore funds has been released and expenditure of Rs. 36.08 crore has been incurred in Uttarakhand during 2016-17 till 31st July 2017. Uttarakhand proposed projects of Rs. 8.6 Crores in 2016-17. In the very small-sized projects (cost < 1 crore) category, there is only one project in Fertilizer and Inm. In the category small size category (cost 1 to 5 crore), there are 4 projects proposed with priority sectors being Innovative Programmes/ Training/ Capacity Building/ Others. No project is proposed for cost more than 5 Crores. So, In Uttarakhand, only small projects are proposed in 2016-17. Project with highest average cost is proposed for Innovative Programmes/ Training/ Capacity Building/ Others. Figure 26-1 shows allocation, release and expenditure in RKVY in Uttarakhand over the years 2007-08 to 2015-16.

This study analyses performance of RKVY for the year 2016-17 in Uttarakhand. We have selected 4 projects for Uttarakhand and analysed the performance of RKVY by collecting primary information. List of selected projects for Uttarakhand is given in Table 26-1.

⁵⁴ http://gbpihedenvs.nic.in/State_at_glance/UK%20Glance/Uttarakhand_Complete.pdf

26.1 RESULTS FROM PRIMARY SURVEY

26.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Uttarakhand, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, the majority of the beneficiary households (68% of beneficiary households) are marginal farmers, 23% are small farmers, 7% are medium farmers and 1% belong to large category. In the non-beneficiary households, 70% are marginal, 10% are small, and 13% are medium farmers (Table 26-2).

26.1.1.1 LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of owned land is higher for marginal, small and medium farmers among the non-beneficiary households as compared to beneficiary households. Households depend on canal, tubewell (electric and diesel), wells and tanks for irrigation in Kharif season (Table 26-3A & 26-3B).

We have collected separate data for land-holding and irrigation for Kharif and Rabi season. For Rabi 2016-17 also, the average area of owned land is higher for marginal, small & medium farmers among the non-beneficiary households as compared to beneficiary households (Table 26-4A & 26-4B).

In our sample, a total of 120 households are beneficiaries and 30 are non-beneficiaries. Among the beneficiary households, 22% of the population is below 15 age-group, while 10 percent are

in above 60 age-group (Table 26-5). Rest 68% population in beneficiary households is in working age-group. In non-beneficiary households also, 68% population in non-beneficiary households is in working age-group. On the education front, 16% of the population in beneficiary group and 18% of non-beneficiary group is illiterate. 68% population in beneficiary households and 63% population in non-beneficiary households have attended school (class 1 to 12); while 11% population in beneficiary households and 17% population in non-beneficiary households have studied beyond school. Major occupation is cultivation and work as casual labor. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 26-6)

26.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 65% of the beneficiary households have reported income from farming. For non-beneficiary households, 63% of households have reported farming as an occupation. 35% of beneficiary households have reported income from dairy. 46% of beneficiary and 47% of non-beneficiary households have reported income from work as casual labor (Table 26-7).

Average annual income of the sample beneficiary households from farming is Rs. 143724 in Uttarakhand while the same for non-beneficiary households is Rs. 170263 in 2016-17 (Table 26-8). Average annual income from farming for beneficiary households was Rs. 136910 in 2015-16 while it was Rs. 166895 for non-beneficiary households in the same year. This shows that average income for non-beneficiary households from farming are higher than beneficiary households and it has increased from 2015-16 to 2016-17 for both categories. Major sources of income are farming and dairy apart from agriculture labor, casual labor and salary. For dairy also, the average income of beneficiary households is lower than non-beneficiaries; so is the average cost (Table 26-8).

Table 26-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is lower than non-beneficiaries for 2015-16; so is the average cost.

In terms of percentage change in income (Table 26-10), average income has increased by 5% in farming for beneficiary and 2% for non-beneficiary households. However, the average cost has increased by same percentage for both beneficiary and non-beneficiary households.

26.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 26-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation is higher for non-beneficiaries than beneficiaries, so is expenditure on diesel and other fuels. Overall expenditure for agriculture is also higher for non-beneficiaries as compared to beneficiaries for both the years.

Table 26-12 shows the percentage increase/ decrease in expenditure on different components of inputs for beneficiary and non-beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in purchase of other fuels for agriculture for beneficiary households. For non-beneficiary households, significant increase in expenditure is observed for diesel and other fuels.

26.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Uttarakhand, for beneficiary households, beneficiary farmers own agricultural implements like tractor, trolley, weeder, sprayers, threshers, pump sets, Sprinkler sets / Drip Irrigation Equipments, Fodder Choppers and leveller. Marginal farmers own implements like Threshers, Sprayers, Sprinkler sets / Drip Irrigation Equipments and fodder chopper as compared to other category of farmers (Table 26-13A). Small farmers have equipments like tractor, trolley, weeder, manual/ power sprayers, diesel pump sets, Sprinkler sets / Drip Irrigation Equipments, leveller and fodder chopper more than other category of farmers. In non-beneficiary households, farmers own equipments like tractor, trolley, weeder, sprayers, threshers, electric pump sets and leveler, fodder chopper and harvest combine (Table 26-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 26-14A). They own cows, buffalo, young stock and male draught.

In our sample, 49% of the households for beneficiary and 73% of non-beneficiary groups have pucca houses (Table 26-15). 38% households in beneficiary category and 20% in the non-beneficiary category have semi-pucca houses.

It is observed from our sample that 66% of beneficiary households possess TV while for non-beneficiaries; it is 77% (Table 26-16). In the case of mobile phones, 98% of beneficiary and 97% of non-beneficiary households have reported to possess it. For beneficiary households, ownership of bicycles is 40%. Some households have two-wheelers and refrigerator. Ownership of four-wheelers is higher for non-beneficiary households (17%) as compared to beneficiary households (6%).

26.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, jowar, maize, tur, gram, masur, sugarcane, fruits and vegetables in the majority of the cultivated area, while non-beneficiary households produce paddy, jowar and sugarcane (Table 26-17 and Table 26-18). Average production of paddy is almost similar for beneficiary households (17.2 qtls) and non-beneficiary households (17.6 qtls). But the price of the marketed quantity for paddy and wheat is higher for the non-beneficiary household vis-à-vis beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 26-19). Marginal farmers from beneficiary households get higher price as compared to non-beneficiary households for paddy and wheat. Marginal farmers are getting lower price than small farmers for paddy and wheat for beneficiary households (Table 26-20). For non-beneficiary households also, small farmers are getting higher price than marginal farmers, for paddy and wheat; but the situation is opposite for maize. In 2015-16 also, it is seen that price received by marginal farmers is lower than small farmers for paddy and wheat, for beneficiary households.

26.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for Uttarakhand, it is seen that average income from livestock is higher for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 96% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries; the share is 91% (Table 26-21).

The inter-temporal comparison shows that average income from the production of milk is same for beneficiaries as compared to beneficiaries both in 2016-17 and 2015-16 (Table 26-22).

26.1.1.7 AWARENESS REGARDING RKVY PROGRAM

Regarding the awareness of RKVY, it is found that in our sample, households in Uttarakhand are quite aware of the program. 100% of the beneficiaries and 31% of the non-beneficiaries have heard about RKVY. 88% of the beneficiary households have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 38% of the beneficiary households and 7% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 58% of the beneficiary households and 34% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17 (Table 26-21).

In our sample in Uttarakhand, the majority of the beneficiary households had received information regarding RKVY from Friends and neighbours, Agriculture / Horticulture Department, news paper, SAU, KVK, Input suppliers, TV/Radio and Zila / Gram Panchayet (Table 26-22). For non-beneficiary households, 100% of the households received information from friends and neighbours.

26.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development is a very important aspect for the overall development of agriculture. This section looks into the aspects of crop development through RKVY (Table 26-23). In the project

“Saturation of 300 villages Srinagar under organic Farming”, subsidy is provided for purchasing tractor, rotavator, tiller, harrow, seed drill, sprayers, cutter and threshers and pump-sets. The majority of the farmers have received benefit through price DBT (Table 26-23). Average subsidy amount varies from Rs. 8,000 to Rs. 35000 per household. Number of days for payment of DBT varies from 10 days to 88 days. The implements helped farmers in solving labour problem, enabled timely operation, saved water, helped in controlling weed and good plant growth, reduced drudgery Reduced cost of Cultivation, and increased cropping intensity.

RKVY provided assistance in watershed development also in Uttarakhand. The development work was done under the project “Social Conservation Work in affected areas due to recent heavy rains”. 35% of marginal farmers have benefitted from the intervention on check dams (Table 26-24). 11% of the marginal farmers are also reported to be have improved availability of water through the intervention.

In Uttarakhand, 30% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil (Table 26-25A). Among them, 100% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 26-25B).

RKVY has helped farmers in sericulture through the project “Development of for Muklbery and one muga cluster during 2015-16 and 2016-17 in five District of Kumaun and Garhwal”. Under the project, landless farmers received subsidy of Rs. 9000 on an average for DFL and Rs. 90000 rearing. Marginal farmers received subsidy of average amount of Rs. 8821 for DFL and Rs. 90000 for rearing. Other benefit includes subsidy for planting mulberry plants, which amounts to Rs. 2700 per household on an average.

Within our sample in Uttarakhand, 69% of beneficiary households had undergone training and 57% had undergone demonstration (Table 26-27). 92% of the households found training beneficial.

It is also found in our study 83% of beneficiary and 73% of non-beneficiary households receive text messages. Only 12% of the beneficiary households and 3% of the non-beneficiary households have reported to receive agriculture-related text messages (Table 26-28).

26.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned their major problem as Lack of marketing support, restricted choice, Long time gap between the purchases and receiving the subsidy amount, and Delay in transfer. Apart from these problems, non-beneficiary households face major problem in unavailability of complementary input, lack of monitoring and unavailability of information regarding RKVY (Table 26-29A & Table 26-29B).

According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in better price realization, providing financial assistance, increasing production, improving market facilities and employment generation. However, it appears that RKVY has not been very successful in procurement and capacity building (Table 26-30A & 26-30B).

26.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

The project “Construction of Floriculture Collection Marketing Centre at Rudrapur” was chosen in Uttarakhand. The project was carried out by Uttarakhand Agriculture Produce Marketing Board, Rudrapur, Udham Singh Nagar.

Under this project, warehouse is being built. In the survey, implementing agency representative informed that the project was proposed by the implementing agency at district level (Table 26-31). It is observed from Table 2-109 that major problem regarding funds is reduced release. Table 26-32 shows physical capacity of the project.

E-tenders were invited - respondent has opined that e-tendering improves the efficiency of the tendering process (Table 26-33). It is reported that the project benefited 50000 farmers in 2016-17. Other beneficiaries were local traders, and Self Help Groups. Complementary/ Supplementary projects for the ongoing project would be warehouse, market share, cold-

storage, development cooperatives, cooperatives, rural electricity, and FPOs (Table 26-34). There is no convergence of the project with other schemes (Table 26-35).

26.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Uttarakhand. Under RKVY scheme, Central Government has allocated Rs. 46.87 Crore for Uttarakhand, for which Rs. 46.57 Crore funds has been released and expenditure of Rs. 36.08 crore has been incurred in Uttarakhand during 2016-17 till 31st July 2017. Uttarakhand proposed projects of Rs. 8.6 Crores in 2016-17. According to MIS report, in Uttarakhand, only small projects are proposed in 2016-17. Project with highest average cost is proposed for Innovative Programmes/ Training/ Capacity Building/ Others.

This study analyses performance of RKVY for the year 2016-17 in Uttarakhand. We have selected 4 projects for Uttarakhand and analysed the performance of RKVY by collecting primary information. The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators. In our sample in Uttarakhand, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. In our sample, the majority of the beneficiary households (68% of beneficiary households) are marginal farmers, 23% are small farmers, 7% are medium farmers and 1% belong to large category. In the non-beneficiary households, 70% are marginal, 10% are small, and 13% are medium farmers. Among the beneficiary households, 22% of the population is below 15 age-group, while 10 percent are in above 60 age-group. Rest 68% population in beneficiary households is in working age-group. On the education front, 16% of the population in beneficiary group and 18% of non-beneficiary group is illiterate. 68% population in beneficiary households and 63% population in non-beneficiary households have attended school (class 1 to 12); while 11% population in beneficiary households and 17% population in non-beneficiary households have studied beyond school. Major occupation is cultivation and work as casual labour. A major part of the population belongs to the category of 'student' or

‘housewife’. In the sample of our study, 65% of the beneficiary households have reported income from farming. For non-beneficiary households, 63% of households have reported farming as an occupation. 35% of beneficiary households have reported income from dairy. 46% of beneficiary and 47% of non-beneficiary households have reported income from work as casual labour. Average income for non-beneficiary households from farming are higher than beneficiary households and it has increased from 2015-16 to 2016-17 for both categories. Major sources of income are farming and dairy apart from agriculture labour, casual labour and salary. For dairy also, the average income of beneficiary households is lower than non-beneficiaries; so is the average cost.

Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation is higher for non-beneficiaries than beneficiaries, so is expenditure on diesel and other fuels. Overall expenditure for agriculture is also higher for non-beneficiaries as compared to beneficiaries for both the years.

Beneficiary farmers own agricultural implements like tractor, trolley, weeder, sprayers, threshers, pump sets, Sprinkler sets / Drip Irrigation Equipments, Fodder Choppers and leveller. Marginal farmers own implements like Threshers, Sprayers, Sprinkler sets / Drip Irrigation Equipments and fodder chopper as compared to other category of farmers. Small farmers have equipments like tractor, trolley, weeder, manual/ power sprayers, diesel pump sets, Sprinkler sets / Drip Irrigation Equipments, leveller and fodder chopper more than other category of farmers. In non-beneficiary households, farmers own equipments like tractor, trolley, weeder, sprayers, threshers, electric pump sets and leveler, fodder chopper and harvest combine.

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while for non-beneficiaries; it is 77%. In the case of mobile phones, 98% of beneficiary and 97% of non-beneficiary households have reported to possess it. For beneficiary households, ownership of bicycles is 40%. Some households have two-wheelers and refrigerator. Ownership of four-wheelers is higher for non-beneficiary households (17%) as compared to beneficiary households (6%).

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households and 7% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 58% of the beneficiary households and 34% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17.

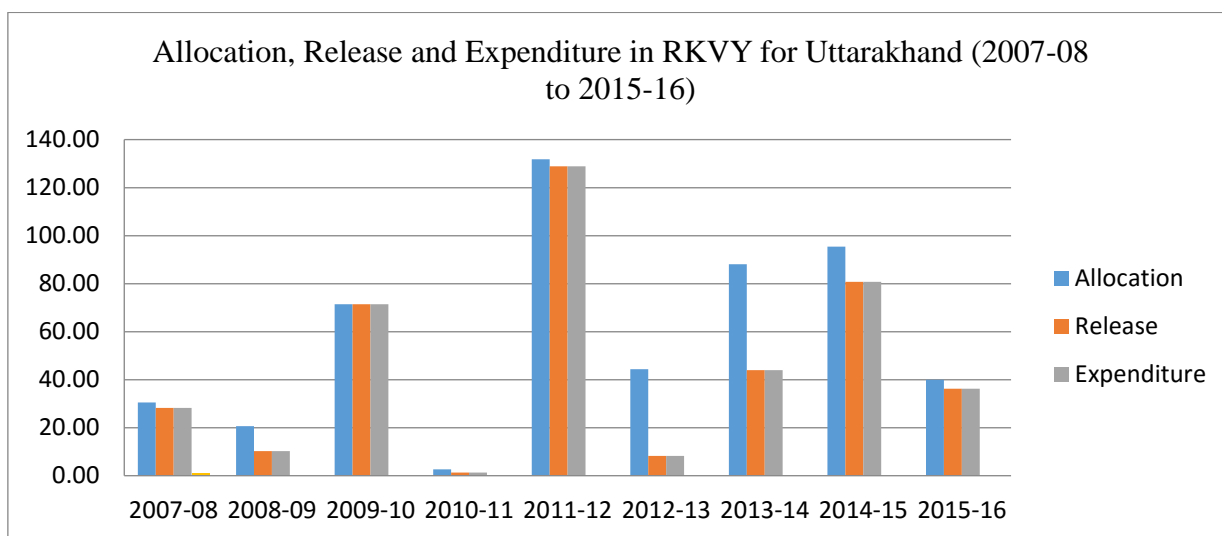
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Crop development is a very important aspect for the overall development of agriculture. This section looks into the aspects of crop development through RKVY. In the project “Saturation of 300 villages Srinagar under organic Farming”, subsidy is provided for purchasing tractor, rotavator, tiller, harrow, seed drill, sprayers, cutter and threshers and pump-sets. The majority of the farmers have received benefit through price DBT. Average subsidy amount varies from Rs. 8,000 to Rs. 35000 per household. Number of days for payment of DBT varies from 10 days to 88 days. The implements helped farmers in solving labour problem, enabled timely operation, saved water, helped in controlling weed and good plant growth, reduced drudgery Reduced cost of Cultivation, and increased cropping intensity. RKVY provided assistance in watershed development also in Uttarakhand. The development work was done under the project “Social Conservation Work in affected areas due to recent heavy rains”. 35% of marginal farmers have benefitted from the intervention on check dams. 11% of the marginal farmers are also reported to be have improved availability of water through the intervention. In Uttarakhand, 30% of the beneficiary farmers have reported that the soil has been tested to know the nature of the soil. Among them, 100% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. RKVY has helped farmers in sericulture through the project “Development of for Muklbery and one muga cluster during 2015-16 and 2016-17 in five District of Kumaun and Garhwal”. Under the project, landless farmers received subsidy of Rs. 9000 on an average for DFL and Rs. 90000 rearing. Marginal farmers received subsidy of average amount of Rs. 8821 for DFL and Rs. 90000 for rearing.

Other benefit includes subsidy for planting mulberry plants, which amounts to Rs. 2700 per household on an average. Within our sample in Uttarakhand, 69% of beneficiary households had undergone training and 57% had undergone demonstration. 92% of the households found training beneficial.

In our study, it is found that beneficiary households have mentioned their major problem as Lack of marketing support, restricted choice, Long time gap between the purchases and receiving the subsidy amount, and Delay in transfer. Apart from these problems, non-beneficiary households face major problem in unavailability of complementary input, lack of monitoring and unavailability of information regarding RKVY. According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in better price realization, providing financial assistance, increasing production, improving market facilities and employment generation. However, it appears that RKVY has not been very successful in procurement and capacity building.

Figure 26-1: Allocation, Release and Expenditure in RKVY for Uttarakhand (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 26-1: List of selected project name and code

Project Code	Project Name
01	Social Conservation Work in affected areas due to recent heavy rains
02	Saturation of 300 villages Srinagar under organic Farming
03	Development of for Muklbery and one muga cluster during 2015-16 and 2016-17 in five District of Kumaun and Garhwal
04	Construction of Floriculture Collection Marketing Centre at Rudrapur

Table 26-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number)(% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	2 (2)	2 (7)	4(3)
Marginal	82 (68)	21 (70)	103(69)
Small	27 (23)	3 (10)	30(20)
Medium	8 (7)	4 (13)	12(8)
Large	1 (1)	0 (0)	1(1)
Total	120 (100)	30 (100)	150(100)

Table 26-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			-	0.75	2.74	5.00	6.00
Leased-in Land / share cropping (acre)			-	0.95	2.33	6.33	2.00
Leased-out Land / share cropping (acre)			-	2.50	-	-	-
Total operated area (owned+LI-LO) (acre)			-	0.78	3.39	7.38	8.00
Irrigated Area by canal (%)			0.00	0.83	2.00	4.00	0.00
Irrigated Area by tubewell (%)	Rented	Electric	0.00	1.00	3.50	1.00	0.00
		Diesel	0.00	0.75	0.75	0.00	0.00
	Owned	Electric	0.00	1.38	2.78	4.60	8.00
		Diesel	0.00	1.13	1.43	2.00	0.00
Irrigated Area by Tanks (%)			0.00	0.00	0.55	0.50	0.00
Irrigated Area by Wells (%)			0.00	1.00	0.00	0.00	0.00
Irrigated Area by others (%)			0.00	0.00	0.00	0.00	0.00

Table 26-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			-	1.05	3.67	6.50	-
Leased-in Land / share cropping (acre)			-	1.08	0.50	-	-
Leased-out Land / share cropping (acre)			-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)			-	1.16	3.83	6.50	-
Irrigated Area by canal (%)			0.00	1.25	3.50	6.00	0.00
Irrigated Area by tubewell (%)	Rente d	Electric	0.00	2.00	3.00	4.00	0.00
		Diesel	0.00	0.00	0.00	2.00	0.00
	Owne d	Electric	0.00	1.67	2.50	4.50	0.00
		Diesel	0.00	1.00	0.00	2.00	0.00
Irrigated Area by Tanks (%)			0.00	0.00	0.00	0.00	0.00
Irrigated Area by Wells (%)			0.00	0.00	0.00	0.00	0.00
Irrigated Area by others (%)			0.00	0.00	0.00	0.00	0.00

Table 26-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			-	0.81	3.25	5.00	12.00
Leased-in Land / share cropping (acre)			-	1.07	2.36	5.75	2.00
Leased-out Land / share cropping (acre)			-	3.00	-	-	-
Total operated area (owned+ LI-LO) (acre)			-	0.85	4.03	7.88	14.00
Irrigated Area by canal (%)			-	0.83	2.00	4.00	
Irrigated Area by tube-well (%)	Rented	Electric	0.00	0.83	2.00	4.00	0.00
		Diesel	0.00	1.75	3.00	1.00	0.00
	Owned	Electric	0.00	0.75	0.67	0.00	0.00
		Diesel	0.00	1.50	2.94	5.10	14.00
Irrigated Area by Tanks (%)			0.00	1.40	2.02	2.90	0.00
Irrigated Area by Wells (%)			0.00	0.55	0.50	0.00	0.00
Irrigated Area by others (%)			0.00	1.00	0.00	0.00	0.00

Table 26-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			-	1.11	3.67	7.75	-
Leased-in Land / share cropping (acre)			-	1.31	0.50	-	-
Leased-out Land / share cropping (acre)			-	-	-	-	-
Total operated area (owned+ LI-LO) (acre)			-	1.26	3.83	7.75	-
Irrigated Area by canal (%)			-	1.25	3.50	6.00	
Irrigated Area by tubewell (%)	Rente d	Electri c	0.00	1.25	3.50	6.00	0.00
		Diesel	0.00	2.00	3.00	4.00	0.00
	Owne d	Electri c	0.00	0.00	0.00	2.00	0.00
		Diesel	0.00	1.83	2.50	6.00	0.00
Irrigated Area by Tanks (%)			0.00	0.50	0.00	4.00	0.00
Irrigated Area by Wells (%)			0.00	1.00	0.00	1.00	0.00
Irrigated Area by others (%)			0.00	0.00	0.00	0.00	0.00

Table 26-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	22%	22%	22%
	>15 to 25	23%	25%	23%
	>25 to 40	24%	22%	24%
	>40 to 59	20%	22%	20%
	>59	10%	10%	10%
	All Groups	100%	100%	100%
Education	Illiterate	16%	18%	16%
	Class 1 to 5	16%	24%	16%
	Above Class 5 to 8	16%	12%	16%
	Above Class 8 to 12	36%	28%	36%
	Above Class 12	11%	17%	11%
	Other diploma	1%	2%	1%
	can read and write	1%	0%	1%
	can read only	0%	0%	0%
	can count only	0%	0%	0%
	could not attend class 1	3%	1%	3%
	All Groups	100%	100%	100%

Table 26-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	11%	10%	11%
agricultural labour	1%	3%	1%
dairy	1%	1%	1%
casual labour	13%	11%	13%
self-employment (specify)	3%	3%	3%
salaried employment	5%	7%	5%
Sericulture	3%	0%	3%
Student	27%	22%	27%
housewife	22%	22%	22%
non-working	13%	20%	13%
others (no saperate income)	1%	1%	1%
All Groups	100%	100%	100%

Table 26-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	B	NB
Farming	65	63
Dairy	35	23
Poultry	1	0
Sericulture	20	0
Agricultural Labour	20	27
Casual Labour	46	47
Salary	16	33
Other	11	10
Total	100	100

Table 26-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	143724	47655	96070	170263	56211	114052
Dairy	24386	12778	11608	46571	19286	27286
Poultry	1500	200	1300			-
Sericulture	2258	30	2228			-
Agricultural Labour	13167		13167	21375		21375
Casual Labour	41945	2063	39883	36679	1000	35679
Salary	292895	21167	271728	189600	4500	185100
Other	111615	27946	83669	150000	46143	103857

Table 26-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	136910	46082	90828	166895	54425	112470
Floriculture	10000	-	-	-	-	-
Dairy	24341	12284	12057	43714	17857	25857
Poultry	1100	250	850	-	-	-
Sericulture	900	-	-	-	-	-
Agricultural Labour	12250		12250	20000		20000
Casual Labour	39926	1863	38063	37893	1000	36893
Salary	278421	26000	252421	183100	4250	178850
Other	91100	26321	64779	102500	41000	61500

Table 26-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	5%	3%	6%	2%	3%	1%
Dairy	0%	4%	-4%	7%	8%	6%
Poultry	36%	-20%	53%			
Agricultural Labour	7%		7%	7%		7%
Casual Labour	5%	11%	5%	-3%	0%	-3%
Salary	5%	-19%	8%	4%	6%	3%
Other	23%	6%	29%	46%	13%	69%

Table 26-11: Average annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	21828	12480	22369	13480
Total rent on machinery (tractor, harvester etc)	5557	7262	5114	6812
Expenditure on purchased water for irrigation	2952	4200	2922	4373
Expenditure on electricity for irrigation	11781	15286	11703	14643
Expenditure on diesel	16211	18500	15674	16875
Expenditure on other fuels for agriculture	1344	2240	1238	1770
Any other	26703	32814	26386	31696
<i>Total expenditure on agriculture</i>	86376	92782	85405	89649

Table 26-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	-2%	-7%
Total rent on machinery (tractor, harvester etc)	9%	7%
Expenditure on purchased water for irrigation	1%	-4%
Expenditure on electricity for irrigation	1%	4%
Expenditure on diesel	3%	10%
Expenditure on other fuels for agriculture	9%	27%
Any other	1%	4%
<i>Total expenditure on agriculture</i>	1%	3%

Table 26-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0%	24%	54%	19%	3%
Trolley	0%	18%	54%	25%	4%
Weeder	0%	18%	65%	18%	0%
Manual / Power Sprayers	0%	36%	50%	14%	0%
Threshers	0%	42%	37%	16%	5%
Electrical Pump sets	0%	30%	52%	15%	3%
Diesel Pump sets	0%	22%	57%	22%	0%
Sprinkler sets / Drip Irrigation Equipments	0%	50%	50%	0%	0%
Leveler	0%	33%	50%	17%	0%
Fodder Choppers	0%	49%	42%	8%	2%
Bullock cart	0%	100%	0%	0%	0%
Others	0%	29%	53%	18%	0%

Table 26-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0%	22%	33%	44%	0%
Trolley	0%	29%	29%	43%	0%
Weeder	0%	0%	33%	67%	0%
Manual / Power Sprayers	0%	44%	22%	33%	0%
Threshers	0%	60%	20%	20%	0%
Electrical Pump sets	0%	43%	29%	29%	0%
Diesel Pump sets	0%	50%	0%	50%	0%
Leveler	0%	0%	50%	50%	0%
Fodder Choppers	0%	50%	21%	29%	0%
Harvest Combine	0%	0%	0%	100%	0%
Others	0%	67%	0%	33%	0%

Table 26-14A: Livestock ownership by beneficiary households (2016-17)(% of number of livestock)

<i>Livestock</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	3%	61%	28%	7%	1%
Buffalo	0%	62%	22%	14%	2%
Young Stock	2%	65%	23%	9%	1%
Male Draught	0%	63%	25%	13%	0%

Table 26-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	13%	7%	11%
Pucca	49%	73%	54%
Semi-Pucca	38%	20%	34%
Others	1%	0%	1%
Total	100%	100%	100%

Table 26-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	66%	34%	100%	77%	23%	100%
Telephone	6%	94%	100%	0%	100%	100%
Mobile phone	98%	2%	100%	97%	3%	100%
Cycle	40%	60%	100%	37%	63%	100%
Two wheeler	38%	63%	100%	43%	57%	100%
Four wheeler	6%	94%	100%	17%	83%	100%
Refrigerator	39%	61%	100%	37%	63%	100%

Table 26-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivat ed Area (in Acres)	Irrigate d Area (in Acres)	Produ ction (Qtls)	Market ed Quantit y (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitabilit y
paddy	1.6	2.2	17.2	22.8	1379.8	9394.4	22070.6
wheat	2.0	2.7	25.3	33.4	1573.7	13555.0	38974.3
jowar	0.4	0.4				1000.0	-1000.0
maize	1.8	1.5	36.3	30.8	1050.0	6500.0	25787.5
tur	7.0	7.0	92.0	80.0	1400.0	50000.0	62000.0
gram	0.3		0.5			1000.0	-1000.0
masur	0.3		0.5			1500.0	-1500.0
sugarcane	2.5	2.4	517.4	473.1	280.4	60968.8	71656.3
vegetable 1	1.0	1.0	78.3	78.3	533.3	20750.0	21027.8
vegetable 2	0.2	0.2	15.0	15.0	500.0	3000.0	4500.0
spices	1.0	1.0	4.0	3.0	800.0	1500.0	900.0
others	2.0	2.0	20.0	20.0	800.0	5000.0	11000.0

Table 26-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivate d Area (in Acres)	Irrigate d Area (in Acres)	Productio n (Qtls)	Markete d Quantity (Qtls)	Price receive d (per qtl)	Total paid- out costs (Rs.)	Profitabilit y
paddy	1.7	2.5	17.6	20.9	1443.8	9992.6	20133.7
wheat	2.0	2.9	24.6	31.7	1598.4	15581.5	35035.7
sugarcane	2.6	2.4	555.4	513.2	277.6	66692.3	75761.3

Table 26-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Land less	Marg inal	Smal l	Medi um	Large	Land less	Marg inal	Smal l	Medi um	Larg e
paddy		1355	1390	1393	1500		1472	1367	1438	
wheat		1564	1580	1578	1600		1617	1583	1569	
maize			1050							
tur				1400						
sugarcane		283	278	272	307	310	277	293	258	310

Table 26-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Lan dle ss	Margin al	Small	Mediu m	Large	Landl ess	Marg inal	Small	Mediu m	Larg e
paddy		1292	1309	1300	1500		1357	1300	1363	
wheat		1536	1550	1569	1500		1556	1533	1538	
maize		1100	1075							
tur				1300						
sugarca ne		358	295	261	285	300	619	268	261	

Table 26-21: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average Annual income (Rs.)	% of Total Income	Average Annual income (Rs.)
Milk		96%	23525	91%	38875
Milk Products	Ghee	1%	2750	9%	30000
	Curd	1%	4500	0%	0
	Butter	0%	3000	0%	0
Eggs		0%	1000	0%	0
Manure		1%	5250	0%	0
Dung cake		0%	750	0%	0
Animal sale		0%	1333	0%	0
TOTAL		100%	8175	100%	11367

Table 26-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

	% difference in average income between Beneficiary and Non- Beneficiary	% difference in average income for Beneficiary between 2015-16 and 2016-17
Milk	-39	0
Milk products: Ghee	-91	-8
Eggs		100
Animal sale		29
TOTAL	-28	-3

Table 26-21: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	overa ll	Yes	No	overa ll	Yes	No	overa ll
Have you heard about Rashtriya Krishi Vikas Yojana?	100 %	0%	100 %	31%	69%	100 %	87%	13%	100 %
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100 %	0%	100 %	0%	100 %	100 %	81%	19%	100 %
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	88%	12%	100 %	0%	100 %	100 %	71%	29%	100 %
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	38%	63%	100 %	7%	93%	100 %	32%	68%	100 %
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	58%	42%	100 %	34%	66%	100 %	54%	46%	100 %

Table 26-22: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbors	14%	100%
News Paper	7%	0
Agriculture / Horticulture Department	23%	0
SAU	9%	0
KVK	3%	0
Input Suppliers	1%	0
TV/ Radio	3%	0
Agri. Exhibitions	7%	0
ZP/GP	34%	0
Other sources		
Total	120	9

Table 26-23: Details of Interventions made under crop development (in 2016-17) in Uttarakhand for beneficiaries

		Rotava tor	Tiller	Harro w	Seed drill	Spraye rs	Cutter s & Thresh er	Pump set
No of beneficiaries of RKVY		6	7	12	2	10	8	3
Total Cost (Rs.)		95833	13200 0	39100 0	60000	39850	11470 00	76000
Amount financed by loan (Rs.)		10833	0	0	15000	0	20060	0
Subsidy amount from RKVY (Rs.)		35000	8571	12835	15000	3695	35625	12667
Mode of Subsidy Transfer:								
	Price Subsidy	17%	0%	17%	0%	30%	0%	0%
	DBT	83%	100%	83%	100%	70%	100%	100%
If DBT, Number of days taken to receive subsidy?		32	23	13	88	10	18	43
Benefits derived from the implement								
1	Solved labor problem	17%	0%	42%	0%	10%	38%	0%
2	Enabled timely operations	67%	0%	58%	0%	10%	88%	100%
3	Saved water	0%	0%	0%	0%	20%	0%	0%
4	Helped in controlling weed	17%	0%	8%	0%	20%	0%	0%
5	Helped in good plant growth	17%	0%	17%	50%	50%	13%	100%
6	Reduced Drudgery	33%	0%	58%	100%	10%	63%	0%
7	Helped in transportation	0%	0%	0%	0%	0%	13%	0%
8	Reduced cost of Cultivation	17%	0%	0%	0%	0%	38%	0%
9	Increased cropping intensity	17%	0%	8%	50%	80%	0%	33%
10	Not useful	0%	0%	0%	0%	0%	0%	0%
Subsidy received from any other scheme		0%	0%	8%	0%	0%	0%	0%
Subsidy not received from any other scheme		100%	0%	92%	100%	100%	100%	100%
If subsidy not received, number of households who have said who would not buy this implement		83%	0%	67%	100%	30%	63%	67%

Table 26-24: Details of Interventions made under watershed development (in 2016-17) in Uttarakhand for beneficiaries

	No. of beneficiaries	Check dams (%)	Ground water through electric Pump set (%)	No. of households received subsidy (%)	No. of households participated in construction process (%)	No. of households who got benefit from the intervention (%)	improved availability of water (%)	improved availability and improved quality of water (%)
Landless	2	0%	0%	0%	0%	0%	0%	0%
Marginal	82	35%	1%	37%	23%	35%	11%	9%
Small	27	26%	0%	26%	15%	26%	4%	11%
Medium	8	38%	0%	38%	400%	38%	0%	25%
Large	1	0%	0%	0%	0%	0%	0%	0%

Table 26-25A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land-size	Whether soil is tested in your area?		soil health card issued? (who tested soil)	
	Yes	No	Yes	No
Beneficiary				
Landless	0%	100%	0%	0%
Marginal	15%	85%	100%	0%
Small	59%	41%	100%	0%
Medium	88%	13%	100%	0%
Large	100%	0%	100%	0%
Total	30%	70%	100%	0%
Non-beneficiary				
Landless	0%	100%	0%	0%
Marginal	5%	95%	100%	0%
Small	67%	33%	100%	0%
Medium	50%	50%	100%	0%
Large	0%	0%	0%	0%
Total	17%	83%	100%	0%

Table 26-25B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land-size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless	-	-	-
Marginal	100%	0%	0%
Small	100%	0%	0%
Medium	100%	0%	0%
Large	100%	0%	0%
Non-beneficiaries			
Landless	-	-	-
Marginal	100%	0%	0%
Small	100%	0%	0%
Medium	100%	0%	0%
Large	-	-	-

Table 26-26: Details of Average Subsidy Received through Sericulture Intervention in Uttarakhand

	DFL beneficiaries	Rearing beneficiaries	Other sericulture intervention
Landless	9000	90000	-
Marginal	8821	90000	2700
Small	-	-	-
Medium	-	-	-
Large	-	-	-

Table 26-27: Information regarding training and demonstration under RKVY (% of households) (2016-17)

			Type of training					
			Dem onstr ation	Field Visit	Kris hi Mela	Othe rs		
	Num ber of Benef iciarie s	% of beneficiary households undergone training					% of households found training beneficial	% of household s who want more training
Landless	2	100%	0%	50%	50%	0%	100%	100%
Marginal	59	72%	53%	32%	15%	0%	97%	97%
Small	16	59%	75%	6%	19%	0%	75%	88%
Medium	5	63%	80%	0%	20%	0%	80%	80%
Large	1	100%	0%	0%	100%	0%	100%	100%
Total	83	69%	57%	25%	18%	0%	92%	94%

Table 26-28: Usage of mobile phone in receiving agriculture related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	100%	0%	0%	0%	0%
Marginal	100%	83%	1%	0%	0%
Small	100%	85%	30%	0%	0%
Medium	100%	100%	63%	0%	0%
Large	100%	0%	0%	0%	0%
Total	100%	83%	12%	0%	0%
Non-Beneficiary					
Landless	100%	0%	0%	0%	0%
Marginal	100%	76%	0%	0%	0%
Small	100%	67%	20%	0%	0%
Medium	100%	100%	0%	0%	0%
Large	-	-	-	-	-
Total	100%	73%	3%	0%	0%

Table 26-29A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	-	13	37	25	100	20
Contact details of the department which pay subsidy not available	-	17	33	25	0	21
Eligibility or criteria for availing the subsidy not known	-	44	59	88	100	50
Procedure for the subsidy very tedious	-	57	63	63	0	58
No of documents required for availing subsidy are too many	-	38	37	50	0	38
Subsidy paid after purchase while initial payment remains the highest problem	-	67	96	100	100	75
Delay in transfer	-	61	96	100	100	71
Prescribed machinery/asset not easily available in the market	-	17	11	0	0	14
Institutional financing facility not available	-	59	89	100	100	68
Capacity building/technical advice not provided	-	37	44	38	0	38
Long time gap between the purchase and receiving the subsidy amount	-	49	81	88	100	58
Biased towards large land owners	-	33	22	25	0	30
Poor quality of materials/machinery are supplied	-	30	4	0	0	23
Implementing agencies are located far away	-	35	56	38	100	40
Incidence of bribery	-	32	0	13	0	23
Lack of monitoring	-	46	56	38	100	48
Complementary inputs not available	-	59	85	100	100	68
Restricted Choice	-	85	78	100	100	84
Lack of marketing support	-	96	96	88	100	95
Any other (specify)	-	1	0	0	0	1

Table 26-29B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY program details not easily available	-	67	33	75	-	60
Contact details of the department which pay subsidy not available	-	57	67	75	-	57
Eligibility or criteria for availing the subsidy not known	-	67	100	100	-	77
Procedure for the subsidy very tedious	-	43	67	25	-	47
No of documents required for availing subsidy are too many	-	43	67	0	-	40
Subsidy paid after purchase while initial payment remains the highest problem	-	81	100	100	-	87
Delay in transfer	-	90	100	100	-	93
Prescribed machinery/asset not easily available in the market	-	29	0	0	-	20
Institutional financing facility not available	-	86	100	100	-	90
Capacity building/technical advice not provided	-	71	67	75	-	70
Long time gap between the purchase and receiving the subsidy amount	-	90	100	100	-	93
Biased towards large land owners	-	57	67	0	-	53
Poor quality of materials/machinery are supplied	-	5	0	0	-	3
Implementing agencies are located far away	-	43	100	25	-	50
Incidence of bribery	-	57	67	25	-	57
Lack of monitoring	-	71	100	75	-	77
Complementary inputs not available	-	86	100	100	-	90
Restricted Choice	-	71	100	100	-	80
Lack of marketing support	-	100	100	100	-	100
Any other	-	0	0	0	-	0

Table 26-29A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	50	0	25	25	50	0	25	25	50	0
Marginal	38	42	42	38	30	50	50	30	50	30
Small	3	87	63	27	30	60	57	33	60	33
Medium	0	67	33	33	25	42	50	17	25	42
Large	0	100	100	0	0	100	0	100	100	0
Total	28	53	45	35	30	51	50	30	50	31

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 26- 29B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	25	25	0	50	25	25	0	0
Marginal	24	55	7	73	14	65	0	0
Small	0	97	0	90	0	90	0	0
Medium	0	67	0	67	8	58	0	0
Large	0	100	0	100	0	100	0	0
Total	17	64	5	75	11	69	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 26-30: Project details

Sl. No.	Project Name	Implementing agency
04	Construction of Floriculture Collection Marketing Centre at Rudrapur	Uttarakhand Agriculture Produce Marketing Board, Rudrapur, Udham Singh Nagar

Table 26-31: General Information regarding the implementing agency for Construction Projects

Issues\ Projects	Construction of Floriculture Collection Marketing Centre at Rudrapur
Type of construction	Warehouse
New construction/Improvement of an older construction	New
Awareness about DAP	Yes
Included in DAP	Yes
Project proposed by	Implementing agency
Level at which the project was proposed	District

Table 26-32: Fund Flow in the project

Issues\ Projects	Construction of Floriculture Collection Marketing Centre at Rudrapur
Funds required for the project in 2016-17	128 laks
Funds approved for the project in 2016-17	128 laks
Funds released for the project in 2016-17	128 laks
Number of times funding released for the project in 2016-17	2
Major problems in the release of funds	Reduced Amount

Table 26-33: Physical Capacity of the projects

Issues\ Projects	Construction of Floriculture Collection Marketing Centre at Rudrapur
Required physical capacity of the selected work. (in numbers)	Handling of 1 lakh birds at a time
Existing physical capacity excluding the current project.	0
Capacity of current project. (numbers)	1 lakh birds
Number of phases in the project	1

Table 26-34: Tendering & Maintenance regarding the project

Issues\ Projects	Construction of Floriculture Collection Marketing Centre at Rudrapur
Whether tender was called for execution of the work	Yes
e-tender issued	Yes
Opinion: e-tendering increases efficiency of tendering	Yes
Opinion: e-tendering increases transparency	Yes
Opinion: e-tendering has increased number and quality of responses from vendors	Yes, increased both quality and number of vendors
Number of days given to respond to tenders	30
Number of vendors responded to the tenders	3
Any re-bidding made	No
Selected vendor a Government / Private Organization	Private
Whether selected vendor worked with the agency before	Yes
Agency responsible for the maintenance of the constructed project in future years	Own Agency
If same agency, whether any financial provision is there in the project for maintenance in future	No

Table 26-35: Benefits and Challenges regarding the projects

Issues\ Projects		Construction of Floriculture Collection Marketing Centre at Rudrapur
Number of farmers expected to be benefitted from the construction	2017-18	50000
	2018-19	50000
	2019-20	50000
Beneficiaries from the project other than the farmers		Local Traders, Local Govt, Self Help Groups
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Warehouse, Market Share, Cold-storage ,Development cooperatives,Govt Coperatives, rural electirity, FPOs
Problems associated with the existing project		Financial
Opinion: the project will complete in stipulated time		No
Reasons for delay in project		Material Problem
Whether infrastructure is geo-tagged?		No
Reasons for not being geo-tagged		Training has not been provided

Table 26-36: Convergence with other projects

Issues\ Projects	Construction of Floriculture Collection Marketing Centre at Rudrapur
Whether any convergence with other schemes	No

27 UTTAR PRADESH

Uttar Pradesh is the fourth largest State of India, with a variety of geographical land and much cultural diversity. Geographical area of the state is 2, 36,286 sq km.⁵⁵ With a large population of 1998 lakh, the state is one of the most populous states in India. 78% of the population lives in rural areas. So, agriculture and allied services is one of the important sectors in Uttar Pradesh economy. Primary sector contributes 25.4% of the state income in 2016-17 (Advanced estimate at constant basic prices). Net sown Area in Uttar Pradesh is 166 lakh hectares in 2014-15, among which net irrigated area is 144 lakh hectares⁵⁶. The average size of holdings in the state was 0.76 hectares in 2010-11, which varies from 0.39 hectare for marginal farmers to 15.01 hectares for large farmers.⁵⁷ Major food grains cultivated in Uttar Pradesh consist of rice, wheat, sugarcane, mustard & rapeseed, tur & gram etc.

Rashtriya Krishi Vikas Yojana was started in 2014-15 in Uttar Pradesh. Under RKVY scheme, Rs. 321.98 crore was allocated, among which Rs. 201.89 crore was released and Rs. 95.96 crore was spent for Uttar Pradesh for 2016-17 till 31st July 2017. According to MIS Report, Uttar Pradesh proposed 72 projects amounting to Rs. 769.8 Crores in 2016-17. Among different sectors, animal husbandry and seed are given importance in terms of number of projects among the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 21 projects proposed with priority sectors being Innovative Programmes/ Training/ Capacity Building/ Others. In the medium-size category (cost 5 to 10 crore), highest number of projects are allocated for different 5 sectors. For large projects with cost 10 to 25 crore, priority area is Crop development. The same sector is given priority in the very large (cost > 25 crore) category. So small projects are dominated by animal husbandry, seed and crop development and large projects are by crop development 2016-17. In aggregate, crop

⁵⁵<http://up.gov.in/upstateintro.aspx>

⁵⁶ <http://updes.up.nic.in/reports/up%20in%20figures-%202017.pdf>

⁵⁷ Agriculture Statistics 2016, Ministry of Agriculture & Farmers Welfare Department of Agriculture, Cooperation & Farmers Welfare, Directorate of Economics and Statistics, Govt. of India.

development (292crore) is given highest priority both in terms of cost and in terms of number of projects. Project with highest average cost is proposed for Natural Resource Management.

This study analyses performance of RKVY for the year 2016-17 in Uttar Pradesh. We have selected 9 projects for Uttar Pradesh and analysed the performance of RKVY by collecting information through primary survey. List of selected projects for Uttar Pradesh is given below (Table 27-1).

27.1 RESULTS FROM PRIMARY SURVEY

27.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Uttar Pradesh, total 350 households are considered for the survey, among which 280 households are beneficiaries of RKVY and 70 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, the 52% of beneficiary households are marginal farmers, 77% are small farmers, 46% are medium farmers and 11% belong to large category. In the non-beneficiary households, 47% are landless, 30% are marginal, 17% are small, 4% are medium and 1% are large farmers (Table 27-2).

27.1.1.1 LAND-HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD

In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. But for medium and large category, the situation is opposite. Households depend on tube-wells

(electric and diesel) for irrigation in Kharif season. Majority of farmers use owned tube-wells (Table 27-3A & 27-3B).

We have collected separate data for land-holding and irrigation for Kharif and Rabi season. For Rabi 2016-17, the average area of operated land is higher for small farmers among the beneficiary households as compared to non-beneficiary households, while for medium and large farmers, the situation is opposite (Table 27-4A & 27-4B). Households depend on canals and tube-wells (electric and diesel) for irrigation in Kharif season.

In our sample, a total of 280 households are beneficiaries and 70 are non-beneficiaries. A total number of the population covered is 2047, among them, 1646 people belong to beneficiary households and 401 people belong to non-beneficiary households (Table 27-5). Among them in beneficiary households, 26% of the population is below 15 age group, while 8 percent are in above 60 age group. Rest 65% population in beneficiary households is in working age-group. In non-beneficiary households, 27% of the population is below 15 age groups, while 9 percent are in above 60 age group. Rest 63% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 65% population is in working age group. On the education front, 18% of the population in beneficiary group and 21% in non-beneficiary group are illiterate. 71% population in beneficiary households and 70% population in non-beneficiary households have attended school (class 1 to 12); while 9% and 7% population in beneficiary and non-beneficiary households, respectively have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife' (Table 27-6).

27.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 46% of the beneficiary households have reported income from farming. For non-beneficiary households also, 29% of households have reported farming as an occupation. 10% of beneficiary households and 5% of non-beneficiary households have reported income from dairy. 15% of beneficiary and 19% of beneficiary households have reported income from work as casual labour (Table 27-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 156492 in Uttar Pradesh while the same for non-beneficiary households is Rs. 125359 in 2016-17 (Table 27-8). Average annual income for beneficiary households was Rs. 149482 in 2015-16 while it was Rs. 119425 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy and poultry apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is also higher for beneficiary households as compared to non-beneficiary households (Table 27-8).

Table 27-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 190255 which is higher than non-beneficiaries (Rs. 166725); so is the average cost (Rs. 82800 and Rs. 78865 respectively).

In terms of percentage change in income (Table 27-10), average income has increased by 8% in farming for beneficiary and 7% for non-beneficiary households. Average cost also has increased more for beneficiary households in farming than non-beneficiary households.

27.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 27-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on electricity for irrigation, Expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that Total rent on machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and Expenditure on other fuels for agriculture are higher for beneficiaries as compared to non-beneficiaries in 2016-17. For expenditure on electricity for irrigation, non-beneficiaries incur less expenditure than beneficiaries in 2016-17.

Table 27-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in all the components for beneficiary households except rent on leased-in land.

27.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in Uttar Pradesh, for beneficiary households, majority of Weeder, Manual / Power Sprayers, Diesel Pump sets, Fodder Choppers etc are owned by marginal farmers, while small and medium farmers own majority of implements like tractor, trolley, threshers, electric pump sets, Cane Crusher / Agro-processing Equipment, Leveller etc. (Table 27-13A). In non-beneficiary households, marginal farmers own equipments like Manual / Power Sprayers, diesel pump sets, leveller, fodder chopper etc. Implements like tractor, trolley, electric pump sets etc. are mainly owned by small, medium and large farmers (Table 27-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 27-14B). Small farmers among the beneficiaries have more cows, buffalos, young stock, sheep, poultry and goat as compared to other classes.

In our sample, 20% of the households for beneficiary and 37% of non-beneficiary groups have kachha houses (Table 27-15). 56% households in beneficiary category and 44% of non-beneficiary category have pucca houses.

It is observed from our sample that 63% of beneficiary households possess TV while for non-beneficiaries; it is 41% (Table 27-16). In the case of mobile phones 98% of beneficiary and 91% of non-beneficiary households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles and two-wheelers are there, but four-wheelers are very rare. 28% of beneficiary and 17% on non-beneficiary households own refrigerator.

27.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, wheat, jowar, bajra, maize, gram, masur, urad, groundnut, mustard, sugarcane, fruit and vegetables in the majority of the cultivated area (Table 27-17). But for non-beneficiary households, the emphasis is on

paddy, wheat, bajra, maize, gram, groundnut, mustard, cotton, sugarcane and vegetables (Table 27-18). Average production of paddy is higher for beneficiary (62 qtls) and non-beneficiary households (73 qtls). Average production of groundnut and mustard is higher for non-beneficiary households as compared to beneficiary households. Price of the marketed quantity for bajra, maize and sugarcane are more for the beneficiary household vis-à-vis non-beneficiary households; while for paddy, wheat, gram, groundnut, mustard; average price is higher for non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 27-19). For wheat, bajra, maize, urad and sugarcane, marginal farmers are getting higher price as compared to small farmers for beneficiary households. But for paddy, jowar, groundnut and mustard; the situation is opposite (Table 27-19).

27.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. In our sample for Uttar Pradesh, it is seen that average income from livestock is lower for non-beneficiary households as compared to beneficiary households. All the income from livestock comes from milk for both beneficiary and non-beneficiary households (Table 27-21).

The inter-temporal comparison shows that average income from the production of milk is higher for beneficiaries in 2016-17 and 2015-16. Income from milk is higher for beneficiaries for both the years. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for beneficiaries (Table 27-22).

27.1.1.7 AWARENESS REGARDING RKVY PROGRAM

Regarding the awareness of RKVY, it is found that in our sample, 34% of non-beneficiary households are not aware of RKVY (Table 27-23). 26% households in the beneficiary category have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But 93% non-beneficiary households are deprived of any benefits throughout these years. 22% of the beneficiary households and 11% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last

five years, 65% of the beneficiary households and 66% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 27-21 that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY. It is also seen that many households who are receiving benefit from RKVY, are receiving benefits from other government schemes too. There is a need of convergence of the schemes and better monitoring of the system so that the distribution of government schemes becomes more equal in nature.

In our sample in Uttar Pradesh, the majority of the beneficiary households had received information regarding RKVY from Agriculture / Horticulture Department, Friends and neighbours; and Zila Panchayet and Gram Panchayet (Table 27-24). For non-beneficiary households, majority of the households received information from friends and neighbours, news paper and Agriculture / Horticulture Department.

27.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY (Table 27-25A). Under the project “Integrated Cereals Development Programme – Wheat, the farmers got assistance in wheat production in villages like Jorawar Nagar, Alahadadpur, Acpalgarhi etc. Under the project “Enhancing sugarcane production in UP”, farmers received assistance in production of sugarcane and paddy in villages like Nanmau, Nemapur, Beri Aalampur, Goa Majara, Kandhaipur, Viroli, Shahpur, Mohammadabad, Patmau, Chakkodar, Satya Vishama, Bijapur, Manpur, Mohanpur, Parakuwar, Sumer Nagar, Rani nagar, Bahadur Nagar and Mohkampur. Under the project “Nursery seedling raising in low tunnel polynet and production of high value vegetables”, crops like tomato, wheat, pumpkin, bitter gourd, Bottle Gourd, Cucumber, Ridge Gourd, Cabbage are produced in villages like Devkali, Dastampur, Badapur, Chirora, Badhapur, Balipur, Dhanwali, Purvaharsarai and Gulriha. Project “Eradication of Anna Pratha in Bundelkhand region” provided assistance in production of wheat in villages like Ramna kisanpur, Pachkhurd Amilia, Deogaon, Dhundhpur, Barua Sumerpur, Mauhar etc. Farmers from Jamunihan and Bangar village also got assistance in

production of paddy, wheat and maize under the project “Summer groundnut production programme on farmers’ fields”. Under project “Crop Diversification Programme” paddy is produced in villages like Abalpu, Pilkhanwali, Manshagahdi, Chidawak, Chandpur, Gangera, Behlimpur, Alipurghijhori, Sutari etc. Project “Bringing Green Revolution to Eastern India” provided assistance in production of Wheat, Paddy and Sugarcane in villages like Shiwar, Ramnagar, Bhelwal, Padari Babu, Bagapar etc. Majority of the beneficiaries are marginal farmers (Table 27-25A). The majority of the farmers have received benefit through price subsidy (Table 27-25B). Households received assistance in seed or planting materials and Bio-fertilizers and bio-control agents (Table 27-25B).

RKVY provided assistance in watershed development also in Uttar Pradesh. The development work was done under the project “summer groundnut production programme on farmers’ fields”. 17% of marginal farmers have benefitted from this intervention (Table 27-26).

In Uttar Pradesh, 66% of the farmers have reported that the soil has been tested to know the nature of the soil (Table 27-27A). Among them, 74% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 27-27B).

Within our sample in Uttar Pradesh, 24% of beneficiary households had undergone training and demonstration (Table 27-28). 87% of the households found training beneficial and want more training.

The study has also collected data on mobile usage. We found that 98% of households have mobile phones in beneficiary group and 91% of households has received text messages (Table. 64% of the households received agriculture-related SMS. 41% households received messages in local language (Table 27-29)

27.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY program as Restricted Choice, Subsidy paid after purchase while initial payment, Delay in transfer, Long time gap between the purchase and receiving the subsidy amount, Procedure for the subsidy very tedious and Lack of marketing support among others (Table 27-30A). For non-beneficiaries, major problems are: Capacity building/technical

advice not provided, Subsidy paid after purchase while initial payment, Information about RKVY programme details not easily available, Restricted Choice etc.(Table 27-30B).

According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in generating employment, increasing production, Building Infrastructure, providing financial assistance, Better price realization and Capacity Building. However, it appears that RKVY has not been very successful in post-harvesting storage, Improving marketing facilities and procurement (Table 27-31A & 27-31B).

27.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

One project was selected in Uttar Pradesh for collecting information from implementing agency -Modernization and strengthening of infrastructure of quality silk production. Type of construction in this project were chawki rearing building (silk), barbed wire fencing, and boring facilities for irrigation (Table 27-33). It is new construction, and was proposed by implementing agency at state level. Major problem is uncertainty in amount released.

Required physical capacity for this project is 24 chawki rearing centres (silk), 2 boring in government farms and barbed wire fencing in 14 government farms. Among those, targets fulfilled through this project are: 24 chawki rearing centre, 2 boring and 114.21 acre (14 government farms) barbed wire fencing (Table 27-35).

Apart from 900 farmers in 2016-17, the project benefited local traders, silk-worm rearing. Complementary/ Supplementary projects for the ongoing projects could be demonstration and extension services (Table 27-37). There is no convergence of the project with other schemes (Table 27-38).

27.2 CONCLUSION

Rashtriya Krishi Vikas Yojana was started in 2007-08 in Uttar Pradesh. Under RKVY scheme, Rs. 321.98 crore was allocated, among which Rs. 201.89 crore was released and Rs. 95.96 crore was spent for Uttar Pradesh for 2016-17 till 31st July 2017. According to MIS Report, Uttar Pradesh proposed 72 projects amounting to Rs. 769.8 Crores in 2016-17. Among different sectors, animal husbandry and seed are given importance in terms of number of projects among

the very small-sized projects (cost < 1 crore). In the category small size category (cost 1 to 5 crore), there are 21 projects proposed with priority sectors being Innovative Programmes/ Training/ Capacity Building/ Others. In the medium-size category (cost 5 to 10 crore), highest number of projects are allocated for different 5 sectors. For large projects with cost 10 to 25 crore, priority area is Crop development. The same sector is given priority in the very large (cost > 25 crore) category. So small projects are dominated by animal husbandry, seed and crop development and large projects are by crop development 2016-17. In aggregate, crop development (292 crore) is given highest priority both in terms of cost and in terms of number of projects. Project with highest average cost is proposed for Natural Resource Management.

This study analyses performance of RKVY for the year 2016-17 in Uttar Pradesh. We have selected 9 projects for Uttar Pradesh and analysed the performance of RKVY by collecting information through primary survey. The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in Uttar Pradesh, total 350 households are considered for the survey, among which 280 households are beneficiaries of RKVY and 70 are non-beneficiaries. In our sample, the 52% of beneficiary households are marginal farmers, 77% are small farmers, 46% are medium farmers and 11% belong to large category. In the non-beneficiary households, 47% are landless, 30% are marginal, 17% are small, 4% are medium and 1% are large farmers.

In our sample, for Kharif 2016-17, the average area of operated land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. But for medium and large category, the situation is opposite. Households depend on tube-wells (electric and diesel) for irrigation in Kharif season. Majority of farmers use owned tube-wells.

A total number of the population covered is 2047, among them, 1646 people belong to beneficiary households and 401 people belong to non-beneficiary households. Among them in beneficiary households, 26% of the population is below 15 age group, while 8 percent are in

above 60 age group. Rest 65% population in beneficiary households is in working age-group. In non-beneficiary households, 27% of the population is below 15 age groups, while 9 percent are in above 60 age group. Rest 63% population in non-beneficiary households is in working age-group. Taking both the groups into consideration, 65% population is in working age group. On the education front, 18% of the population in beneficiary group and 21% in non-beneficiary group are illiterate. 71% population in beneficiary households and 70% population in non-beneficiary households have attended school (class 1 to 12); while 9% and 7% population in beneficiary and non-beneficiary households, respectively have studied beyond school. Major occupation is cultivation. A major part of the population belongs to the category of 'student' or 'housewife'.

In the sample of our study, 46% of the beneficiary households have reported income from farming. For non-beneficiary households also, 29% of households have reported farming as an occupation. 10% of beneficiary households and 5% of non-beneficiary households have reported income from dairy. 15% of beneficiary and 19% of beneficiary households have reported income from work as casual labour. Average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy and poultry apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from dairy is also higher for beneficiary households as compared to non-beneficiary households.

Disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households shows that Total rent on machinery (tractor, harvester etc), Expenditure on purchased water for irrigation, Expenditure on diesel and Expenditure on other fuels for agriculture are higher for beneficiaries as compared to non-beneficiaries in 2016-17. For expenditure on electricity for irrigation, non-beneficiaries incur less expenditure than beneficiaries in 2016-17.

There is significant increase in all the components for beneficiary households except rent on leased-in land. In our sample in Uttar Pradesh, for beneficiary households, majority of Weeder, Manual / Power Sprayers, Diesel Pump sets, Fodder Choppers etc are owned by marginal

farmers, while small and medium farmers own majority of implements like tractor, trolley, threshers, electric pump sets, Cane Crusher / Agro-processing Equipment, Leveller etc. In non-beneficiary households, marginal farmers own equipments like Manual / Power Sprayers, diesel pump sets, leveller, fodder chopper etc. Implements like tractor, trolley, electric pump sets etc. are mainly owned by small, medium and large farmers.

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock. Small farmers among the beneficiaries have more cows, buffalos, young stock, sheep, poultry and goat as compared to other classes. In our sample, 20% of the households for beneficiary and 37% of non-beneficiary groups have kachha. 56% households in beneficiary category and 44% of non-beneficiary category have pucca houses. It is observed from our sample that 63% of beneficiary households possess TV while for non-beneficiaries; it is 41%. In the case of mobile phones 98% of beneficiary and 91% of non-beneficiary households have reported to possess it, for both the categories. For both the categories of households, ownership of bicycles and two-wheelers are there, but four-wheelers are very rare. 28% of beneficiary and 17% on non-beneficiary households own refrigerator.

It is seen from the sample that beneficiary households cultivated paddy, wheat, jowar, bajra, maize, gram, masur, urad, groundnut, mustard, sugarcane, fruit and vegetables in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy, wheat, bajra, maize, gram, groundnut, mustard, cotton, sugarcane and vegetables. Average production of paddy is higher for beneficiary (62 qtls) and non-beneficiary households (73 qtls). Average production of groundnut and mustard is higher for non-beneficiary households as compared to beneficiary households. Price of the marketed quantity for bajra, maize and sugarcane are more for the beneficiary household vis-à-vis non-beneficiary households; while for paddy, wheat, gram, groundnut, mustard; average price is higher for non-beneficiary households. Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For wheat, bajra, maize, urad and sugarcane, marginal farmers are getting higher price as compared to small farmers for beneficiary households. But for paddy, jowar, groundnut and mustard; the situation is opposite. Apart from cultivation, the households earn income from livestock. In our

sample for Uttar Pradesh, it is seen that average income from livestock is lower for non-beneficiary households as compared to beneficiary households. All the income from livestock comes from milk for both beneficiary and non-beneficiary households.

Regarding the awareness of RKVY, it is found that in our sample, 34% of non-beneficiary households are not aware of RKVY. 26% households in the beneficiary category have received benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year. But 93% non-beneficiary households are deprived of any benefits throughout these years. 22% of the beneficiary households and 11% of the non-beneficiary households have received some benefits from Government Schemes other than RKVY in the year 2016-17. For the last five years, 65% of the beneficiary households and 66% of the non-beneficiary households had received some benefits from Government Schemes other than RKVY in the year 2016-17. This can be easily observed from that beneficiary households have better awareness regarding RKVY or other government programs. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY. It is also seen that many households who are receiving benefit from RKVY, are receiving benefits from other government schemes too. There is a need of convergence of the schemes and better monitoring of the system so that the distribution of government schemes becomes more equal in nature.

In our sample in Uttar Pradesh, the majority of the beneficiary households had received information regarding RKVY from Agriculture / Horticulture Department, Friends and neighbours; and Zila Panchayet and Gram Panchayet. For non-beneficiary households, majority of the households received information from friends and neighbours, news paper and Agriculture / Horticulture Department.

Crop development is a very important aspect for the overall development of agriculture, in RKVY. This section looks into the aspects of crop development through RKVY. Under the project “Integrated Cereals Development Programme – Wheat, the farmers got assistance in wheat production in villages like Jorawar Nagar, Alahadadpur, Acpalgarhi etc. Under the project “Enhancing sugarcane production in UP”, farmers received assistance in production of sugarcane and paddy in villages like Nanmau, Nemapur, Beri Aalampur, Goa Majara, Kandhaipur, Viroli, Shahpur, Mohammadabad, Patmau, Chakkodar, Satya Vishama, Bijapur,

Manpur, Mohanpur, Parakuwar, Sumer Nagar, Rani nagar, Bahadur Nagar and Mohkampur. Under the project “Nursery seedling raising in low tunnel polynet and production of high value vegetables”, crops like tomato, wheat, pumpkin, bitter gourd, Bottle Gourd, Cucumber, Ridge Gourd, Cabbage are produced in villages like Devkali, Dastampur, Badapur, Chirora, Badhapur, Balipur, Dhanwali, Purvaharsarai and Gulriha. Project “Eradication of Anna Pratha in Bundelkhand region” provided assistance in production of wheat in villages like Ramna kisanpur, Pachkhurd Amilia, Deogaon, Dhundhpur, Barua Sumerpur, Mauhar etc. Farmers from Jamunihan and Bangar village also got assistance in production of paddy, wheat and maize under the project “Summer groundnut production programme on farmers’ fields”. Under project “Crop Diversification Programme” paddy is produced in villages like Abalpu, Pilkhanwali, Manshagahdi, Chidawak, Chandpur, Gangera, Behlimpur, Alipurghijhori, Sutari etc. Project “Bringing Green Revolution to Eastern India” provided assistance in production of Wheat, Paddy and Sugarcane in villages like Shiwar, Ramnagar, Bhelwal, Padari Babu, Bagapar etc. Majority of the beneficiaries are marginal farmers. The majority of the farmers have received benefit through price subsidy. Households received assistance in seed or planting materials and Bio-fertilizers and bio-control agents. RKVY provided assistance in watershed development also in Uttar Pradesh. The development work was done under the project “summer groundnut production programme on farmers’ fields”. 17% of marginal farmers have benefitted from this intervention.

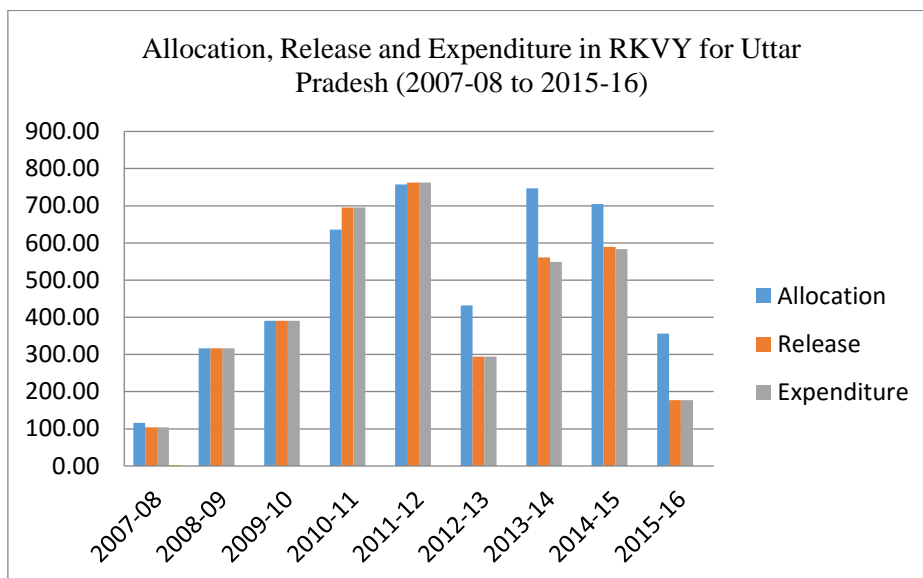
In Uttar Pradesh, 66% of the farmers have reported that the soil has been tested to know the nature of the soil. Among them, 74% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in Uttar Pradesh, 24% of beneficiary households had undergone training and demonstration. 87% of the households found training beneficial and want more training. The study has also collected data on mobile usage. We found that 98% of households have mobile phones in beneficiary group and 91% of households has received text messages. 64% of the households received agriculture-related SMS. 41% households received messages in local language.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY program as Restricted Choice, Subsidy paid after purchase while

initial payment, Delay in transfer, Long time gap between the purchase and receiving the subsidy amount, Procedure for the subsidy very tedious and Lack of marketing support among others. For non-beneficiaries, major problems are: Capacity building/technical advice not provided, Subsidy paid after purchase while initial payment, Information about RKVY programme details not easily available, Restricted Choice etc..

According to the feedback from the beneficiary respondents about the success of RKVY program, it is stated that the program is successful in generating employment, increasing production, Building Infrastructure, providing financial assistance, Better price realization and Capacity Building. However, it appears that RKVY has not been very successful in post-harvesting storage, Improving marketing facilities and procurement.

Figure 27-1: Allocation, Release and Expenditure in RKVY for Uttar Pradesh (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 27-1: List of selected project name and code

Project Code	Project Name
1	Integrated Cereals Development Programme – Wheat (H)
2	Infrastructure development for government agriculture farms (IA)
3	Enhancing sugarcane production in UP (H)
4	Nursery seedling raising in low tunnel polynet and production of high value vegetables (H)
5	Modernization and strengthening of infrastructure of quality silk production (IA)
6	Eradication of Anna Pratha in Bundelkhand region (H)
7	Summer groundnut production programme on farmers' fields
8	Crop Diversification Programme (H)
9	Bringing Green Revolution to Eastern India (H)

Table 27-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number)(% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	1(0)	33(47)	34(10)
Marginal	145(52)	21(30)	166(47)
Small	77(28)	12(17)	89(25)
Medium	46(16)	3(4)	49(14)
Large	11(4)	1(1)	12(3)
Total	280(100)	70(100)	350(100)

Table 27-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.2	1.5	3.4	5.6	7.9
Leased-in Land / share cropping (acre)				0.9	2.0	3.9	8.8
Leased-out Land / share cropping (acre)			0.2	4.8	5.0		
Total operated area (owned+LI-LO) (acre)				1.4	3.5	6.6	12.9
Irrigated Area by canal (%)				16.4	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rente d	Electric		20.5	0.0	0.0	0.0
		Diesel		15.6	24.1	41.1	0.0
	Owne d	Electric		22.1	34.9	26.3	47.3
		Diesel		25.4	41.0	32.6	52.7
Irrigated Area by Tanks (%)				0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)				0.0	0.0	0.0	0.0
Irrigated Area by others (%)				0.0	0.0	0.0	0.0

Table 27-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			4.7	1.2	2.7	8.3	25.0
Leased-in Land / share cropping (acre)				1.5	1.5		
Leased-out Land / share cropping (acre)			4.7				
Total operated area (owned+LI-LO) (acre)				1.3	3.0	8.3	25.0
Irrigated Area by canal (%)				0.0	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rente d	Electric		27.9	0.0	0.0	0.0
		Diesel		31.4	0.0	0.0	0.0
	Owne d	Electric		0.0	55.9	44.0	100.0
		Diesel		40.6	44.1	56.0	0.0
Irrigated Area by Tanks (%)				0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)				0.0	0.0	0.0	0.0

Irrigated Area by others (%)				0.0	0.0	0.0	0.0
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Table 27-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Land less	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.2	1.7	4.0	6.1	10.7
Leased-in Land / share cropping (acre)				0.8	2.2	4.4	13.9
Leased-out Land / share cropping (acre)			0.2	4.8	5.0		
Total operated area (owned+ LI-LO) (acre)				1.5	4.2	7.6	22.1
Irrigated Area by canal (%)				21.8	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rente d	Electric		13.6	0.0	0.0	0.0
		Diesel		14.3	0.0	37.0	0.0
	Owne d	Electric		26.4	52.6	31.9	60.3
		Diesel		24.0	47.4	31.1	39.7
Irrigated Area by Tanks (%)				0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)				0.0	0.0	0.0	0.0
Irrigated Area by others (%)				0.0	0.0	0.0	0.0

Table 27-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landl ess	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			4.7	1.5	3.4	8.3	25.0
Leased-in Land / share cropping (acre)				1.5	2.0		
Leased-out Land / share cropping (acre)			4.7				
Total operated area (owned+ LI-LO) (acre)				1.5	3.7	8.3	25.0
Irrigated Area by canal (%)				0.0	0.0	0.0	0.0
Irrigated Area by tube-well (%)	Rente d	Electri c		18.4	0.0	0.0	0.0
		Diesel		23.0	0.0	0.0	0.0
	Owne d	Electri c		27.6	53.1	44.0	100.0
		Diesel		30.9	46.9	56.0	0.0
Irrigated Area by Tanks (%)				0.0	0.0	0.0	0.0
Irrigated Area by Wells (%)				0.0	0.0	0.0	0.0

Irrigated Area by others (%)				0.0	0.0	0.0	0.0
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Table 27-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	26	27	27
	>15 to 25	23	25	24
	>25 to 40	23	19	22
	>40 to 59	19	20	19
	>59	8	9	8
	All Groups	100	100	100
Education	Illiterate	18	21	19
	Class 1 to 5	20	25	21
	Above Class 5 to 8	13	13	13
	Above Class 8 to 12	38	32	37
	Above Class 12	9	7	8
	Other diploma	0	0	0
	can read and write	0	0	0
	can read only	0	0	0
	can count only	0	0	0
	could not attend class 1	2	2	2
	All Groups	100	100	100

Table 27-6: Occupational distribution of members of sample households (%)

	Beneficiary	Non-Beneficiary	Total
cultivation	18	43	11
agricultural labour	1	2	4
dairy	0	0	0
casual labour	5	13	10
self-employment	2	2	1
salaried employment	8	38	9
Student	31	0	31
housewife	23	0	19
non-working	12	0	13
others (no separate income)	1	2	1
All Groups	100	100	100

Table 27-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	46	29
Dairy	10	5
Agricultural Labour	3	11
Casual Labour	15	28
Salary	17	19
Other	9	7
Total	100	100

Table 27-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	204699	91951	112748	177750	84068	99988
Dairy	61667	27783	33883	37857	16857	21000
Poultry	35000	15000	20000			
Agricultural Labour	32222		32222	30667		30667
Casual Labour	60685	17500	60292	59128	10000	58872
Salary	218208	26303	195030	237923	20000	220231
Other	100982	49571	63804	84720	33857	61020
Total	156492	67218	89274	125359	52473	72886

Table 27-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	190255	82800	107455	166725	78865	87860
Dairy	49726	22295	27790	33000	17000	16000
Poultry	30000	12000	18000			0
Agricultural Labour	30722		30722	26933		26933
Casual Labour	56404	13500	56101	53231	15000	38231
Salary	203525	25258	180818	222308	18391	203916
Other		37814		40000	31000	9000
Total	149482	59610	89872	119425	49662	69763

Table 27-10: Change in Average income and cost of beneficiaries and non-beneficiaries(%) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	8	11	5	7	7	14
Dairy	24	25	22	15	-1	31
Poultry	17	25	11			
Agricultural Labour	5		5	14		14
Casual Labour	8	30	7	11	-33	54
Forestry		-100				
Salary	7	4	8	7	9	8
Other		31		112	9	578

Table 27-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	40350	18750	40175	18750
Total rent on machinery (tractor, harvester etc)	12906	10863	11683	10594
Expenditure on purchased water for irrigation	3713	3620	3394	3300
Expenditure on electricity for irrigation	6039	7367	5914	7211
Expenditure on diesel	16262	10732	15274	10496
Expenditure on other fuels for agriculture	1883	1127	1592	773
Any other	58963	61168	53938	56714
<i>Total expenditure on agriculture</i>	88655	44286	81924	41540

Table 27-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	0	0
Total rent on machinery (tractor, harvester etc)	8	5
Expenditure on purchased water for irrigation	5	-13
Expenditure on electricity for irrigation	5	3
Expenditure on diesel	9	-6
Expenditure on other fuels for agriculture	21	-7
Any other	15	16
<i>Total expenditure on agriculture</i>	12	11

Table 27-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary					
	Landless	Marginal	Small	Medium	Large	Total
Tractor	0.0	22.4	32.9	31.6	13.2	100
Trolley	0.0	22.4	32.9	31.6	13.2	100
Weeder	0.0	50.0	25.0	25.0	0.0	100
Manual / Power Sprayers	0.0	44.2	27.9	22.7	5.2	100
Threshers	0.0	10.3	27.6	37.9	24.1	100
Drier	0.0	0.0	0.0	0.0	100.0	100
Electrical Pump sets	0.0	32.8	35.9	22.7	8.6	100
Diesel Pump sets	0.0	43.5	27.9	23.8	4.8	100
Cane Crusher / Agro-processing Equipment	0.0	0.0	50.0	50.0	0.0	100
Leveller	0.0	26.9	40.4	21.2	11.5	100
Fodder Choppers	0.4	51.3	26.1	17.4	4.8	100
Bullock cart	0.0	25.0	37.5	37.5	0.0	100
Others	0.0	31.1	39.3	21.3	8.2	100

Table 27-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

Assets	Non-Beneficiary					
	Landless	Marginal	Small	Medium	Large	Total
Tractor	0.0	16.7	16.7	50.0	16.7	100
Trolley	0.0	16.7	16.7	50.0	16.7	100
Manual / Power Sprayers	3.4	62.1	20.7	10.3	3.4	100
Threshers	0.0	0.0	0.0	0.0	100.0	100
Electrical Pump sets	0.0	20.0	50.0	20.0	10.0	100
Diesel Pump sets	7.4	51.9	33.3	7.4	0.0	100
Leveller	0.0	33.3	0.0	33.3	33.3	100
Fodder Choppers	26.7	40.0	26.7	4.4	2.2	100
Others	0.0	0.0	0.0	50.0	50.0	100

Table 27-14A: Livestock ownership by beneficiary households (2016-17)(% of number of livestock)

Livestock	Beneficiary					
	Landless	Marginal	Small	Medium	Large	Total
Cow	0.8	44.8	28.0	20.0	6.4	100
Buffalo	0.0	45.0	28.8	20.6	5.6	100
Young Stock	0.0	51.5	22.7	21.2	4.5	100
Male Draught	0.0	50.0	31.3	18.8	0.0	100
Goat	0.0	63.2	31.6	0.0	5.3	100
Poultry	0.0	100.0	0.0	0.0	0.0	100

Table 27-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	20	37	24
Pucca	56	44	54
Semi-Pucca	24	19	23
Others	0	0	0
Total	100	100	100

Table 27-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	63	37	100	41	59	100
Telephone	0	100	100	1	99	100
Mobile phone	98	2	100	91	9	100
Cycle	83	17	100	80	20	100
Two wheeler	61	39	100	41	59	100
Four-wheeler	4	96	100	7	93	100
Refrigerator	28	72	100	17	83	100

Table 27-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs.)	Profitability
paddy	2.6	2.6	61.8	59.2	1304	33003	44186
wheat	2.7	2.7	54.0	50.2	1552	28953	49000
jowar	1.2	1.2	21.3	18.7	1027	9083	10081
bajra	2.3	2.3	25.1	21.9	1034	8875	13817
maize	1.8	1.8	31.7	31.1	1274	16552	23042
gram	1.6	1.6	7.6	7.8	4414	12750	21618
masur	1.8	1.8	7.0	6.3	3425	10500	10906
urad	1.5	1.5	7.9	7.3	3850	13250	14663
other pulses	2.4	2.4	11.9	11.4	2435	11625	16012
groundnut	0.7	0.7	6.5	5.5	2405	6391	6876
mustard	1.5	1.5	8.4	7.8	3289	11389	14236
sugarcane	3.3	3.3	786.9	786.9	306	99514	141160
fruit	5.0	5.0	50.0	40.0	2500	60000	40000
vegetable	3.8	3.8	265.9	265.0	696	77009	107295

Table 27-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivate d Area (in Acres)	Irrigate d Area (in Acres)	Productio n (Qtls)	Markete d Quantity (Qtls)	Price receive d (per qtl)	Total paid- out costs (Rs.)	Profitabilit y
paddy	3.9	3.9	75.6	72.8	1399	46650	55291
wheat	2.9	2.9	59.0	53.9	1553	36629	46986
bajra	1.0	1.0	7.5	6.5	1000	3500	3000
maize	1.5	1.5	29.7	29.3	1227	16682	19244
gram	2.0	2.0	9.0	8.0	4600	12000	24800
other pulses	1.0	1.0	6.0	5.0	2300	5500	6000
groundnut	0.5	0.5	4.5	4.1	2450	4500	5423
mustard	0.8	0.8	4.6	4.1	3340	5900	7794
cotton	1.0	1.0	6.0	6.0	4000	8000	16000
sugarcane	2.0	2.0	501.7	501.7	304	62667	89924
vegetable	0.7	0.7	54.6	53.8	736.2	16942. 3	22654.3

Table 27-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large	Landless	Marginal	Small	Medium	Large
paddy		1282	1359	1302	1119		1442	1254	1433	1600
wheat		1560	1531	1567	1540		1551	1554	1560	1550
jowar		1000	1093	940						
bajra		1150	1060	993	850			1000		
maize		1305	1300	1229	1200		1242	1213	1200	
gram			4400	4700	4333				4600	
masur		3600		3250	3600					
urad		4000	3800							
other pulses		2300	2383	2867	2300			2300		
groundnut		2414	2500	2267			2500	2400		
mustard		3244	3283	3277	3367		3300	3350		
sugarcane		307	302	308	312			302	315	

Table 27-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Lan dles s	Margi nal	Small	Mediu m	Large	Lan dles s	Margin al	Small	Mediu m	Lar ge
paddy		1238	1321	1251	1085		1397	1213	1397	1560
wheat		1516	1487	1518	1496		1511	1516	1497	1510
jowar		930	1100	850						
bajra		1087	990	933	800			925		
maize		1242	1250	1204	1140		1192	1165	1150	
gram			4187	4500	4293				4300	
masur		3560		3000	3550					
urad		3800	3717							
other pulses		2180	2338	2767	2240			2245		
groundn ut		2314	2400	2233			2400	2300		
mustard		3158	3139	2877	3316		3250	3337		
sugarcane		300	296	301	310			303	300	

Table 27-21: Distribution of income from livestock

	2016-17			
	Beneficiary		Non-Beneficiary	
Items	% of Total Income	Average Annual income (Rs.)	% of Total Income	Average Annual income (Rs.)
Milk	100	62153	100	37857
TOTAL	100	13096	100	3786

Table 27-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non- beneficiaries (Rs.)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	64	51	24	15

Table 27-23: Awareness regarding RKVY (2016-17)(%)

	Beneficiary			Non-Beneficiary			Total		
	Yes	No	over all	Yes	No	over all	Yes	No	over all
Have you heard about Rashtriya Krishi Vikas Yojana?	100	0	100	34	66	100	87	13	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the year 2016-17?	100	0	100	0	100	100	80	20	100
Did you receive any benefits from Rashtriya Krishi Vikas Yojana in the last five years excluding this year?	26	74	100	7	93	100	22	78	100
Did you receive any benefits from any Government Scheme other than RKVY in the year 2016-17?	22	78	100	11	89	100	20	80	100
Did you receive any benefits from any Government Scheme other than RKVY in the last five years excluding this year?	65	35	100	34	66	100	59	41	100

Table 27-24: Source of Awareness regarding RKVY (2016-17) (%)

	Beneficiary	Non-Beneficiary
Friends & neighbours	19.6	58.3
News Paper	1.8	37.5
Agriculture / Horticulture Department	64.3	4.2
SAU	0	0
KVK	0	0
Input Suppliers	1.8	0
TV/ Radio	0	0
Agri. Exhibitions	0	0
ZP/GP	12.5	0
Other sources	0	0
Total	100	100

Table 27-25A: Distribution of farmers in crop development (in 2016-17) in Uttar Pradesh for beneficiaries

	Crop1	Bio-fertilizers and bio-control agents
Landless	0	0
Marginal	47	100
Small	28	0
Medium	19	0
Large	6	0
Total	100	100

Table 27-25B: Details of Interventions made under crop development (in 2016-17) in Uttar Pradesh for beneficiaries

		Seeds / planting materials	Bio-fertilizers and bio-control agents
No of beneficiary of RKVY		141	1
Average actual cost of these materials (Rs.)		7749	270
Whether Material or Subsidy received from RKVY (%)			
	Material	0	0
	Subsidy	100	100
If Material, quantity supplied (Kg)		0	0
If subsidy, then	quantity of subsidized input (Kg) (average)	491	500
	Unit price (average)	9599	5400
	Price paid by beneficiary (average)	1170	0
	Market price (average)	2946	27000
	Amount of subsidy (average)	1777	27000
If Subsidy, Nature of subsidy (%)			
	Price Subsidy	0	100
	DBT	100	0
If DBT, the total amount received as DBT (Rs.)		18	0
If DBT, average number of days taken to receive the amount in your bank account?		0	0
Area in acres		0	1

Table 27-26: Details of Interventions made under watershed development (in 2016-17) in Uttar Pradesh for beneficiaries

	No. of beneficiaries	No. of households received subsidy	No. of households received subsidy (%)
Landless	1	0	0
Marginal	145	17	12
Small	77	17	22
Medium	46	3	7
Large	11	3	27
Total	280	40	14

Table 27-27A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

Land size	Whether soil is tested in your area?			soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless	0	100	100	-	-	-
Marginal	44.1	55.9	100	70.3	29.7	100
Small	81.8	18.2	100	76.2	23.8	100
Medium	100	0	100	65	34.8	100
Large	100	0	100	100	0	100
Total	65.9	34.1	100	74.2	25.8	100
Non-beneficiary						
Landless	3.0	97.0	-	0.0	100.0	-
Marginal	57.1	42.9	100	83.3	16.7	100
Small	66.7	33.3	100	62.5	37.5	100
Medium	100	0	-	100	0	-
Large	100	0	100	100	0	100
Total	64.9	35.1	100	79.2	20.8	100

Table 27-27B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Don't know
Beneficiaries			
Landless	-	-	-
Marginal	100	0	0
Small	100	0	0
Medium			
Large	100	0	0
Total	100	0	0
Non-beneficiaries			
Landless			
Marginal	100	0	0
Small	100	0	0
Medium			
Large	100	0	0
Total	100	0	0

Table 27-28: Information regarding training and demonstration among beneficiaries under RKVY (% of households) (2016-17)

	Numb er of Benef iciarie s	% of beneficiary households undergone training	Type of training				% of households found training beneficial	% of household s who want more training
			Dem onstr ation	Field Visit	Kris hiM ela	Othe rs		
Landless	1	100	100	0	0	0	100	100
Marginal	145	35	65	2	33	0	88	96
Small	77	6	60	0	40	0	80	100
Medium	46	17	88	0	13	0	88	88
Large	11	27	100	0	0	0	67	100
Total	280	24	69	1	29	0	87	96

Table 27-29: Information regarding mobile usage among beneficiaries and non-beneficiaries under RKVY (% of households) (2016-17)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	100	100	0	0	0
Marginal	97	86	47	29	0
Small	100	97	75	45	0
Medium	100	96	89	67	0
Large	100	100	100	64	0
Total	98	91	64	41	0
Non-Beneficiary					
Landless	85	70	0	0	0
Marginal	100	90	33	5	0
Small	100	92	17	8	0
Medium	100	100	33	33	0
Large	100	100	0	0	0
Total	93	81	14	4	0

Table 27-30A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	100	50	43	26	45	44
Contact details of the department which pay subsidy not available	0	39	36	26	45	36
Eligibility or criteria for availing the subsidy not known	0	45	55	63	36	50
Procedure for the subsidy very tedious	100	54	64	57	64	58
No of documents required for availing subsidy are too many	100	50	52	35	64	49
Subsidy paid after purchase while initial payment remains the highest problem	0	62	68	67	64	64
Delay in transfer	0	65	70	72	45	66
Prescribed machinery/asset not easily available in the market	100	42	47	43	36	44
Institutional financing facility not available	0	48	52	46	64	49
Capacity building/technical advice not provided	0	47	52	50	55	49
Long time gap between the purchase and receiving the subsidy amount	0	59	61	50	73	58
Biased towards large land owners	0	49	39	33	18	42
Poor quality of materials/machinery are supplied	100	50	56	61	73	55
Implementing agencies are located far away	100	50	60	57	55	54
Incidence of bribery	0	47	57	61	45	52
Lack of monitoring	0	52	58	50	55	53
Complementary inputs not available	0	50	62	57	73	55
Restricted Choice	100	53	66	72	45	60
Lack of marketing support	0	52	61	63	45	56
Any other	0	0	0	0	0	0

Table 27-30B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	91	48	58	33	0	69
Contact details of the department which pay subsidy not available	76	38	75	33	0	61
Eligibility or criteria for availing the subsidy not known	64	29	67	67	0	53
Procedure for the subsidy very tedious	55	81	67	100	100	67
No of documents required for availing subsidy are too many	73	52	50	33	100	61
Subsidy paid after purchase while initial payment remains the highest problem	79	67	67	100	100	74
Delay in transfer	70	62	67	0	0	63
Prescribed machinery/asset not easily available in the market	67	48	58	67	100	60
Institutional financing facility not available	70	52	75	100	0	66
Capacity building/technical advice not provided	97	48	75	33	0	74
Long time gap between the purchase and receiving the subsidy amount	67	29	50	33	0	50
Biased towards large land owners	39	62	75	33	100	53
Poor quality of materials/machinery are supplied	67	62	58	67	0	63
Implementing agencies are located far away	76	67	42	33	0	64
Incidence of bribery	67	57	58	67	100	63
Lack of monitoring	76	67	58	0	100	67
Complementary inputs not available	64	48	50	67	0	56
Restricted Choice	76	52	92	100	0	71
Lack of marketing support	67	67	58	67	0	64
Any other	0	0	0	0	0	0

Table 27-31A: Opinion of beneficiary households about RKVY program (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	2.9	0.0	2.9	0.0	0.0	2.9	0.0	2.9	0.0	2.9
Marginal	63.9	23.5	72.9	14.5	51.2	36.1	54.8	32.5	56.0	18.1
Small	61.8	24.7	67.4	19.1	40.4	46.1	65.2	21.3	61.8	49.4
Medium	63.3	30.6	83.7	10.2	38.8	55.1	55.1	38.8	63.3	30.6
Large	58.3	33.3	83.3	8.3	58.3	33.3	50.0	41.7	75.0	16.7
Total	57.1	22.9	66.6	13.4	42.0	38.0	52.0	28.0	53.7	26.3

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 27- 31B: Opinion of beneficiary households about RKVY program (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	2.9	0.0	2.9	0.0	2.9	0.0	0.0	0.0
Marginal	62.0	25.3	55.4	31.9	42.8	44.6	0.0	0.0
Small	57.3	29.2	61.8	24.7	46.1	40.4	0.0	0.0
Medium	71.4	22.4	67.3	26.5	30.6	63.3	0.0	0.0
Large	58.3	33.3	50.0	41.7	58.3	33.3	0.0	0.0
Total	56.3	23.7	53.4	26.6	38.6	41.4	0.0	0.0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 27-32: Details of the projects

Sl. No	Project Name	Implementing agency
01	Integrated Cereals Development Programme – Wheat (H)	Director of Agriculture, Lucknow, UP
03	Enhancing sugarcane production in UP (H)	Sugarcane Development, 17 new berry road, Lucknow, UP
04	Nursery seedling raising in low tunnel polynet and production of high value vegetables (H)	Directorate of Horticulture , Sapru marg, Lucknow, UP
05	Modernization and strengthening of infrastructure of quality silk production (IA)	Directorate of Sericulture, Lucknow, UP
06	Eradication of Anna Pratha in Bundelkhand region (H)	Directorate of Animal Husbandry , Badshah bagh, Lucknow, UP
07	Summer groundnut production programme on farmers' fields (H)	C.S.Azad University of Ag. & Tech., Kanpur-208002
08	Crop Diversification Programme (H)	Project coordination unit, UPDASP. 4th floor, b-1, b-2 block, Picup Bhawan, Vibhuti khand, Gomti nagar, Lucknow-226010
09	Bringing Green Revolution to Eastern India (H)	Krishi Bhavan, Lucknow

Table 27-33: General Information regarding the implementing agency for construction project

Issues\ Projects	Modernization and strengthening of infrastructure of quality silk production (IA)
Type of construction	Chawki rearing building, barbed wire fencing, boaring for irrigation facility
New construction/Improvement of an older construction	New
Awareness about DAP	Yes
Included in DAP	No
Project proposed by	Implementing Agency
Level at which the project was proposed	State

Table 27-34: Fund Flow in the project

Issues\ Projects	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)
Funds required for the project in 2016-17	Rs.1050.5 lakh
Funds approved for the project in 2016-17	Rs.1050.5 lakh
Funds released for the project in 2016-17	Rs.991.08 Lakh
Number of times funding released for the project in 2016-17	3
Major problems in the release of funds	Uncertainty in amount released

Table 27-35: Physical Capacity of the projects

Issues\ Projects	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)
Required physical capacity of the selected work. (in numbers)	24 chawki rearing centre acre of chawki rearing 20000 DFLS annual. 2 boaring of government farm and barbed wire fencing 14 govt farms
Existing physical capacity excluding the current project.	162 chawki rearing centre , 148 boaring and 3619.83 acres barbed wire fencing on govt farm
Capacity of current project. (numbers)	24 chawki rearing centre, 2 boaring and 114.21 acre(14 govt farms) barbed wire fencing
Number of phases in the project	1 year project

Table 27-36: Tendering & Maintenance regarding the project

Issues\ Projects	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)
Whether tender was called for execution of the work	Yes
e-tender issued	Yes
Opinion: e-tendering increases efficiency of tendering	Yes
Opinion: e-tendering increases transparency	Yes
Opinion: e-tendering has increased number and quality of responses from vendors	Yes
Number of days given to respond to tenders	21
Number of vendors responded to the tenders	8 vendors
Method for evaluating the tenders	Technical criteria and financial criteria
Any re-bidding made	No
Selected vendor a Government / Private Organization	Private
Whether selected vendor worked with the agency before	Yes
Agency responsible for the maintenance of the constructed project in future years	Own agency
If same agency, whether any financial provision is there in the project for maintenance in future	No

Table 27-37: Benefits and Challenges regarding the projects

Issues\ Projects		Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)
Number of farmers expected to be benefitted from the construction	2017-18	900
	2018-19	1200
	2019-20	1200
Beneficiaries from the project other than the farmers		Local traders, silk-warm rearing
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries		Demonstration, and extension services
Project needs enhancement / improvement		No
Opinion: the project will complete in stipulated time		Yes
Whether infrastructure is geo-tagged?		work underprogress

Table 27-38: Convergence with other projects

Issues\ Projects	Creation of dairy infrastructures to handle enhanced milk procurement by OMFED (IA)	Developments of tanks and ponds for intensive aquaculture (IA).
Whether any convergence with other schemes	No	

28 WEST BENGAL

West Bengal is situated in eastern region of India with the geographic area of 88752 square kilometres. Around 72% of the population lives in rural areas in the state. Agriculture sector is one of the key sectors in the economy with its share of 14.84% in Gross value added at factor cost in 2015-16 (Economic Review of West Bengal 2015-16). Gross cropped area in West Bengal is 9530 thousand hectare in 2009-10⁵⁸. West Bengal produces 7.05% of the total food grain produced in India in 2015-16 (Agricultural Statistics 2016). Among the total cropped area, 58.9% is irrigated in West Bengal. Major crop is paddy, which has a share of 15.10% of the All-India production. Among the cash-crops, Jute and Mesta are produced in West Bengal, which stands for 74.31% of All-India production.

RKVY was started in 2007-08 in West Bengal. Under RKVY scheme, Rs. 352.47 Crore was allocated for West Bengal during 2016-17, among which Rs. 280.78 Crore has been released and Rs. 167.74 Crore is spent (and UC received for that) till 31st July 2017. According to MIS report, West Bengal proposed 50 projects amounting to Rs. 46.6 Crores in 2016-17. Cooperatives and Cooperation is the priority sector the very small-sized projects (cost < 1 crore), fisheries in small size category (cost 1 to 5 crore) and cooperatives and cooperation in the medium-size category (cost 5 to 10 crore). For large projects with cost 10 to 25 crore, priority areas are Agriculture mechanization, crop development and fisheries. Crop development is the only sector in the very large (cost > 25 crore) category with emphasis for paddy development as sub-sector. So small projects are dominated by cooperatives and cooperation and fisheries and large projects are by crop development in 2016-17. Figure 28-1 shows allocation, release and expenditure in RKVY in West Bengal over the years 2007-08 to 2015-16.

⁵⁸ <http://wbagrmarketingboard.gov.in/Area/Grosscropped.html>

This study analyses performance of RKVY for the year 2016-17 in West Bengal. We have selected eight projects for West Bengal and analysed the performance of RKVY by collecting primary information. List of selected projects for West Bengal is given below (Table 28-1).

28.1 RESULTS FROM PRIMARY SURVEY

28.1.1 RESULTS FROM HOUSEHOLD SURVEY

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption and investment in agriculture. Data is collected in disaggregated form for all these sources and analysed. The respondents are also asked about the reach of the benefits to the ultimate consumers and how it is benefitting the cultivators.

In our sample in West Bengal, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. The households are categorized based on their operated area of land. Landless, marginal (less than 2.5 acre), small (2.5 to 5 acres), medium (5 to 10 acres) and large (more than 10 acres) are the land categories analyzed.

In our sample, the majority of the beneficiary households (90.8% of beneficiary households) are marginal farmers, 7.5% are small farmers, and 1.7% belongs to landless category. There is no sample household for medium and large category. In the non-beneficiary households, 20% are landless, 23% is marginal and 3.3% is small farmers (Table 28-2).

28.1.1.1 *LAND HOLDINGS AND AVERAGE LAND SIZE OF SAMPLE HOUSEHOLD*

In our sample, for kharif 2016-17, the average area of owned land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. Households depend on canals, tube well (electric and diesel both) and tanks for irrigation in kharif season (Table 28-3A & 28-3B).

We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi 2016-17 also, the average area of owned land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households (Table 28-4A &

28-4B). Sources of irrigation for households are same for rabi season like kharif season: canals, tube wells and tanks.

In our sample, a total of 120 households are beneficiaries and 30 are non-beneficiaries. A total number of the population covered is 704, among them, 570 people belong to beneficiary households and 134 people belong to non-beneficiary households (Table 28-5). Among them in beneficiary households, 17.5% of the population is in below 15 age group, while 11.6% are in above 60 age group. Rest 70.9% population in beneficiary households is in working-age-group. In non-beneficiary households, 24.6% of the population is below 15 age-groups, while 10.4% are in above 60 age group. Rest 64.9% population in non-beneficiary households is in working-age-group. Taking both the groups into consideration, 69.7% population is in working-age group. On the education front, 14.4% of the population in beneficiary group and 14.2% of non-beneficiary group is illiterate. 75.1% population in beneficiary households and 75.4% population in non-beneficiary households have attended school (class 1 to 12); while 8.8% population in beneficiary households and 6% population in non-beneficiary households have studied beyond school. Major occupation is cultivation, while some members of the households are casual labour, self-employed or salaried employees. Fishing is another source of living. A major part of the population belongs to the category of 'student' or 'housewife'. (Table 28-6)

28.1.1.2 SOURCE OF INCOME OF SAMPLE HOUSEHOLDS

In the sample of our study, 44% of the beneficiary households have reported income from farming. For non-beneficiary households, 43% of households have reported farming as an occupation. Apart from farming, income is reported from dairy, agriculture labour, casual labour, fishing and salary. More households have reported income for non-beneficiary households from salary and casual labour as compared to the beneficiary households (Table 28-7).

Average annual income of the sample beneficiary households in aggregate is Rs. 71835 in West Bengal while the same for non-beneficiary households is Rs. 42464 in 2016-17 (Table 28-8). Average annual income for beneficiary households was Rs. 68039 in 2015-16 while it was Rs. 42464 for non-beneficiary households in the same year. This clearly shows that average income for beneficiary households are higher than non-beneficiary households and it has increased from

2015-16 to 2016-17. Major sources of income are farming, dairy, poultry, fishing apart from agriculture labour, casual labour, salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from salary is also higher for beneficiary households (Table 28-8).

Table 28-9 describes the average income and average cost of the beneficiary and non-beneficiary households in 2015-16 for the same households. For farming, average income of beneficiary households is Rs. 66317 which is higher than non-beneficiaries (Rs. 42917); so is the average cost (Rs. 28545 and Rs. 18025 respectively).

In terms of percentage change in income (Table 28-10), average income has increased by 19% in farming for beneficiary and 18% for non-beneficiary households. However, the average cost has increased by same proportion both for beneficiary and non-beneficiary households in farming. Profitability has decreased for fishing both for beneficiary and non-beneficiary households.

28.1.1.3 EXPENDITURE OF SAMPLE HOUSEHOLDS

Table 28-11 provides the disaggregated level of annual expenditure on agriculture by the beneficiary and non-beneficiary households. Households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation and expenditure on diesel are higher for non-beneficiaries than beneficiaries.

Table 28-12 shows the percentage increase in expenditure on different components of inputs for beneficiary households in 2016-17 over 2015-16. It is evident that there is significant increase in expenditure on electricity for irrigation for non-beneficiary households.

28.1.1.4 OWNERSHIP OF AGRICULTURAL IMPLEMENTS

In our sample in West Bengal, for beneficiary households, small farmers have some large agricultural implements like tractor and trolley. Marginal and small farmers have more access

to implements like manual/power sprayers, threshers, electrical pump sets and fodder chopper (Table 28-13A). In non-beneficiary households, farmers own similar equipment (Table 28-13B).

Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock (Table 28-14A). Marginal and small farmers have cow, young stock, goats and poultry animals.

In our sample, 27% of the households for beneficiary and 10% of non-beneficiary groups have pucca houses (Table 28-15). 31% of beneficiary households and 57% of non-beneficiary households have kachha houses.

It is observed from our sample that 88% of beneficiary households possess TV while for non-beneficiaries, it is 72% (Table 28-16). In the case of mobile phones 80% of beneficiary and 100% of non-beneficiary households have reported to possess it. Both beneficiary and non-beneficiary households own bicycles, two-wheelers and refrigerator; while beneficiary households did not report to own four-wheelers.

28.1.1.5 PROFITABILITY OF PRINCIPAL CROPS

It is seen from the sample that beneficiary households cultivated paddy, pulses (tur, masur, moong), mustard and vegetables in the majority of the cultivated area (Table 28-17). But for non-beneficiary households, the emphasis is on paddy sunflower, mustard and vegetables (Table 28-18). Average production of paddy is higher for beneficiary households (32.06 qtls) as compared to non-beneficiary households (24.08 qtls). Price of the marketed quantity for paddy and mustard are also more for the beneficiary household vis-à-vis non-beneficiary households.

Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17 (Table 28-19). For the majority of the crops, both for beneficiary and non-beneficiary households, marginal farmers are getting less prices. This is evident from the Table 28-19 which shows lower price is obtained by the marginal farmers for paddy.

In 2015-16 also, it is seen that price received by marginal farmers is low for paddy as compared to farmers with larger land holdings.

28.1.1.6 RETURNS FROM LIVESTOCK

Apart from cultivation, the households earn income from livestock. RKVY also provides support for the development of animal husbandry and livestock. In our sample for West Bengal, it is seen that average income from livestock is slightly lower for non-beneficiary households as compared to beneficiary households. Among the households who have livestock, 75.3% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries, the share is 82.8% (Table 28-21). Apart from that, some income comes from the animal sale.

The inter-temporal comparison shows that average income from the production of milk is higher for non-beneficiaries in 2016-17 and 2015-16. Income from milk is higher for beneficiaries for both the years. The situation is opposite for animal sale. In total, income from livestock has increased in 2016-17 from 2015-16 both for beneficiaries and non-beneficiaries but the increase is higher for non-beneficiaries (Table 28-22).

28.1.1.7 AWARENESS REGARDING RKVY PROGRAMME

Regarding the awareness of RKVY, it is found that in our sample, 47% of non-beneficiary households are not aware of RKVY. 6% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 5% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. For the last five years, 28% of the beneficiary households and 3% of the non-beneficiary households had received some benefits from government schemes other than RKVY in the year 2016-17. This can be easily observed from the Table 28-23 that beneficiary households have better awareness regarding RKVY or other government programmes. So increasing awareness is appears to be the basic requirement for the success of government schemes, including RKVY.

In our sample in West Bengal, the majority of the beneficiary households had received information regarding RKVY from friends and neighbours and Agriculture/Horticulture Department (Table 28-24). For non-beneficiary households, 88% of the households received information from friends and neighbours.

28.1.1.8 BENEFITS FROM RKVY RECEIVED BY SAMPLE HOUSEHOLDS

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural mechanization through RKVY. Beneficiaries have received support from RKVY programme in buying tiller, seed drill, sprayer, drilling bore well and pump sets in West Bengal (Table 10-25). The majority of them have received it through price subsidy. Average subsidy amount is Rs. 60000 for tiller, Rs. 6250 for seed drill, Rs. 1006 for sprayer, Rs. 2875 for drilling bore well, Rs. 8707 for pump set and Rs. 2424 for others. Beneficiaries have reported that these implements have helped in solving labour problems and helped in good plant growth. Project on Financial Support to Farmers in the form of subsidy for the purchase of power operated Farm Machinery/Equipment has provided tiller, seed drill, drilling bore well, delivery pipe and pump set for farmers and project OTA to the small and marginal farmers for the purchase of small farm implements has helped the farmers to purchase sprayer and manual threshers. 34 to 50% of the costs of the implements are provided by RKVY in West Bengal (Table 28-25).

In West Bengal, 56% of the farmers in beneficiary group and 44% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil (Table 28-26A). Among them, 75% of the households are provided with soil health card. The tests have been done in government institutes for all the cases (Table 28-26B).

Within our sample in West Bengal, 100% of beneficiary households had undergone training and demonstration (Table 28-27). All the households found training beneficial and want more training. RKVY programme has facilitated training and demonstration in West Bengal for all categories of farmers.

It is also found in our study that 99% of the beneficiary and 100% of the non-beneficiary households have mobile phones. But only 88% of the beneficiary and 97% of the non-

beneficiary households receives text messages. Only 26% of the beneficiary households and none of the non-beneficiary households have reported to receive agriculture-related text messages (Table 28-28).

28.1.1.9 CONSTRAINTS FACED BY SAMPLE HOUSEHOLDS

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as subsidy paid after purchase while initial payment remains the highest problem, Capacity building/technical advice not provided, Long time gap between the purchase and receiving the subsidy amount etc. For landless farmers the major problems are: Contact details of the department which pay subsidy not available, Procedure for the subsidy very tedious, institutional financing facility not available (Table 28-29A & 28-29B).

According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in employment generation, increasing production, providing financial assistance, building infrastructure and better price realization. However, it appears that RKVY has not been very successful in post-harvesting storage, improving marketing facilities and procurement (Table 28-30A & 28-30B). Small and marginal farmers specifically benefitted from RKVY programme in employment generation, getting financial assistance and increasing production.

28.1.2 RESULTS FROM IMPLEMENTING AGENCY SURVEY

The project selected for implementing agency survey is “Distillation of water bodies of different fisheries projects”, for which implementing agency was The State Fisheries Development Corporation Limited. (Table 28-31). Under the project, construction project is carried out for distillation of water bodies, which is an improvement of older one. The project was proposed by implementing agency at state level (Table 28-32). Around 50% of the required funds were released in 2016-17. Delayed release is the major problem for the project (Table 28-33). The project is being carried out in one phase (Table 28-34). For this project, tender was called for execution of the work. Method for evaluating the tenders is financial criteria only (Table 28-35).

The project could benefit SHGs, and State Fisheries Development Corporation Ltd. Complementary/ Supplementary projects for this ongoing project may be procurement and related activities such as ware house, approach road in the farm area, more aerators, boundary wall for overall development of government farm, etc. (Table 28-36). Convergence of the project has been reported with Pisciculture project under state plan (Table 28-37).

28.2 CONCLUSION

RKVY was started in 2007-08 in West Bengal. Under RKVY scheme, Rs. 352.47 Crore was allocated for West Bengal during 2016-17, among which Rs. 280.78 Crore has been released and Rs. 167.74 Crore is spent (and UC received for that) till 31st July 2017. According to MIS report, cooperatives and cooperation is the priority sector the very small-sized projects (cost < 1 crore), fisheries in small size category (cost 1 to 5 crore) and cooperatives and cooperation in the medium-size category (cost 5 to 10 crore). For large projects with cost 10 to 25 crore, priority areas are Agriculture mechanization, crop development and fisheries. Crop development is the only sector in the very large (cost > 25 crore) category with emphasis for paddy development as sub-sector. So proposals for small projects are dominated by cooperatives and cooperation and fisheries and proposals for large projects are by crop development in 2016-17. We have selected eight projects for West Bengal and analysed the performance of RKVY by collecting primary information.

The information is collected from the beneficiaries and non-beneficiaries about the status of their household in terms of income, consumption, investment in agriculture and the effect of RKVY programme in the locality. In our sample in West Bengal, total 150 households are considered for the survey, among which 120 households are beneficiaries of RKVY and 30 are non-beneficiaries. In our sample, the majority of the beneficiary households (90.8% of beneficiary households) are marginal farmers, 7.5% are small farmers, and 1.7% belongs to landless category. There is no sample household for medium and large category. In the non-beneficiary households, 20% are landless, 23% is marginal and 3.3% is small farmers. In our sample, for kharif 2016-17, the average area of owned land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households. Households depend on canals, tube well (electric and diesel both) and tanks for irrigation in

kharif season. We have collected separate data for land-holding and irrigation for kharif and rabi season. For rabi season 2016-17 also, the average area of owned land is higher for marginal and small farmers among the beneficiary households as compared to non-beneficiary households.

A total number of the population covered is 704, among them, 570 people belong to beneficiary households and 134 people belong to non-beneficiary households. 70.9% population in beneficiary households and 64.9% population in non-beneficiary households are in working-age-group. Average income for beneficiary households are higher than non-beneficiary households and it has increased from 2015-16 to 2016-17. Major sources of income are farming, dairy and poultry, fishing apart from agriculture labour, casual labour and salary. For farming, the average income of beneficiary households is higher than non-beneficiaries; so is the average cost. Average income from salary is also higher for beneficiary households. In terms of percentage change in income, average income has increased by 19% in farming for beneficiary and 18% for non-beneficiary households. However, the average cost has increased by same proportion both for beneficiary and non-beneficiary households in farming. Profitability has decreased for fishing both for beneficiary and non-beneficiary households.

In the cost of agriculture front, households have reported expenditure on rent of agriculture machinery (tractor, harvester etc.), expenditure on purchased water for irrigation, expenditure on electricity for irrigation, expenditure on diesel and other fuels. Apart from them major expenditure is clubbed under “other” category which comprises expenditure on seed, fertilizer etc. The component-wise analysis shows that expenditure on electricity for irrigation and expenditure on diesel are higher for non-beneficiaries than beneficiaries.

In our sample in West Bengal, for beneficiary households, small farmers have some large agricultural implements like tractor and trolley. Marginal and small farmers have more access to implements like manual/power sprayers, threshers, electrical pump sets and fodder chopper. Marginal and small farmers from beneficiary households have a significant proportion of ownership of livestock. In our sample, 27% of the households for beneficiary and 10% of non-beneficiary groups have pucca houses. 31% of beneficiary households and 57% of non-beneficiary households have kachha houses. It is observed from our sample that 88% of

beneficiary households possess TV while for non-beneficiaries, it is 72%. In the case of mobile phones 80% of beneficiary and 100% of non-beneficiary households have reported to possess it. Both beneficiary and non-beneficiary households own bicycles, two-wheelers and refrigerator; while beneficiary households did not report to own four-wheelers.

It is seen from the sample that beneficiary households cultivated paddy, pulses (tur masur, moong), mustard and vegetables in the majority of the cultivated area. But for non-beneficiary households, the emphasis is on paddy sunflower, mustard and vegetables. Average production of paddy is higher for beneficiary households (32.06 qtls) as compared to non-beneficiary households (24.08 qtls). Price of the marketed quantity for paddy and mustard are also more for the beneficiary household vis-à-vis non-beneficiary households. Disaggregated analysis shows that there is difference in the price received by the different category of households (depending on the operated area) for the same crop in 2016-17. For the majority of the crops, both for beneficiary and non-beneficiary households, marginal farmers are getting less prices. Among the households who have livestock, 75.3% of the income from livestock comes from milk for beneficiary households, while for non-beneficiaries, the share is 82.8%. Apart from that, some income comes from the animal sale of livestock.

Regarding the awareness of RKVY, it is found that in our sample, 47% of non-beneficiary households are not aware of RKVY. 6% of the beneficiary households have received benefits from RKVY in the last five years excluding this year. But non-beneficiary households are deprived of any benefits through-out these years. 5% of the beneficiary households and none of the non-beneficiary households have received some benefits from government schemes other than RKVY in the year 2016-17. Majority of the beneficiary households had received information regarding RKVY from friends and neighbours and Agriculture/Horticulture Department.

Agricultural asset building and asset building has been recognized as very important for the overall development of agriculture, in RKVY. This section looks into the aspects of agricultural mechanization through RKVY. Beneficiaries have received support from RKVY programme in buying tiller, seed drill, sprayer, drilling bore well and pump sets in West Bengal. The majority of them have received it through price subsidy. Average subsidy amount is Rs. 60000

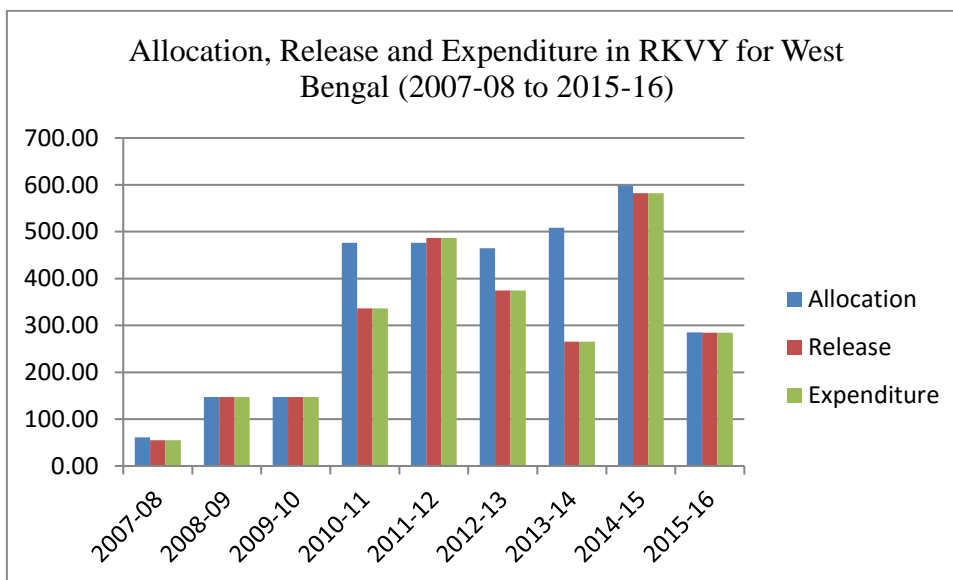
for tiller, Rs. 6250 for seed drill, Rs. 1006 for sprayer, Rs. 2875 for drilling bore well, Rs. 8707 for pump set and Rs. 2424 for others. Beneficiaries have reported that these implements have helped in solving labour problems and helped in good plant growth. Project on Financial Support to Farmers in the form of subsidy for the purchase of power operated Farm Machinery/Equipment has provided tiller, seed drill, drilling bore well, delivery pipe and pump set for farmers and project OTA to the small and marginal farmers for the purchase of small farm implements has helped the farmers to purchase sprayer and manual threshers. 34 to 50% of the costs of the implements are provided by RKVY in West Bengal.

In West Bengal, 56% of the farmers in beneficiary group and 44% of farmers in non-beneficiary group have reported that the soil has been tested to know the nature of the soil. Among them, 75% of the households are provided with soil health card. The tests have been done in government institutes for all the cases. Within our sample in West Bengal, 100% of beneficiary households had undergone training and demonstration. All the households found training beneficial and want more training. RKVY programme has facilitated training and demonstration in West Bengal for all categories of farmers. It is also found in our study that 99% of the beneficiary and 100% of the non-beneficiary households have mobile phones. But only 88% of the beneficiary and 97% of the non-beneficiary households receives text messages. Only 26% of the beneficiary households and none of the non-beneficiary households have reported to receive agriculture-related text messages.

In our study, it is found that beneficiary households have mentioned major problems related to implementation of RKVY programme as subsidy paid after purchase while initial payment remains the highest problem, Capacity building/technical advice not provided, Long time gap between the purchase and receiving the subsidy amount etc. For landless farmers the major problems are: Contact details of the department which pay subsidy not available, Procedure for the subsidy very tedious, institutional financing facility not available. According to the feedback from the beneficiary respondents about the success of RKVY programme, it is stated that the programme is successful in employment generation, increasing production, providing financial assistance, building infrastructure and better price realization. However, it appears that RKVY has not been very successful in post-harvesting storage, improving marketing facilities and

procurement. Small and marginal farmers specifically benefitted from RKVY programme in employment generation, getting financial assistance and increasing production.

Figure 28-1: Allocation, Release and Expenditure in RKVY for West Bengal (2007-08 to 2015-16)



Source: <http://rkvy.nic.in/>

Table 28-1: List of selected project name and code

1	Support to Extension functionaries for facilitating Agricultural Extension & Mass campaign in the state of West
2	Financial Support to Farmers in the form of subsidy for the purchase of power operated Farm Machinery/Equipment
3	One Time Assistance (OTA) to the small and marginal farmers for the purchase of small farm implements
4	Credit link subsidy Scheme for the Establishment of Custom hiring Centre
5	Extension of animal health care services in the remote areas of West Bengal through the mobile veterinary clinic
6	Intensive Fish culture in selected areas of the state
7	Distillation of water bodies of different fisheries projects
8	Construction of four Krishak Bazars at the rate of 7.009 crore per Krishak Bazar

Table 28-2: Distribution of farmers in our sample according to their land-holding (operated area) (Number) (% in parenthesis) (2016-17)

	Beneficiary	Non-Beneficiary	Total
Landless	2(1.7)	6(20)	8(5.3)
Marginal	109(90.8)	23(76.7)	132(88)
Small	9(7.5)	1(3.3)	10(6.7)
Medium	0(0)	0(0)	0(0)
Large	0(0)	0(0)	0(0)
Total	120(100)	30(100)	150(100)

Table 28-3A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Beneficiary				
			Lan dles s	Margin al	Sma ll	Mediu m	Larg e
Owned land (acre)			0.0	1.1	3.6	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.8	0.0	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+ LI-LO) (acre)			0.0	1.2	3.6	0.0	0.0
Irrigated Area by canal (%)			-	9.2	0.0	-	-
Irrigated Area by tube well (%)	Rented	Electric	-	11.1	0.0	-	-
		Diesel	-	16.7	0.0	-	-
	Owned	Electric	-	18.0	30.7	-	-
		Diesel	-	25.1	69.3	-	-
Irrigated Area by Tanks (%)			-	19.9	0.0	-	-
Irrigated Area by Wells (%)			-	0.0	0.0	-	-
Irrigated Area by others (%)			-	0.0	0.0	-	-

Table 28-3B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Kharif 2016-17)

<i>For Kharif 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			0.0	0.7	3.0	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.7	0.0	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO) (acre)			0.0	0.8	3.0	0.0	0.0
Irrigated Area by canal (%)			-	8.1	0.0	-	-
Irrigated Area by tube well (%)	Rented	Electric	-	15.5	0.0	-	-
		Diesel	-	18.2	0.0	-	-
	Owned	Electric	-	23.2	0.0	-	-
		Diesel	-	34.9	100.0	-	-
Irrigated Area by Tanks (%)			-	0.0	0.0	-	-
Irrigated Area by Wells (%)			-	0.0	0.0	-	-
Irrigated Area by others (%)			-	0.0	0.0	-	-

Table 28-4A: Average land ownership and percentage distribution of beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			0.0	1.1	3.6	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.8	0.0	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO) (acre)			0.0	1.2	3.6	0.0	0.0
Irrigated Area by canal (%)			-	9.2	0.0	-	-
Irrigated Area by tube well (%)	Rented	Electric	-	11.1	0.0	-	-
		Diesel	-	16.7	0.0	-	-
	Owned	Electric	-	18.0	30.7	-	-
		Diesel	-	25.1	69.3	-	-
Irrigated Area by Tanks (%)			-	19.9	0.0	-	-
Irrigated Area by Wells (%)			-	0.0	0.0	-	-
Irrigated Area by others (%)			-	0.0	0.0	-	-

Table 28-4B: Average land ownership and percentage distribution of non-beneficiary households according to mode of irrigation (Rabi 2016-17)

<i>For Rabi 2016-17</i>			Non-Beneficiary				
			Landless	Marginal	Small	Medium	Large
Owned land (acre)			0.0	0.7	3.0	0.0	0.0
Leased-in Land/share cropping (acre)			0.0	0.7	0.0	0.0	0.0
Leased-out Land/share cropping (acre)			0.0	0.0	0.0	0.0	0.0
Total operated area (owned+LI-LO) (acre)			0.0	0.8	3.0	0.0	0.0
Irrigated Area by canal (%)			-	8.1	0.0	-	-
Irrigated Area by tube well (%)	Rented	Electric	-	15.5	0.0	-	-
		Diesel	-	18.2	0.0	-	-
	Owned	Electric	-	23.2	0.0	-	-
		Diesel	-	34.9	100.0	-	-
Irrigated Area by Tanks (%)			-	0.0	0.0	-	-
Irrigated Area by Wells (%)			-	0.0	0.0	-	-
Irrigated Area by others (%)			-	0.0	0.0	-	-

Table 28-5: Demography of sample households (%)

		Beneficiary	Non-Beneficiary	Total
Age group	<=15	17.5	24.6	18.9
	>15 to 25	19.1	14.9	18.3
	>25 to 40	27.7	33.6	28.8
	>40 to 59	24.0	16.4	22.6
	>59	11.6	10.4	11.4
	All Groups	100.0	100.0	100.0
Education	Illiterate	14.4	14.2	14.3
	Class 1 to 5	15.8	14.2	15.5
	Above Class 5 to 8	19.6	17.2	19.2
	Above Class 8 to 12	39.6	44.0	40.5
	Above Class 12	8.8	6.0	8.2
	Other diploma	0.2	0.7	0.3
	can read and write	0.0	0.0	0.0
	can read only	0.0	0.0	0.0
	can count only	0.0	0.0	0.0
	could not attend class 1	1.6	3.7	2.0
	All Groups	100.0	100.0	100.0

Table 28-6: Occupational distribution of members of sample households (%)

Occupation	Beneficiary	Non-Beneficiary	Total
cultivation	16.0	14.2	15.6
agricultural labour	0.2	0.7	0.3
dairy	0.2	0.0	0.1
casual labour	5.6	8.2	6.1
self-employment (specify)	3.9	8.2	4.8
salaried employment	3.8	2.2	3.5
forestry	0.0	0.0	0.0
Horticulture	0.0	0.0	0.0
Floriculture	0.0	0.0	0.0
Sericulture	0.0	0.0	0.0
Fishing	7.0	0.0	5.6
Aquaculture	0.0	0.0	0.0
Poultry	0.0	0.0	0.0
beekeeping	0.0	0.0	0.0
Student	20.1	20.9	20.3
housewife	29.6	28.4	29.4
non-working	13.6	15.7	14.0
others (no separate income)	0.0	1.5	0.3
All Groups	100.0	100.0	100.0

Table 28-7: Percentage distribution of households according to sources of income (2016-17)

<i>Source</i>	Beneficiary	Non-Beneficiary
Farming	44	43
Horticulture	0	0
Floriculture	0	0
Dairy	5	5
Poultry	2	0
Sericulture	0	0
Agricultural Labour	3	5
Casual Labour	20	39
Forestry	0	0
Fishing	19	4
Beekeeping	0	0
Salary	8	4
Other	0	0
Total	100	100

Table 28-8: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2016-17)

	Beneficiary			Non-Beneficiary		
<i>Source</i>	Average Income	Average Cost	Average Profit	Average Income	Cost	Average Profit
Farming	78833	33534	45299	50750	21042	29708
Horticulture						
Floriculture						
Dairy	17692	6462	11231	18333	7000	11333
Poultry	15500	4375	11125			
Sericulture						
Agricultural Labour	26000			21667		
Casual Labour	38558	2750	35808	35455	600	34855
Forestry						
Fishing	111224	48633	62592	25000	11000	14000
Beekeeping						
Salary	82857	3556	79302	105000	6000	99000
Other		34480			38500	
Total	71835	33092	38742	42464	23460	19004

Table 28-9: Average income and cost of beneficiaries and non-beneficiaries (Rs.) (2015-16)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Average Cost	Average Profit	Average Income	Average Cost	Average Profit
Farming	66317	28545	37772	42917	18025	24892
Horticulture						
Floriculture						
Dairy	15333	5208	10125	15667	5333	10333
Poultry	12250	3500	8750			
Sericulture						
Agricultural Labour	21429			16333		
Casual Labour	33019	1600	31419	31409	375	31034
Forestry						
Fishing	131735	56633	75102	35000	13500	21500
Beekeeping						
Salary	72000	2711	69289	95000	4000	91000
Other		28708		80000	37455	42545
Total	68039	31544	36495	37842	20752	17090

Table 28-10: Change in Average income and cost of beneficiaries and non-beneficiaries (%) (2016-17)

<i>Source</i>	Beneficiary			Non-Beneficiary		
	Average Income	Cost	Average Profit	Average Income	Cost	Average Profit
Farming	19	17	20	18	17	19
Dairy	15	24	11	17	31	10
Poultry	27	25	27			
Agricultural Labour	21			33		
Casual Labour	17	72	14	13	60	12
Fishing	-16	-14	-17	-29	-19	-35
Salary	15	31	14	11	50	9
Other		20			3	

Table 28-11: Annual expenditure for agriculture (Rs.)

	2016-17		2015-16	
<i>items</i>	Beneficiary	Non-Beneficiary	Beneficiary	Non-Beneficiary
Rent on leased-in land	5458	4000	5292	4000
Total rent on machinery (tractor, harvester etc.)	5043	3438	4851	3129
Expenditure on purchased water for irrigation	1958	1153	1673	918
Expenditure on electricity for irrigation	1400	1500	1150	1000
Expenditure on diesel	2730	3520	2298	3260
Expenditure on other fuels for agriculture	711	840	574	620
Any other	25766	15317	21632	12938
<i>Total expenditure on agriculture</i>	39663	10100	34105	8672

Table 28-12: Percentage increase in average expenditure on agriculture of beneficiary and non-beneficiary households in 2016-17 over 2015-16

<i>items</i>	Beneficiary	Non-Beneficiary
Rent on leased-in land	3	0
Total rent on machinery (tractor, harvester etc.)	4	10
Expenditure on purchased water for irrigation	17	26
Expenditure on electricity for irrigation	22	50
Expenditure on diesel	19	8
Expenditure on other fuels for agriculture	24	35
Any other	19	18
<i>Total expenditure on agriculture</i>	16	16

Table 28-13A: Asset ownership by beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	-	0	4	-	-
Trolley	-	0	4	-	-
Weeder	-	0	0	-	-
Manual/Power Sprayers	-	26	28	-	-
Threshers	-	18	7	-	-
Drier	-	0	0	-	-
Electrical Pump sets	-	7	2	-	-
Diesel Pump sets	-	13	26	-	-
Sprinkler sets/Drip Irrigation Equipment	-	0	0	-	-
Cane Crusher/Agro-processing Equipment	-	0	0	-	-
Leveller	-	0	4	-	-
Fodder Choppers	-	33	22	-	-
Bullock cart	-	0	0	-	-
Harvest Combine	-	0	0	-	-
Others	-	2	2	-	-

Table 28-13B: Asset ownership by non-beneficiary households (% of number of implements) (2016-17)

<i>Assets</i>	Non-Beneficiary				
	Landless	Marginal	Small	Medium	Large
Tractor	0	0	0	-	-
Trolley	0	0	0	-	-
Weeder	0	0	0	-	-
Manual/Power Sprayers	0	31	20	-	-
Threshers	0	10	20	-	-
Drier	0	0	0	-	-
Electrical Pump sets	0	3	0	-	-
Diesel Pump sets	0	10	20	-	-
Sprinkler sets/Drip Irrigation Equipment	0	0	0	-	-
Cane Crusher/Agro-processing Equipment	0	0	0	-	-
Leveller	0	0	0	-	-
Fodder Choppers	100	46	40	-	-
Bullock cart	0	0	0	-	-
Harvest Combine	0	0	0	-	-
Others	0	0	0	-	-

Table 28-14A: Livestock ownership by beneficiary households (2016-17) (% of number of livestock)

Livestock	Beneficiary				
	Landless	Marginal	Small	Medium	Large
Cow	0	31	17	-	-
Buffalo	0	1	6	-	-
Young Stock	0	16	23	-	-
Male Draught	0	0	0	-	-
Sheep	0	0	0	-	-
Goat	100	14	43	-	-
Pig	0	0	0	-	-
Poultry	0	37	11	-	-
Others	0	1	0	-	-

Table 28-15: Percentage distribution of households according to type of house (2016-17)

Type	Beneficiary	Non-beneficiary	Total
Kachha	31	57	36
Pucca	27	10	23
Semi-Pucca	43	33	41
Others	0	0	0
Total	100	100	100

Table 28-16: Percentage distribution of households according to Other Assets (2016-17)

	Beneficiary			Non-beneficiary		
	Yes	No	Total	Yes	No	Total
TV	88	12	100	72	28	100
Telephone				80	20	100
Mobile phone	80	20	100	100	0	100
Cycle	80	20	100	100	0	100
Two wheeler	89	11	100	76	24	100
Four wheeler				80	20	100
Refrigerator	89	11	100	79	21	100
Others (specify)						

Table 28-17: Average value of crop-wise cultivated are, irrigated area, production, price received, total paid-out cost and profitability of selected crops for beneficiary households (2016-17)

Crop	Beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	1.35	1.35	32.06	25.92	1379.36	14919.49	20838.78
tur	0.20	0.20	0.60	0.60	8000.00	2000.00	2800.00
masur	0.50	0.50	2.00	2.00	4000.00	3000.00	5000.00
moong	0.65	0.65	1.50	1.19	3900.00	2170.00	2471.00
other pulses	2.00	2.00	4.00	4.00	3000.00	4500.00	7500.00
mustard	0.50	0.50	2.00	2.00	4000.00	4000.00	4000.00
vegetable 1	0.55	0.55	27.96	27.86	1333.93	13714.29	23445.15
vegetable 2	0.68	0.68	33.07	33.07	1400.00	19785.71	26514.29
Others	1.48	1.48	26.88	26.40	1485.48	17809.52	21414.12

Table 28-18: Average value of crop-wise cultivated area, irrigated area, production, price received, total paid-out cost and profitability of selected crops for non- beneficiary households (2016-17)

Crop	Non-beneficiary						
	Cultivated Area (in Acres)	Irrigated Area (in Acres)	Production (Qtls)	Marketed Quantity (Qtls)	Price received (per qtl)	Total paid-out costs (Rs)	Profitability
paddy	0.91	0.91	24.08	17.67	1286.67	9958.33	12772.78
sunflower	1.00	1.00	4.00	4.00	6000.00	8000.00	16000.00
mustard	0.50	0.50	3.00	3.00	3000.00	3000.00	6000.00
vegetable 1	0.33	0.33	15.00	15.00	1500.00	8400.00	14100.00
vegetable 2	0.38	0.38	22.50	22.50	775.00	7500.00	9937.50
others	0.86	0.86	16.30	16.30	1441.50	10250.00	13246.45

Table 28-19: Crop-wise price received by beneficiary and non-beneficiary households in 2016-17 (Rs.)

Crop	2016-17									
	Beneficiary					Non-Beneficiary				
	Landles s	Margina l	Smal l	Mediu m	Larg e	Landles s	Margina l	Smal l	Mediu m	Larg e
paddy		1378	1397				1274	1450		
tur		8000								
masur		4000								
moong		3900								
other pulses		3000								
sunflower								6000		
mustard		4000					3000			
vegetable 1		1334					1500			
vegetable 2		1354	2000				775			
others		1492	1433				1441	1500		

Table 28-20: Crop-wise price received by beneficiary and non-beneficiary households in 2015-16 (Rs.)

Crop	2015-16									
	Beneficiary					Non-Beneficiary				
	Landles s	Margina l	Smal l	Mediu m	Larg e	Landles s	Margina l	Smal l	Mediu m	Larg e
paddy		1326	1342				1223	1400		
masur		3600								
moong		3560								
other pulses		2600								
sunflower								5500		
mustard		3500					2900			
vegetable 1		1221					1378			
vegetable 2		1273	1800				710			
others		1432	1381				1386	1450		

Table 28-21: Distribution of income from livestock

		2016-17			
		Beneficiary		Non-Beneficiary	
<i>Items</i>		% of Total Income	Average Annual income (Rs)	% of Total Income	Average Annual income (Rs)
Milk		75.3	20000	82.8	24000
Milk Products	Ghee	0.0	0	0.0	
	Curd	0.0	0	0.0	
	Butter	0.0	0	0.0	
	Paneer	0.0	0	0.0	
	Others	0.0	0	0.0	
Meat		0.0	0	0.0	
Eggs		6.8	20000	0.0	
Skin/Hides Etc.		0.0	0	0.0	
Manure		0.0	0	0.0	
Dung cake		0.0	0	0.0	
Animal sale		6.8	6667	17.2	5000
Others		11.0	10667	0.0	
TOTAL		100.0	19467	100.0	19333

Table 28-22: Difference in average income of beneficiaries and non-beneficiaries and change in it over the year 2015-16 to 2016-17

Items	Difference in the average income of beneficiaries over non-beneficiaries (Rs)		Percentage change in average income between 2016-17 and 2015-16 (%)	
	2016-17	2015-16	Ben	Non-Ben
Milk	-4000	-4818	23.60	14.29
Animal sale	1667	3000	-16.67	0.00
TOTAL	133	375	902.58	1134.04

Table 28-23: Awareness regarding RKVY (2016-17) (%)

	Beneficiary			Non-Beneficiary		
	Yes	No	overall	Yes	No	overall
Have you heard about RKVY?	100	0	100	53	47	100
Did you receive any benefits from RKVY in the year 2016-17?	6	94	100	0	100	100
Did you receive any benefits from RKVY in the last five years excluding this year?	6	94	100	0	100	100
Did you receive any benefits from any government scheme other than RKVY in the year 2016-17?	5	95	100	0	100	100
Did you receive any benefits from any government scheme other than RKVY in the last five years excluding this year?	28	73	100	3	97	100

Table 28-24: Source of Awareness regarding RKVY (%) (2016-17) (%)

	Beneficiary	Non-Beneficiary	Total
Friends & neighbours	27	88	34
News Paper	0	0	0
Agriculture/Horticulture Department	47	6	42
SAU	0	0	0
KVK	1	0	1
Input Suppliers	0	0	0
TV/Radio	0	0	0
Agri. Exhibitions	0	0	0
ZP/GP	25	6	23
Other sources	1	0	1
Total	100	100	100

Table 28-25: Details of intervention in agriculture mechanization in West Bengal for beneficiaries

	Till er	Seed drill	Spra yers	Drilling bore well	Pum p set	Oth ers
No of beneficiaries of RKVY	2	1	10	1	23	43
number of benefits received	0	0	0	0	0	0
Average Cost (Rs)	178 405	1250 0	2012	5750	1813 8	484 8
Amount financed by loan (Rs)	0	0	0	0	0	0
Source of Credit (number)						
Bank	0	0	0	0	0	0
MFI	0	0	0	0	0	0
Money lender	0	0	0	0	0	0
Other	0	0	0	0	0	0
Average Subsidy amount from RKVY (Rs)	600 00	6250	1006	2875	8707	242 4
Mode of subsidy Transfer (number)						
Price Subsidy	2	1	10	1	23	43
DBT	0	0	0	0	0	0
If DBT, Number of days taken to receive subsidy?	-	-	-	-	-	-
Benefits derived from the implement (%)						
Solved labour problem	100	100	20	100	48	86
Enabled timely operations	0	0	10	0	0	0
Saved water	0	0	0	0	0	2
Helped in controlling weed	0	0	50	0	0	0
Helped in good plant growth	0	0	20	0	52	0
Reduced Drudgery	0	0	0	0	0	5
Helped in transportation	0	0	0	0	0	0
Reduced cost of Cultivation	0	0	0	0	0	0
Increased cropping intensity	0	0	0	0	0	0
Not useful	0	0	0	0	0	0
Subsidy received from any other scheme	0	0	0	0	0	0
Subsidy not received from any other scheme (%)	100	100	100	100	100	100
If subsidy not received, number of households who have said who would buy this implement (%)	50	0	0	0	0	0
If subsidy not received, number of households who have said who would not buy this implement (%)	50	100	100	100	100	100

Table 28-26A: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Whether soil is tested in your area?			Soil health card issued? (who tested soil)		
	Yes	No	Total	Yes	No	Total
Beneficiary						
Landless	0	100	100	0	0	0
Marginal	53	47	100	71	29	100
Small	100	0	100	100	0	100
Medium						
Large						
Total	56	44	100	75	25	100
Non-beneficiary						
Landless	0	100	100	0	0	0
Marginal	26	74	100	50	50	100
Small	100	0	100	100	0	100
Medium						
Large						
Total	23	77	100	57	43	100

Table 28-26B: Interventions regarding Soil testing under NRM (in percentage terms) (2016-17)

<i>Land size</i>	Place of soil test		
	Government Institute	Private organization	Do not know
Beneficiaries			
Landless			
Marginal	97	0	3
Small	100	0	0
Medium			
Large			
Total	97	0	3
Non-beneficiaries			
Landless			
Marginal	83	0	17
Small	100	0	0
Medium			
Large			
Total	86	0	14

Table 28-27: Information regarding training and demonstration under RKVY (% of households) (2016-17)

	Number of Beneficiaries	% of beneficiary households undergone training	Type of training				% of households found training beneficial	% of households who want more training
			Demonstration	Field Visit	Kris hi Mela	Others		
Landless	2	100	100	0	0	0	100	100
Marginal	109	100	100	0	0	0	100	97
Small	9	100	100	0	0	0	100	100
Medium	0							
Large	0							
Total	120							

Table 28-28: Usage of mobile phone in receiving agriculture-related information (%)

	% of households having mobile phone	% of households who received text messages	% of households who received agriculture-related SMS	% of households receiving text message in local language	% of households received voice messages
Beneficiary					
Landless	100	50	0	0	0
Marginal	99	89	28	28	0
Small	100	78	11	11	0
Medium					
Large					
Total	99	88	26	26	0
Non-Beneficiary					
Landless	100	100	0	0	0
Marginal	100	96	0	0	0
Small	100	100	0	0	0
Medium					
Large					
Total	100	97	0	0	0

Table 28-29A: Constraints faced by Beneficiary households in availing RKVY benefit (in percentage terms)

	No. Beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	0	37	22	-	-	35
Contact details of the department which pay subsidy not available	100	35	56	-	-	38
Eligibility or criteria for availing the subsidy not known	0	12	11	-	-	12
Procedure for the subsidy very tedious	100	27	11	-	-	27
No of documents required for availing subsidy are too many	0	23	33	-	-	23
Subsidy paid after purchase while initial payment remains the highest problem	50	61	56	-	-	61
Delay in transfer	50	48	44	-	-	48
Prescribed machinery/asset not easily available in the market	50	12	11	-	-	13
Institutional financing facility not available	100	19	33	-	-	22
Capacity building/technical advice not provided	0	56	11	-	-	52
Long time gap between the purchase and receiving the subsidy amount	50	51	56	-	-	52
Biased towards large land owners	0	14	0	-	-	13
Poor quality of materials/machinery are supplied	50	15	0	-	-	14
Implementing agencies are located far away	0	28	0	-	-	26
Incidence of bribery	0	25	0	-	-	23
Lack of monitoring	50	46	89	-	-	49
Complementary inputs not available	50	21	11	-	-	21
Restricted Choice	0	37	33	-	-	36
Lack of marketing support	50	41	56	-	-	43
Any other	0	0	0	-	-	0

Table 28-29B: Constraints faced by Non-Beneficiary households in availing RKVY benefit (in percentage terms)

	No. of Non-beneficiaries					
	Land less	Marginal	Small	Medium	Large	Total
Information about RKVY programme details not easily available	50	96	100	-	-	87
Contact details of the department which pay subsidy not available	67	83	100	-	-	80
Eligibility or criteria for availing the subsidy not known	100	74	0	-	-	77
Procedure for the subsidy very tedious	50	52	100	-	-	53
No of documents required for availing subsidy are too many	50	74	100	-	-	70
Subsidy paid after purchase while initial payment remains the highest problem	67	70	0	-	-	67
Delay in transfer	67	57	100	-	-	60
Prescribed machinery/asset not easily available in the market	17	52	0	-	-	43
Institutional financing facility not available	17	43	0	-	-	37
Capacity building/technical advice not provided	83	91	100	-	-	90
Long time gap between the purchase and receiving the subsidy amount	100	87	100	-	-	90
Biased towards large land owners	17	52	100	-	-	47
Poor quality of materials/machinery are supplied	17	61	0	-	-	50
Implementing agencies are located far away	33	74	100	-	-	67
Incidence of bribery	33	35	0	-	-	33
Lack of monitoring	83	87	0	-	-	83
Complementary inputs not available	83	78	0	-	-	77
Restricted Choice	67	70	100	-	-	70
Lack of marketing support	50	70	100	-	-	67
Any other	0	0	0	-	-	0

Table 28-30A: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Employment generation		Increasing production		Improving marketing facilities		Better price realization		Financial Assistance	
	S	NS	S	NS	S	NS	S	NS	S	NS
Landless	25	0	25	0	13	13	25	0	25	0
Marginal	71	11	74	8	48	34	53	30	73	9
Small	90	0	90	0	30	60	60	30	90	0
Medium	-	-	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-	-	-
Total	70	10	73	7	45	35	52	28	72	8

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 28- 30B: Opinion of beneficiary households about RKVY programme (in percentage terms)

	Building Infrastructure		Capacity Building		Post-harvesting storage		procurement	
	S	NS	S	NS	S	NS	S	NS
Landless	25	0	25	0	13	13	0	0
Marginal	66	17	48	34	21	61	0	0
Small	90	0	70	20	40	50	0	0
Medium	-	-	-	-	-	-	-	-
Large	-	-	-	-	-	-	-	-
Total	65	15	49	31	22	58	0	0

Note: “S” represents satisfactory and “NS” represents not satisfactory.

Table 28-31: Project Details

Sl. No.	Project Name	Implementing agency
01	Distillation of water bodies of different fisheries projects-IA	The State Fisheries Development Corporation Limited. Address-“Bikash Bhawan” First Floor, North Block, Bidhan Nagar, Kolkata-700091.

Table 28-32: General Information regarding the implementing agency

Issues\ Projects	Distillation of water bodies of different fisheries projects-IA
Type of construction	Distillation of water bodies
New construction/Improvement of an older construction	Improvement
Awareness about DAP	Yes
Included in DAP	Not aware
Project proposed by	Implementing Agency
Level at which the project was proposed	State

Table 28-33: Fund Flow in the project

Issues\ Projects	Distillation of water bodies of different fisheries projects-IA
Funds required for the project in 2016-17	16.3361 crore
Funds approved for the project in 2016-17	16.3361 crore
Funds released for the project in 2016-17	8.8833 crore
Number of times funding released for the project in 2016-17	3
Major problems in the release of funds	Delayed release of 2nd inst. (in two phases) by GOI. Approved amount is not released in 2016-17

Table 28-34: Physical Capacity of the projects

Issues\ Projects		Distillation of water bodies of different fisheries projects-IA
Number of phases in the project		1
Fund managemene nt across the phases	Phase 1	No response
	Phase 2	No response
	Phase 3	No response
	Phase 4	1

Table 28-35: Tendering & Maintenance regarding the project

Issues\ Projects	Distillation of water bodies of different fisheries projects-IA
Whether tender was called for execution of the work	Yes
e-tender issued	Not
Opinion: e-tendering increases efficiency of tendering	Yes
Opinion: e-tendering increases transparency	Yes
Opinion: e-tendering has increased number and quality of responses from vendors	21
Number of days given to respond to tenders	31
Number of vendors responded to the tenders	Yes, increased both quality and number of vendors
Method for evaluating the tenders	Financial criteria only
Any re-bidding made	Yes
Reasons for re-bidding	Price was too high
Selected vendor a Government / Private Organization	Govt
Whether selected vendor worked with the agency before	Yes
Agency responsible for the maintenance of the constructed project in future years	own agency
If same agency, whether any financial provision is there in the project for maintenance in future	Not related to farmers. The water bodies are Govt Farm

Table 28-36: Benefits and Challenges regarding the projects

Issues\ Projects	Distillation of water bodies of different fisheries projects-IA
Beneficiaries from the project other than the farmers	SHGs, State Fisheries Development Corporation Ltd
Complementary/ Supplementary projects (in the opinion of the respondent) that may help the beneficiaries	Govt. procurement, and 17 (Require construction of ware house, approach road in the farm area, more aerators, boundary wall for overall development of Govt farm)
Project needs enhancement / improvement	Yes ,
Problems associated with the existing project	Financial
Opinion: the project will complete in stipulated time	No
Reasons for delay in project	Shortage and delay of funds
Whether infrastructure is geo-tagged?	No
Reasons for not being geo-tagged	Geo tagging of previous projects has been started. After completion of these projects, current year project will be taken up

Table 28-37: Convergence with other projects

Issues\ Projects	Distillation of water bodies of different fisheries projects-IA
Whether any convergence with other schemes	Yes
Name of the schemes converged	Pisciculture under state plan
Ways by which convergence achieved	Both