

## 1. Title of the Project:-Sustainable Intensification of Potato for Achieving Self-Sufficiency in Odisha

### 2. Category:- Horticulture

### 3. Background of the project

There are several constraints for potato production in the state: limited availability of quality seed materials; high seed cost; inadequate storage and poor market linkages. Despite the challenges, the state of Odisha has immense potential to increase potato production by expanding acreage and improving productivity. The soils and environment in many parts of Odisha are suitable for cultivating potato in both *kharif* and *rabi* seasons. It is also an opportune time to diversify and intensify the rice-based system in a sustainable way, raise farmers' incomes through the production of this profitable crop, and diversify the agri-food system by integrating some innovative and sustainable technologies. This requires a holistic approach integrating the best available technology with backward and forward market linkages.

In Chhenua village of Puri district, 50 small holding farmers grouped together and pooled a total of 8 acres of land under the SFLF model of potato cultivation. All the farmers yielded an average of 25-30 t/ha from their small patch of land by following the Package of Practices (PoP) developed by CIP for potato cultivation. **Mr. Ekadashi Barik** is one of the most successful potato farmer in the village. He belongs to a farm family and continues farming for 30 years even in the present scenario where many farmers feel that farming is not profitable anymore, due



to pests and diseases, stagnation of crop yields, shortage of labour and high cost of cultivation. Earlier, he and his family had been engaged with paddy cultivation as traditional and main crop of Puri. With time progress he felt that paddy cultivation is no more profitable particularly in Rabi season. Again, the selling price is low as compared to production cost due to market glut. This situation stroked his mind to switch crop. By the time, he came across with the International Potato Centre (CIP) research personnel Dr. Shahid Ali and Mr. Ranjan in meeting held at Jamkunda panchayat office. There, he became convinced that it is profitable to take potato cultivation in Rabi season. The International Potato Centre (CIP) has the vital role in availing good quality seed tuber to farmers through seed supply chain from Punjab. Mr. Ekadashi has the ability to lead the group. His great passion to learn and do something new makes him a progressive farmer. He took potato farming seriously and planned all necessity for successful cultivation.

Mr. Ekadashi attended all training programme offered by International Potato Centre (CIP) and Department of Horticulture, Govt. of Odisha. He gathered all knowledge about scientific

cultivation of potato by reading leaflet, broucher and videos provided in training and meeting programme time to time. He always kept him connected with CIP staff and Horticulture personnel and gathered as much knowledge and idea about potato farming. He received good quality seed tuber of Kufri Jyoti variety with the help of International Potato Centre (CIP) for which he became more confident of good crop growth and show his thankfulness towards CIP. A genuine thing is that he left traditional farming where blindly fertilizer is applied in field without soil test and without knowing the crop requirement. He followed scientific PoP for potato cultivation starting from very beginning right from field preparation to post harvest handling. He is availed with Potato planting machine by International Potato Centre (CIP) which made ease in tuber planting with fertilizers application simultaneously. He adopted all cultural practices and plant protection measure in right time of crop growth. As we say, “as you sow so you reap”.

#### **4. Pre-Implementation Issues**

During the 1960s, Odisha cultivated 30,000 hectares of potato with yield of 12 tons per hectare. Fifty years later, the area cultivated has decreased by half and the yield growth during that period has been only 35 percent. During the same period, the national average potato yield has nearly tripled from 8 to 23 tons per hectare, an increase of nearly 300 percent. The decline in acreage and slow productivity growth can be attributed to shifting to less risky crops such as rice, groundnut, chickpea, mustard, and vegetables which are less expensive to grow. In many bumper production years, potato prices fall significantly below the cost of production resulting in huge losses for farmers.

In addition, the farmers in Odisha slowly shifted to other crops and giving up potato cultivation due to the market issues resulted state dependency on other state like West Bengal. Only 20 percent of the state demand is met from the state and remaining 80 percent potato is coming from West Bengal and Bihar.

#### **5. RKVY Initiative**

The overarching objective of this project is to support the government of Odisha in addressing underlying technological and social constraints to improve potato self-sufficiency in the state and help address income generation of small and marginal farmers. To make the Odisha state self-reliant in potato production, the ‘Small Farmers, Large Field’ (SFLF) model enables smallholders to benefit from economies of scale by pooling their holdings into fields of 50–500 ha. By doing this and synchronizing major field activities, individual farmers benefit from lower unit costs for quality seed, seed storage, machinery use, inputs, and field operations. The SFLF approach will be tailored to the needs of the specific farmer groups involved, including gendered differences where appropriate. Under this RKVY framework, strong market linkage has been established with processors and traders which enables the farmers a better price realization at harvest.

The project has developed gender-responsive training materials and trained around 5000 farmers and other value chain actors in improved production practices and marketing strategies. Exposure visits have been organized for administrators, scientists, farmers and other value chain actors to SFLF cluster in the states with the objective that farmers will interact with each other and share their experience working in SFLF model of group farming.

## **6. Technology/Tools development**

Like other farmers, Mr. Ekadashi Barik used potato planter for planting or sowing potato tuber. Previously, he was adopting manual planting of tuber which was slow, less cost effective, laborious, and cumbersome task and challenging for many farmers like him. But with the help of CIP, He used potato planter for which the tuber planting became easy, less time requiring, labour saving, cost effective and comfortable.

## **7. Outcomes/Impacts of the project.**

In the span of 2 years working with the Directorate of Horticulture, CIP has reached out around 5000 farmers and trained them on improved production practices to improve their potato productivity. The group of farmers (FPO/NGO) have been linked with the input providers like quality seed supplier, fertilisers and pesticides dealers. Under this RKVY project, CIP in partnership with Directorate of Horticulture, started intervention in Koraput during kharif season and cultivated about 1200 acres in the different blocks of the district. Introduction of machineries also reduced the drudgery and cost of cultivation by 40%.

Mr. Ekadashi Barik cultivated potato in 0.12 acre area and yielded 19 quintals of potato (1.6 t/ha). By using the automatic potato planter and digger supplied by CIP under the RKVY project, he saved INR 1000 and earned net profit of INR 23400 from 0.12 acre land by investing INR 5100 only. Before the CIP-RKVY project started, in 2018 he had earned INR 5000 from his 0.12 acre land by investing 6000 with yield of 8 quintal. With the CIP intervention the famers have doubled their yield and the net profit has been increased by four times.

## **8. Citation of 3-4 sentences from 4 to 5 beneficiaries that bring a change (Beneficiaries details to be mentioned)**

1. Ekadasi barik, Chhenua, Nimapada, Puri, Odisha Contact no. 8018879144
2. Amar, Kulhachuda, Balasore, Odisha Contact No. 9583846095/9556604228
3. Khaga Hintal, Gunthaput, Semiliguda, Koraput, Odisha Contact No. 9348753370
4. Mannu Pradhan, Kunarpur, Nimapada, Puri, Odisha Contact No.9861381895

## **9- Additional Information-**

1. List of project parameters/donors- RKVY in collaboration with CIP
2. Links to supporting materials

[A New Way Of Potato Farming In Nimapara Known As Zero Tillage Potato Cultivation , Know Details - YouTube](#)

[ଅଧିକାଂଶ ଉତ୍ପାଦନଶୀଳ ପୋଟୋ ଉତ୍ପାଦନ | High yielding Potato in Odisha | - YouTube](#)

[Annadata | ଆଜିର ସମସ୍ତଙ୍କ ପାଇଁ ଉତ୍ପାଦନ | - YouTube](#)