

Doubling farmers income through diversified farm technological package of practices

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Best Practice

1. Title of the Practice

Doubling farmers income through diversified farm technological package of practices

2. Objective of the practice

An increase in farmers income has been the National priority after declaration of Prime Minister of India to doubling the farmers' income on 28th February, 2016 during a Rally at Bariely, UP. Since then Rathindra Krishi Vigyan Kendra (RKVK) Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati has been focusing on enhancing farmers' income through several measures like reduction of farming cost by use of innovative low-cost local machinery, crop diversification in rainfed mono-cropped upland situation, innovation in poultry and fish farming, integrated farming system model, etc. following participatory approach with involvement of farmers in Birbhum district.

3. The Context

In view of achieving the target of doubling farmers income by March 2022, Indian Council of Agricultural Research (ICAR) has constituted a State-wise Coordination Committee to suggest appropriate means and prepare detailed action plan for the same. It has been decided that the committee may study the existing productivity and income levels in the respective State, to develop strategy needed to double the income of the farmers by March 2022. Area specific technology modules for various agro ecological sub-regions as well as for different socio-economic backgrounds are followed as the strategies by ICAR and implementing through different KVKs.

In this context, RKVK has implemented diversified farm

technological package of practices for doubling farmers income in Birbhum district within stipulated period. The farm productivity and income enhancing technologies are promoted among the farmers following participatory approach.

4. The Practices

RKVK has taken several initiatives towards productivity enhancement and profitability increment of the farmers in Birbhum district. Package of practices include innovation of low-cost machinery, cultivation of remunerative crops like Ekangi (medicinal plant) and Elephant Foot Yam, breed upgradation of rural poultry bird, inclusion of Bhetki (fish) in composite fish culture, and integrated farming system.

While considering the low-cost innovative machinery to reduce the cost of transplanting in SRI (System of Rice Intensification), an improved water saving technology of rice cultivation, a local made marker was innovated by a farmer, Sri Tapan Kumar Ghosh, village- Bishnubati, P.O. Sattore, after getting idea and inspiration from RKVK.

Ekangi (*Kaempferia galanga* L.), a medicinal plant, was introduced to the farmers by RKVK in the village Kartikdanga, P.O. Raipur in mono cropped paddy area under crop diversification. Ekangi has several medicinal properties. Its rhizome powder is used as appetite enhancer, stomach-ache. The rhizome extract is largely used as for rheumatism, repellent of mosquito and nematode. A package of practice suitable for Birbhum district for cultivation of Ekangi is developed and the plants in small plots are maintained in RKVK medicinal plant garden.

Cultivation of Elephant Foot Yam with improved variety Gajendra and Bidhan Kusum has also been initiated under crop diversification programme

since the year 2015 in village Kankutia by few farmers lead by Sri Abdul Majid in upland mono cropped area, where paddy cultivation is very less remunerative. The seeds (planting materials) are given to the farmers for the first time with proper training by RKVK.

Breed upgradation in backyard poultry farming by improved breed Vanaraja was implemented in 7 villages with 15 farmers in the year 2015 for increasing farmers income in poultry farming; 20 numbers of improved poultry breed of Vanaraja were distributed to those farmers.

Cultivation of Bhetki with composite fish culture was one of the important initiatives by RKVK towards the increasing farmers income within the existing infrastructure. In the year 2017 training and demonstration programmes were conducted with 10 farmers of 10 different villages. RKVK supplied the Bhetki fingerlings to those farmers first time and also trained for pond preparation and feed preparation for Bhetki in composite fish culture.

Fish based integrated farming system model has been implemented in the farmers field in 7 villages in the year 2016-17 to increase the profitability.

5. Evidences of success

The innovative portable marker for transplantation of paddy under SRI is a very low cost locally made implement costing about Rs. 2,400.00 only. The savings in cost of transplantation by using this implement is Rs. 3,570.00 in one ha area. The trainee farmer of RKVK, Sri Tapan Kumar Ghosh, has already made available the 4 Row SRI Marker to 232 numbers of farmers of his own village at free of cost for demonstration purposes which is proved to be the key factor for converting 62 ha of traditional paddy area to improved SRI area in his

village and surrounding villages. National Rural Livelihood Mission (NRLM) named "Anandadhara" of Govt. of West Bengal has approached Sri Tapan Kumar Ghosh for fabrication and supply of 100 numbers of the Innovative 4 Row SRI Marker. ICAR awarded him with the Innovative Farmer Award by the Honourable Union Cabinet Minister of Ministry of Agriculture and Farmers' Welfare, Govt. of India, Sri Radha Mohan Singh on 21.03.2016 at the Krishi Unnati Mela - 2016 organized by the ICAR-IARI, Pusa, New Delhi. This practice was also awarded the Second Best "State Level Innovative Farmer Award" by the Director Extension Education, Uttar Banga Krishi Viswavidyalaya, Pundibari, Coochbehar at State Level Innovative Farmers' Meet - 2019 organised by the National Innovation Foundation - India, Dept. of Science and Technology, Govt. of India on 06.09.2019.

Before cultivation of Ekangi, farmers used to grow paddy (variety MTU-7029) and earned net return of Rs. 22,500.00 per ha in their rainfed mono cropped area. After crop diversification with Ekangi cultivation the farmers gained an increase in profit by 3.46 times. Starting with three farmers in 2015-16 at Kartikdanga village, Ekangi cultivation is presently done in 6.7 ha land by 25 farmers. It is also being adopted by another 60 farmers of 12 villages of the district.

The farmers got benefit cost ratio of 6.24 by cultivation of Elephant Foot Yam in comparison to 1.82 in paddy cultivation in the same mono cropped area under rainfed situation. After seeing initial success being part of front-line demonstration and training programmes of RKVK, 185 farmers adopted it. It has also been adopted by 118 farmers of another 20 villages in Birbhum district, 30 farmers of nearby villages of Bardhaman district

and 10 farmers of the neighbouring Dumka district of the Jharkhand state. Sri Abdul Majid (a trainee farmer of RKVK) was awarded for Excellence in Agriculture Sector for the commercial seed production of high yielding improved varieties of Elephant Foot Yam by the Honourable Union Cabinet Minister of Agriculture and Farmers' Welfare, Sri Radha Mohan Singh on 22.02.2016 at Foundation Day Celebration of ICAR Eastern Regional Research Complex at Patna.

Among the trained farmers, Sri Tapan Ghosh of village Bishnubati performed very well in breed upgradation of backyard poultry farming. He earned more than double by adopting the technology. After seeing his success, more than 185 farmers adopted this technology in the subsequent years in different villages of Birbhum district. Shri Tapan Kumar Ghosh was conferred the Innovative Farmer Award for his pioneering role in breed upgradation of back yard poultry farming with rural improved poultry breed by the Honourable Minister of Agriculture and Farmers' Welfare, Shri Radha Mohan Singh on 22.02.2016 at the ICAR Eastern Regional Research Complex, Patna, Bihar.

Introduction of Bhetki in composite fish culture has increased net return by more than 7 lakhs rupees from one ha pond in one year. Initial success has resulted in adoption of this practice by 30 farmers in different villages in the district.

Fish based integrated farming system has resulted an increase in farm profitability by many folds. Many farmers and rural youth from different blocks have adopted the IFS model of RKVK. Presently 45 farmers and rural youth from 45 different villages of 5

different blocks in Birbhum district are trained and adopted this profitable practice.

Thus, RKVK has promoted location specific technologies as part of package of practices to doubling the farmers income by 2022, one of the most important missions of our country.

6. Problems Encountered and resource required:

To disseminate the aforesaid practices, a greater number of field staffs is required to reaching the farmers of distant places. ICAR is supporting with finance at their level. Financial supports from University level are also required for replicating the practices throughout the district.

7. Notes (Optional)

Few relevant photographs related to the initiatives for doubling farmers income through diversified farm technological package of practices are given under.



Sri Tapan Ghosh assembling the Innovative Portable SRI Marker and Fellow Farmer Sri Monotosh Ghosh is operating the same



Cultivation of Ekangi (a medicinal plant) under crop diversification at Kartikdanga village



Introduction of Bhetki in composite fish culture