

Farmer FIRST: Developing risk-mitigating mechanism

Benefit:cost ratio of a farm depends upon the input cost, which is largely decided by the soil health, nutrient management and plant protection besides seeds etc. Efficient utilization of Soil health cards i.e., estimating the nutrient status of soil and then supplementing it with the required nutrients will not only reduce the expenditure on fertilizers but also keep the soil healthy. In India, 2.1% of the geographical area (about 6.73 million ha) of the country is salt affected; out of this 2.8 million ha are sodic and mainly occur in the Indo-Gangetic plains. The appropriate soil treatment can also bring the wastelands under farming, helping farmers earn more from degraded lands. The fragile soil health causes economic disaster to farmers, and those depending only upon crop sector can face difficult times.

Livestock provides a continuous stream of output, that can be used within the producing households for improving the household nutritional security, or as a living bank with offspring as interest, and risk-mitigating mechanism during crisis. Livestock sector has grown faster than the crop sector, raising its share in the total value of output of the agricultural sector from 21% in 1982–83 to 30% in 2017–18. In absolute terms, the value of output of livestock is now more than the value of output of food grains. In the past three decades, the sector has grown at a rate of over 4% a year, which is almost 1.3 times of the overall growth of the agricultural sector, lifting their contribution to agricultural growth from 31% during the 1990s to 36% during the 2000s. The growth in livestock sector was found less volatile than the growth in crop sector, and has supported agricultural growth against climatic shocks to crops. During a crises, sale of livestock and livestock products provides livelihood security. At the macro level, this barricades the agricultural shock. Livestock is a part of mixed farming system and in case of climatic shock, though both crops and livestock experience a shortfall in the production, yet extent of shortfall is small in livestock production because even if crops fail to produce grains, their by-products remain available as fodder for livestock.

Besides livestock, fisheries sector as a whole and aquaculture in particular with an average annual growth rate of 6% and a work force of 14.66 million people involved directly and indirectly, has great potential to significantly contribute to food and nutritional security of India. Fisheries sector also contributes to foreign exchange earnings through export of fish and fishery products. Aquatic environment continue to suffer from anthropogenic interventions and climatic extremes to sustain its resource base. Despite fluctuations in supply and demand due to changing state of fisheries resources, and economic environment and climatic conditions, the sector remains an important source of food; essential dietary requirement; employment and revenue; and will continue to remain so provided the resources are exploited judiciously and responsibly sustaining their availability for present and coming generations.

The Council took a determined step forward and created Farmer FIRST (Farm, Innovations, Resources, Science and Technology) Programme. The aims of FFP are to enrich farmer-scientist interface for technology development and application. It is an opportunity for the researchers, extension personnel and farmers to work together and find appropriate ways to assess different solutions. There are around 50 projects throughout the country. The interventions of each project were broadly categorized into six modules, viz. crop based, horticulture based, livestock and fishery based, natural resource management based, enterprise based and integrated farming system module.

The *Indian Farming* June 2019 issue has been planned to showcase the achievements of some of the FFP projects pertaining to modules based on natural resource management, livestock and fisheries. The article summarizing the impact of FFP on crop production was published in May 2019 issue. Articles on livestock and fisheries sector would be useful in guiding farmers in these sectors.

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