Success Story under NICRA TDC

Technology demonstrated: Promotion of location specific short duration rice var. RC Maniphou-10

Problem identified: Low productivity due to cultivation of local Strain.

Description of technology: Variety: RC Maniphou-10

Seed rate: 35-40 kg/ha

Spacing: 25x15 cm

NPK@80:60:40 kg/ha

All P and K and 50% of N applied as basal dose and 25% N at maximum tillering and 25 % at panicle initiation stage.

Impact of intervention: Various cropping system using short duration rice varieties and intensive input management may increase the land use efficiency and enhance the production level if sowing of rabi crops is made on time. To stabilize crop production and to enhance profitability, suitable high yielding short duration rice variety could be a viable venture in the existing rice-based cropping system in NICRA adopted village. Shri K. Laltanpuia could convince the other farmers with the advantages of cultivating shorter duration variety. At present around 5 farmers have adopted the technology.

How the interventions minimized the impact of climate variability: Due to shorter duration of the variety, there is advantage of early planting and contingency measures could be achieved without any lose in productivity. Succeeding crop has wide opportunity for early sowing window.

Yield and Economics: The yield of RC Maniphou-10 was increased in the successive year in demonstration plots. The highest demonstration yield (44.50q/ha) was recorded during the year 2020, which was 10.55% higher over the demonstration yield during 2019 (40.25q/ha). The average two years' demonstration yield of RC Maniphou-10 was recorded as 42.37q/ ha. Successive two years (2019 to 2020) of the experimental demonstration of RC Maniphou-10 resulted that increase in grain yield was from 25.00-28.98 per cent with mean of 26.99%. The B:C ratio was 1.95 in demonstration plots compared to 1.20 in farmers' practice.

Technology demonstrated: Low-cost vermicomposting for soil health management

Problem identified: Poor nutrient status of soil

Description of technology :

No. of cycles:

Unit size: 12ft X 3ft X 1.5ft

Species : Eisenia foetida

No. of cycles - 5

Impact of intervention: The main purpose of technology transfer of vermicomposting is basically for the management of farm waste (Agriculture and livestock) to transform into a beneficial soil amendment with the used of earthworm. The nutrient value of the vermicompost (Black gold) is higher with additional advantages in enhancing both the physical and chemical condition, increased water holding capacity of soil. Besides the cost incurred on chemical fertilizers could be reduce to certain amount. Shri Tluanga earned additional income from the vermicompost at a reasonable rate. At present he is having 4 functional units. After realizing the innovative technology, farmers from the neighbouring villages start adopted low-cost vermicomposting in small scale at their respective farm.

How the interventions minimized the impact of climate variability: There is reduction in cost of inputs due to use of own farm generated organic inputs as well as reduction in application of chemical fertilizers to a certain extend. The organic composts create less environmental pollution than chemical due to their positive biological effect and modification of physical and chemical characteristics of the soil because their nutrients are released slowly to be used by the plant. Besides, there is significant increases in micronutrients in field soils after vermicompost applications.

Yield and Economics: Shri. Malsawm Tluanga has succeeded in earning an annual income of Rs. 96,000 to 98,000 (i.e from 5 cycles) within 40 to 45 days by a single cycle. The average yield of vermicompost was 40 qt/unit.

Rain water harvesting technology, *Jalkund*- a boon for far flung hilly farmers under NICRA

Hnahthial village of Lunglei District has a total geographical area of about 16 sq. km. The average annual rainfall is about 2000mm.The village receives high rainfall but lacks of rain water harvesting structures and management leading to severe water scarcity, particularly during the post monsoon season(November -April).Rain water storage and harmonious Water Use Efficiency(WUE) are the key to sustainable livelihood in the village. Under NICRA Project, KVK Lunglei demonstrated 75 numbers of low cost rain water harvesting technology '*Jalkund*'in NICRA adopted village and its adjoining villages. The low cost material like Polyethylene pond liners(200 GSM) was used to construct pond generally with a size of 5x4x1.5m.The storage capacity of these tanks are in the range of 30000L^3.Construction of *Jalkund* and recycling of water through this system increase the productivity of the farmers by diversifying farming system like crop and livestock. As noticed in Hnahthial and its satellite villages, *Jalkund* technology had uncountable big and small impacts on the livelihood of the farmers.

Resource conservation measure-Mulching technology for maintaining moisture and control weed in dragon fruits and rabi vegetable crops

Hnahthial village of Lunglei District has a total geographical area of about 16 sq. km. The average annual rainfall is about 2000mm. But due to the unusual occurrence of dry spells experienced in the last few years, the farmers were facing low crop yield. Under NICRA project, KVK Lunglei demonstrated mulching technology; organic- straw mulch and inorganic-mulching film (100 micron) in rabi and fruit crops to 30 selected farmers in NICRA village. Through mulching, soil moisture could be effectively conserved to a great extent and the need for regular irrigation was reduced, control weeds has helped in saving lots of time and labour of the farmers. It also increased the soil temperature that led to faster germination of rabi vegetables and fruit during dry season.

Doubling farmers' income by dragon fruit cultivation

Introduction:

The NICRA Village, Hnahthial has experienced diverse climatic condition viz. erratic rainfall, moisture stress, poor nutrient availability, variability of climate, etc. The ill effect of this condition led to physical and economical scarcity of water in the village due to which crops could not be grown. Meanwhile, the demonstration of stress tolerant varieties- dragon fruit under the NICRA project helped the farmers to increase the crop production and doubling the farmers' income.

Key intervention:

Keeping the above situation in view, KVK Lunglei demonstrated water stress tolerant crop i.e. dragon fruit var. *Costaricensis* under the NICRA project in Hnahthial village. Five (5) farmers were selected in the village covering an area of 1.5 ha and organized awareness training on package of practices and provided planting materials viz. saplings, concrete pillars, tyres, plastic thread and fertilizers in convergence with state Horticulture department. Besides, all other technological practices were carried out under the supervision and guidance of KVK Lunglei, Mizoram Scientist.

Output/ Outcome:

At the onset of the practices of stress tolerant crop, Mr. H. Lalnunmawia, Chanmari Veng, Hnahthial made doubled of his income during second year of cultivation. In 2016, he started cultivation with 250 trees in an area of 0.25 ha. At the first year, he harvested 6-8 kgs per tree. From the second year, the production has increase to 14-15 kgs per tree and sold at the rate of Rs.200/kg.

Impact:

The dragon fruit farmers who are happy with the adoption of the stress tolerant crop. Farmers cultivating dragon fruits are not only within the NICRA village, Hnahthial, but also the technology has spread to the adjacent villages wherein the farmers are coming forward approaching the KVK and requesting them to demonstrate this variety in their respective villages.

Rearing Vanaraja birds spin off less income

Low productivity by the local or desi birds is mainly due to the low genetic potential and low quality feeding along with uncomfortable housing and disease incidence. A good example of spin off effect regarding rearing Vanaraja birds to get more income was observed in Hnahthial village under the NICRA project. Mrs Vanlalsangi, 54yrs, Electric Veng Hnahthial was a farmers and also practice backyard poultry with a traditional local birds. But after hearing about the performance and introduction of Vanaraja birds by the KVK Lunglei under the NICRA Project she was much interested to rear Vanaraja birds and was selected by KVK Lunglei as one of the beneficiaries. She received 10 vanaraja chicks in 2012 and also underwent training in various aspect of backyard poultry rearing. From these 10 birds, she has used with local hen to hatch Vanaraja chicks and now she has produced more than 100 chicks. The feed offered by her to the birds contained boiled rice, some amount of wheat bran and regularly providing some leaves and plant locally available. The eggs produced in her flocks are being procured by local people at the rate of Rs 10 per egg. She has generated more than Rs 15000 at the rate of Rs250 per Kg live body weight. Thus, from a small number of chicks she has generated more than Rs 20000. These birds due to their physical adaptability to the diversified agro climatic conditions and better production potential in terms of meat and egg with minimum investment many farmers in the village now prefered bird in the NICRA vilage.