

SUCCESS STORY OF KVK, SOUTH TRIPURA

Name of the KVK

Krishi Vigyan Kendra, South Tripura (Host Institute: ICAR Research Complex for NEH Region)

1. Title of Case Study

EMPLOYMENT GENERATION THROUGH PRODUCTION OF AMRAPALI MANGO PLANTING MATERIALS BY RURAL YOUTH IN SOUTH TRIPURA

Background of the Problem

The South Tripura district is the second biggest district of the Tripura state in terms of population. The net cultivated area of the district is only 27 percent, which is about 84,101 hectares. About 49 percent of the total geographical area is under forest. There are 2,18,175 of main workers i.e. agriculture labourers and other sector workers. The number of non-workers is around 5,26,241.

There are no other resources in the district other than agriculture, horticulture, livestock, fisheries, etc. The holdings are small, and agriculture is mainly rainfed and at subsistence level. Paddy (rice) is the main food crop grown. Potato, sugarcane, jute, mustard, etc. are some other crops grown in the district. Tea, coffee, rubber, jackfruit, banana, mango, pineapple, etc. are the major fruits and plantation crops.

South Tripura district has huge resources and also great potential for horticulture development. The agro-climatic condition and hill slope in South Tripura district is very much congenial for successful growing a variety of horticultural crops like Sapota, Banana, Papaya, Guava, Mango, etc. Most of the farmers of the district particularly tribal farmers grow horticultural crops traditionally.

Concerted research efforts have been made by ICAR and State Agriculture/Horticulture department to identify a large number of improved varieties and production technologies of fruits. In mango fruits, Amrapali and Mallika variety has been found most suitable variety under Tripura agro-climatic condition. These varieties of mango are dwarf vigorous type with regular and late bearing. It yields on an average 16 t/ha with 1600 plants population.

In South Tripura district, the demand of mango seedlings is more than 1 lakh per year under Horticulture Technology Mission, NREGA programmes, Army Plantation programmes, etc.. However, the production of seedlings and grafted mango plant is very low. In light of the high demand of quality mango planting materials in the district, Krishi Vigyan Kendra of ICAR Research Complex for NEH Region has taken lead to establish a mother plant nursery for Amrapali mango and train the rural youth for production of quality planting materials.

KVK Intervention

Motivation to establish mango planting material nursery. The Krishi Vigyan Kendra of South Tripura had introduced horticultural fruits by planting 100 Mango plants, 50 Litchi plants and 20 Sapota plants in its farm for demonstration. Based on the needs, resources and usefulness, the KVK took initiative to prepare the minds of youth farmers to undertake mango nursery development programmes in their home garden. The farmers didn't know about grafting of mango plant as well as nursery establishment. They didn't had any idea about required materials and skills for scion cuttings, root stocking, poly packing, grafting and nursery management for production of quality mango planting materials. The aspirant farmers were trained by KVK in scion cuttings, poly bag preparation and grafting of Amrapali mango plants and nursery management. The scion was provided from the mother plants grown in KVK farm.

Establishment of Rural Mango Nursery-a success story

KVK has trained youth farmers of Bokafa, Kakraban, Matabari and Belonia blocks for Mango (Var. Amrapali) nursery management through the vegetative propagation. As a result of development of skills through number of trainings and practical exercises, rural youth farmers started production of mango planting materials at their home garden.

Sri Priyabrata Datta (aged 25 years) and Sri Uttam DebBarma (aged 21 years), a resident of the Takmacherra Village, and Manoranjan DebBarma (aged 26 years), resident of Manu of Bokafa Block of South District in Tripura started establishing Mango nursery in their home garden. All three youths could not continue their schooling due to poor economic condition. They were working very hard in the fields along with his parents to meet the family food requirements. In 1998-99, they happened to attend a training programme on nursery techniques at KVK, South Tripura which was the turning point in their life. The training motivated him to start a plant nursery at his farm. With the whole hearted support of KVK, they established their nursery which presently became a popular among the Mango plant producing farmers of the district. The SMS of KVK assisted them to procure scion of Amrapali mango plant. With an initial investment of Rs.5,000 they are making a gross income of Rs.30, 000 to 90,000 per year.

Social Impact

Over the year, development of skills was conceived to stimulate and strengthen the capability of youth farmers and farm women for income generation through one of the most potential horticulture enterprises i. e. local production of quality mango planting material. Some of the **social impacts** of the participatory trainings and practical exercises/demonstration are as follows:

- Participating farmers had converted their knowledge into products i.e. production of mango planting materials at farmer's home garden.
- Mango nursery has been established by unemployed trained youth farmers of Bokafa, Kakraban, Matabari and Belonia blocks of the district. In the vicinity of KVK, 45 youth farmers have their well developed mango nursery. A list of farmers and their income status through mango nursery is given in Annexure-I.
- The most important fact is that the family members who used to go outside in search of wages are now engaged in their own farm nursery. The nursery is on small scale, but it has helped in creating an assured employment and raising social value of the rural youth farmers and farm women in the community.

Marketing channel

- Production of about 50000 – 100000 mango planting materials every year by a group of 40-50 farmers in the district.
- The grafted planting materials are being supplied to State department of Horticulture, Agriculture and Rural Development for Technology Mission and NREGA programmes. Private nursery and Army offices of Tripura also come to buy planting materials from these rural nurseries.
- Income of the each participating farmers has been reached about Rs. 20000-800000 per year.
- Employment opportunity in the private nursery of Tripura during May-July every year @ Rs. 3.00 per plant for mass grafting and additional Rs. 3.00 per plant for successful grafted plant. In this system, income of each farmer youth is about Rs. 15000 – 25000 per year.

2. Title of the Success Story

EXPANSION OF GROUNDNUT IN RAINFED FARMING SYSTEM OF SOUTH TRIPURA

Back ground of the Problem

The cropping system, in South Tripura, revolves around rice and vegetables. Productivity of rice under upland terrace and 'tilla' land is very low owing light texture and low P content in soils. Moreover, in most of the tribal areas shifting cultivation, is still dominant. The upland rice crop in the South Tripura district is not remunerative because of low and erratic yield (650- 934 kg/ha). Moreover, 77 percent of farmers are marginal (less than one hectare) in nature and holds 23,492 hectares of land which is about 38 percent of the total holding. About 19 percent are small farmers (more than one but less than two hectares of land) holding an area of 25,469 hectares of land.

Changeover to groundnut, a more tolerant crop to mineral stresses, with modern agricultural technologies may bring substantial yield increase and provide additional income to marginal farmers in the district. The trial conducted by ICAR clearly indicated that, in Tripura, as high as 3970 kg/pod can be obtained from ICGS 44 variety. The farmer's adoptability to groundnut is easier due to less management problem compared to rice as it requires less fertilizer inputs for its production.

With this background, Krishi Vigyan Kendra (KVK), South Tripura introduced groundnut cultivation in farmer's field through Frontline demonstrations (FLD), trainings and field day activities.

KVK Intervention

In the year 2006-08, KVK started FLD programme on groundnut (variety ICGV-86590) in South Takmacherra, Santirbazar, and Baisnabirchar villages of the district covering an area of 1.0 ha. Again in kharif 2008-09, FLD on Groundnut was extended in villages like Battali, Dudhpushkarini, Mogpushkarini and Baisnabirchar. In these FLD programmes, KVK has demonstrated standard practices of cultivation with line sowing of seeds, maintaining of proper distance (40 x 15 cm), intercropping (with Arhar, Maize, Citrus, Amrapali Mango) and other intercultural operation including earthing up, pest and disease management, etc.

Cultivation of Groundnut - a non-traditional crop of the district

As a result of FLD on groundnut and development of skills through number of trainings two farmers of South Tripura district started cultivation of groundnut by their own.

Sri Anand Mohan Patari (aged 35 years) a resident of the South Takmacherra Village of Bokafa block and Nibaran Debnath (aged 21 years), resident of Dudhpushkarni village of

Kakraban Block of South District in Tripura started cultivation of groundnut in 1 kani area (0.16 ha). They are progressive farmers and working very hard in the fields for getting better production and income for their family. In the first year after FLD and training conducted by KVK, they got yield up to 300 kg from 1 kani area (0.16 ha) of variety ICGV-86590. Subsequently, seed of groundnut variety of ICGS-76 and GG-20 was given to the farmers and they got yield up to 350 kg from 0.16 ha. Now, every year they are producing groundnut seeds for neighbouring villages and getting income of Rs. 10000-12000 per season from just 0.16 ha of land.

Social Impact

With the demonstration of new variety of groundnut with cultivation technologies, the number of farmers and area increased from 7 to 71 and 1.2 ha to 20 ha respectively in four years (2006-2009) of demonstration (Table 1). Using the improved variety ICGV-86590 with scientific package of practices farmers obtained average yield up to 1900 kg/ha and increase in yield over local check (1200 kg/ha) was 58.33%. In case of variety GG-7, yield obtained was 2000 kg/ha with 66% increase in yield.

Farmers of neighbouring villages who attend the awareness and field day programmes of groundnut also shown deep interest to cultivate groundnut in upland areas. Introduction of variety like ICGV-86590, ICGS76, GG-20 and GG-7 created a great awareness among the farmer and indicates high potential of its cultivation in coming years.

Table 1. Area expansion under groundnut cultivation in South Tripura District

Year	KVK intervention	Area coverage	No. of farmers
2006-07 (Kharif)	Introduction of improved variety of groundnut (ICGV-86590 , GG-7, GG-20, ICGS 76) and intercropping (with arhar)	1.2 ha	7
2007-08 (Kharif)		5 ha	17
2008-09 (Rabi)		8 ha	20
2009-10 (Kharif+Rabi)		20 ha	71

Marketing Channels

After two years of demonstration and training, farmers of South Tripura had sold the groundnut seed @ Rs. 35 per kg in the year 2008-09 in the local market. Farmers earned up to Rs. 66,500/- per ha with a BC ratio of 2.88. Many farmers from other villages like Devipur, Haripur, Murapara, Hrishymukh of district also started buying groundnut seed from the cultivating farmers. The groundnut variety of GG-7, GG-20 and ICGV-76 are good for confectionary purpose so the demand of these groundnut variety increasing day-by-day by Bakery shopkeepers.

Farmers of South Tripura are happy and highly delighted to find an alternative entrepreneurship development opportunity through production of groundnut. Now

farmers who never cultivated this crop have started growing groundnut and more and more area under groundnut cultivation are expected to cover in this district in the coming seasons.

Linkage with technology/development organization

KVK has good linkages with National Research Centre for Groundnut, ICAR Research Complex for NEH Region, State Agriculture Department and other KVK of the region. Improved seeds are being procured from NRC for Groundnut, Junagarh for multiplication at local level. KVK, South Tripura also producing seeds in farm and farmer's field. In the year 2009, more than 7 quintals of seeds were distributed among farmers of the district for expansion of groundnut area in Rupaichari and Rajnagar Blocks.
