
Subject III

Innovations in Agri-input and Service Markets Towards Sustainable Agriculture

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The role of agri-inputs and services in increasing agricultural production, national income, enhancing food, nutritional and livelihood security is very well known. The quality seeds, which alone contributes 15-20% that even goes up to 45% with efficient management of other inputs. Farm mechanization helps in increasing productivity, reducing cost of production, area expansion, and drudgery reduction. Similarly, services like agricultural credit, insurance, context-specific climate information and technology dissemination have played a critical role in facilitating the use of quality inputs and in the adoption of improved technologies and innovations. Even though quality inputs and services play a significant role, many farmers are still out of reach for quality inputs and services. The use of fertilizers and pesticides is often unbalanced and unscientific, adversely affecting the environment, farmers' income, and export earnings. Access to agricultural credit from institutional sources remains low, particularly among resource-poor farmers.

Therefore, the society decided to include a theme which has not been debated much in the past and which should be broader enough to accommodate as many papers as possible. The broader objective of the theme was to identify the key issues in agri-inputs and service markets and the innovative solutions that could address these issues.

An overwhelming response was received from the contributors, and more than 80 full-length papers were received under the theme. Three authors withdrew their papers. Few were not up to the mark. Overall, 74 papers were selected including 10 full-length and 64 in summary. Relevance of the paper with the theme was the first criterion for selecting full-length papers. Besides, robustness of data, methodology, and presentation were also considered while selecting the papers. During the conference, total of 28 papers were presented, including giving opportunity to three young researchers who could not submit the papers on time but attended the conference. Dr Shalander Kumar, Deputy Global Research Program Director, Enabling systems transformation program, ICRISAT, delivered the keynote address. He outlined the objective of the theme and highlighted the role of startups in efficient input and service

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delivery systems and technology adoption in the country. The key recommendations, including the research gap that emerged from the discussion, are as follows:

- The important issue in seed system is to improve seed distribution and extension services.
- Studies on farm mechanization, though largely from irrigated north-western plains and southern semi-arid tropics, have highlighted strengthening custom hiring centres and also to develop second-hand farm machinery markets for affordability of machinery for smallholders, reduce cost of cultivation, minimize upfront cost of heavy machinery.
- On credit market, quite a number of studies were received which mainly highlighted regional disparities. The studies recommended sub-sectoral priority sector lending targets as some states are still far behind in access to institutional credit.
- The studies also highlighted due weightage to sustainable agricultural practices for agricultural credit disbursement. This may be done by defining separate Scale of Finance for Climate Smart agricultural practices as one study has specifically pointed out.
- One of the important factor that emerged as most important determinant of adoption of sustainable agri-inputs was importance of awareness, capacity building and access to information which was highlighted in almost every study. Therefore, there is a need to generate evidences on efficiency and effectiveness of different extension system and identifying how extension system can be revamped. There is a need to organise joint seminar/consultation of agricultural economists and agricultural extension specialist to bring out specific strategies.

A wide range of topics has been covered by researchers, but several important areas related to input markets remain underexplored. Researchers, particularly the young agricultural economists, are encouraged to take up following research topics to fill the research gap.

- What are the quality issues and best practices in the application of agrochemicals? How sustainable agrochemical application practices can be promoted?
- What is the impact of various agricultural extension models? What could be the cost-effective and efficient agricultural extension delivery models in various contexts and regions?
- What role agri-startups are playing in promoting the use of quality inputs and what could be the strategies to further enhance their effectiveness?
- How service marketing, especially the custom hiring of precision machinery for input application, can be made more efficient? What is the potential of custom hiring in improving agricultural productivity, input use efficiency,

reducing drudgery, and attracting youth in agriculture? Though one paper from north-eastern hill region touched upon some aspects but we need large sample study.

- What is current status of water markets in India and how these can be developed further? Whether water markets helps in improving water-use efficiency and equitable distribution?
- Whether the agricultural inputs are being used sustainably? What could be policy options for integrated and sustainable use of different types of input?