Technological interventions to enhance productivity and income in Arid Zones:

A compilation of successful cases under the Farmer FIRST Programme

Vijay Avinashilingam N A[1]*, N K Jat[2], P R Meghwal[1], Bhagwan Singh[1], S K Singh[3], Sharvan Ram[4] and C Mola[5]

ICAR–Central Arid Zone Research Institute, Jodhpur, Rajasthan 342 309

Agriculture in arid western Rajasthan is very challenging due to low, erratic rainfall and limited irrigation facilities. Under the prevailing climatic conditions, farmers are practising subsistence farming with low farm income and profitability. As a consequence, distress land sale, diversion of land for mining, urban migration, etc. are the common phenomenon observed in rural areas. Present article was formulated to document the successful technological interventions in terms of varietal intervention, inter cropping, crop diversification, nutrient management and production of critical farm inputs coupled with capacity building and awareness generation practiced among the farming community in arid region to make farming more profitable and reduce livelihood risk. Most of the technological interventions were conducted through participatory mode in selected locale under ICAR - Farmer FIRST programme. The successful performances of narrated technologies at farmers' field revealed that the technological interventions coupled with technical backstopping could definitely enhance the income of farmers and ensure livelihood security in arid region in general and Jodhpur in particular.

Key words: Arid regions, Crop production, Income enhancement, Vegetables, Vermicompost

CROP production in arid region is challenging due to low, erratic rainfall and limited irrigation facilities. Majority of the farmers dwelling in these region practice rainfed farming for their livelihood sustenance. To make farming more profitable, it is always advised to farmers to adopt low cost techniques like use of certified seed of improved varieties, intercropping of arable crops and trees, timely sowing, seed treatment and optimum seed rate for maintaining adequate plant population combined with proper plant protection measures. The ICAR-Central Arid Zone Research Institute under ICAR- Farmer FIRST Programme (FFP) designed interventions in farmers' participatory mode by providing them suitable technological inputs along with technical backstopping and capacity building.

Technical interventions maximize the output of intercropping in agri-horti system, which combines arable crops and fruit trees on the same piece of land with the available resources. This alternative land management system, besides producing fruits and arable crops reduces the risk of crop failure in case of severe drought and harsh environmental conditions. The practice of growing ber trees in between crops is considered to be highly beneficial. Further the crops used in combination are useful in many ways. They serve as an additional income, if the intercrops grown are legumes they can add nitrogen and other nutrients into the soil, apart from improving the soil and physical properties and hydrological behaviour. The competition for various resources like space, water and nutrients by the intercrops limits the weed infestation. At the same time, cultivation of drought hardy legumes such as moong bean, moth bean and cluster bean are undertaken in the arid region to stabilize crop production. The paper here discuss the successful story of farmers' field under Farmer FIRST Programme.

Case-1: Intercropping of moong and wheat in ber orchard

Technology implementation and support

Shri Khengara Ram, s/o Shri Raju Ram, 52 years old belongs to