# Doubling Farmer Incomes in Five Years

***Ajit Maru, GFAR's Senior Officer, reports on an interesting workshop in India he recently participated in where GFAR's and APAARI's primary objective of transforming agricultural research and innovation systems was illustrated in practice by SKDAU, a GFAR and APAARI partner!***

How to double real incomes of smallholder family farmers and marginal farmers who have less than a hectare of land in 5 years by 2022 was the challenge discussed at a Workshop organized by the Sardarkrushinagar Dantiwada Agricultural University (SDAU) in Gujarat, India? SDAU is a GFAR and APAARI partner and is developing and implementing a multi-stakeholder collective action on further developing agriculture in the parched, semi-arid, arid and desert lands of the 7 districts of North Gujarat. These districts are the agricultural development responsibility of the University.

The smallholder and marginal farmers of North Gujarat have an average land holding just above 1 hectare (4-6 Bighas). They earn between 900-1200 USD annually from this land. This is barely above the income of 1.5 USD per day per family. Many of these farmers are tribal and from economically and socially deprived communities. Their agricultural lands are parcels in the Aravalli hills, Kutch Rann (desert) and saline soils at the margins of the desert. They together grow more than 35 different crops in 2-3 seasons of monsoon, winter and summer. These farmers on their own have experimented with growing both traditional, such as Bajra (Pearl Millet), Castor and Cotton and non-traditional such as Pomegranates, Potatoes, Papaya and Figs.

The workshop was preceded by a district level workshop at each of the 7 districts at the University at Krishi Vigyan Kendras (Farmers Science Centres) in which representative farmers, with one at least a woman farmer from each of the 62 talukas (a sub-division of a district which is the administrative development unit, each district has 7-9 talukas) and scientists and extension professionals of SDAU participated. An extensive survey on crops, productivity, incomes, "hotspots" farmers faced in their farming system from input, agri-services and value addition to their farm products as also their possible solutions were jointly collected by farmers, scientists and extension professionals. The results of these workshops were collated, analyzed and jointly interpreted by farmers, University researchers and extension professionals at the two day workshop of the 7 Districts together, organized at SDAU.

The farmers revealed a myriad of issues ranging from lack of more accurate, localized weather forecasts, lack of quality seeds, over seeding their fields, extensive application of fertilizers, improper, inadequate and over watering and irrigation, lack of pest and disease management through forecasting, surveillance and monitoring, extensive and unscientific use of insecticides, etc. They raised the issue that increased productivity does not necessarily increase incomes. Both the researchers and extension specialists and farmers jointly discussed and

presented their solutions and the support they expected in solving their problems from the University.

Some very deep insights and home truths emerged from the Workshop. The most important was that incomes could be increased substantially and the challenge met as there was a significant yield gap between farmers of the same talukas, districts and same agro-climatic conditions. There was an average of 40-80 percent difference in medians of yields among the farmers with the highest and lowest yields. This revealed that farmer to farmer exchange and sharing of information, experiences and skills could bring about increases in productivity. It was realized by all at the Workshop that incomes can be increased not only by increasing yields and productivity of inputs and resources used but also by reducing costs and time spent in acquiring inputs and farming operations, improving efficiency of all inputs, reducing wastage and improving quality of outputs at various stages of the farming cycle. Quality produce appropriately processed at harvest and post harvest stages can bring higher profits through participation in markets beyond the local such as national and international markets. Farmers were impressed that they follow not only Good Agricultural Practices (GAP) but keep records of such practices for their crops and register themselves to the local GAP registration authorities. Farmers demanded appropriate smart phone based applications for their farm records.

The Workshop aptly summarized the innovative approaches that now need to be introduced in developing agriculture in the area in the charge of the University. The first key innovation was to forego the "package of practices" and "T&V" approaches initiated during the Green Revolution in Farm Extension and Advisory Services in India and replicated in many other parts of the world. The second was to identify "Hotspots" or problems that affect farmers productivity and profits in the farming system and value addition chains that need to be solved and have to be solved together with all stakeholders from input suppliers, farmers, the extension, education and research system, the market intermediaries and the logistics providers. The third was to introduce a more data driven and information intensive farming with identified Good Agricultural Practices (GAPS) and enabling farmers to make their farming records and use them in GAP. The most important "Aha!" moment in the Workshop was when a participant commented in the Workshop that farmers now need to be made "scientists" and innovators and the University researchers, teachers and extension agents now need to realize that their primary role is to be facilitators and enablers of innovation and innovators. After all, doubling of farmers real incomes in a short span of five years would need to not only think but act "outside the (farming and its extension) box" and that the University will enable this thinking to accelerate progress and development among all actors and stakeholders in farming and agriculture.

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