

Partnerships for Sustainability in Agriculture Sector - CIPT Initiatives



Context

Majority of the Indian population still relies on agriculture for their livelihoods. Steady investments in research, technology development, irrigation infrastructure, emphasis on modern agricultural practices and innovative low-cost high-impact technologies and provision of agricultural credit and subsidies are the major factors contributing to agricultural growth in India.

The challenges of low productivity, inefficient use of natural resources and changing climate are further aggravating the problem of slow growth in agriculture. The dominance of smallholder agriculture in India, calls for strategies which can ensure inclusive growth along with natural resource sustainability. The strategies for such growth need to be multi-pronged consisting of crop diversification, improved inputs, productivity enhancing technologies and practices, value addition activities across the supply chains, information dissemination and capacity building. There have been many efforts on all these fronts with different levels of success. However, there is need to explore innovatively for further refinement of the focus on all these approaches for more effective outcomes.

CIPT is a research and development organization providing rigorous, research based knowledge as the foundation for various field based initiatives involving the local communities, government, non-government and private partner. It has built partnerships with various organizations in the past to promote water-energy-agriculture and livelihood sustainability in India. The partnerships have been with academia including the State Agricultural Universities, government agencies, private sector and other non-profit entities in the research and development sector.

Partnerships for basic agricultural research and development

Achieving natural resource sustainability and improving rural livelihoods is a complex task. It requires in-depth understanding of the water-energy-agriculture nexus of a given region and a thorough analysis of the livelihood and adoption patterns. To achieve this objective and formulate more effective strategies for ensuring agriculture sustainability in the long-run, CIPT has partnered with State Agricultural Universities, other institutes and government departments. The prominent partners in Punjab are Punjab Agricultural University (PAU) and the Department of Cooperation. In Jharkhand, the partners are Birsa Agricultural University (BAU), State Agricultural Management and Extension Training Institute (SAMETI) and Central University of Jharkhand (CUJ). In Gujarat, the major partners are Uttar Gujarat Vij Company Limited (UGVCL) and Krishi Vigyan Kendras (KVKs). The future efforts are to partner with the State Departments of Agriculture.

The major focus of such partnerships has been to examine the relationship between food production, natural resource and environment in light of the changing climate in different regions of India. The major emphasis is on conserving water and energy resources and improving rural livelihoods. The State Agricultural Universities and KVKs are supporting in conducting an in-depth analysis of such nexus and promoting strategies for sustainability. They are also supporting in providing relevant information to develop decision support systems for the farmers. The Department of Cooperation and SAMETI provide the basic platforms for scale up strategies for better coverage. CUJ is involved in mapping the water resources in Jharkhand to plan drinking water treatment and distribution strategy in the long-run.

Partnerships for developing low-cost technologies and applications

CIPT has built partnerships with North East Centre for Technology Application and Reach (NECTAR) and Technology Outreach Foundation (TOF) to develop and promote low-cost technologies for enhancing resource-use efficiency (especially with respect to water and fertiliser use) and conserve natural resources. The partners have agreed to work mutually on the following areas:

1. Development of low-cost technologies to increase resource use efficiency, conserve natural resource and enhance agricultural productivity.
2. Use remote sensing techniques for mapping natural resource and topography to encourage better resource use planning.
3. Develop low-cost technologies and affordable instruments and tools to improve access of the rural poor including smallholders to useful information for managing crop production.

It is encouraging that this partnership has resulted into the development of low-cost soil moisture sensor and plant nutrient sensor in a short span of time. These digital sensors are easy to use and have significant potential to reduce the water use and nitrogenous fertilizer use in agriculture. Efforts are on-going to develop some other sensors and technologies which can help in better resource planning in agriculture.

Partnerships for developing business viable value-chains

There is a strong need to establish the value-chains in agriculture that can serve the interests of both the farmers as well as the intermediaries and also improve the efficiency of the markets in the medium and long-term. The value chains should integrate the aspects of export potential, domestic markets, opportunities for processing, food safety standards, research and development needs for promoting value addition in agriculture and effective integration of the stakeholders to ensure business viability of value chains which can ensure equitable distribution of benefits to all the stakeholders, especially the farmers.

CIPT has partnered with Field Fresh Foods Private Limited and academia to develop the framework for the development of business viable value chains in agriculture. The partnership will help in gathering inputs on the essentials of food processing, food safety, marketing and other research and development needs for such value chains. It will also help in pilot testing of the business viable models. The partners will attempt to develop market outlook for alternate commodities by exploring the regional, national and global markets and will devise strategies for scaling up of the business viable chains. The success of such partnership may lead to successful efforts for crop diversification in the country.

Partnership for innovative insurance products to promote technology adoption

There exist many technologies such as laser land levelling and tensiometers, which have the potential to bring significant improvement in the water-use efficiency. Despite scientific evidence of significant water savings with the use of such technologies without any adverse impact on crop yields, the rates of adoption are very slow, especially during the initial years of introduction and promotion. The farmers usually look at such technologies with suspicion till they are fully convinced of their usefulness. Relatively less adoption during the initial years coupled with incomplete follow up of the recommendations makes large scale adoption of such technologies a relatively slow process. The smallholders, who have less risk bearing capability, don't prefer to venture into such adoptions or do it quite late and are thus left out of the benefits of such development process.

CIPT in collaboration with Punjab Agricultural University has partnered with Agriculture Insurance Company (AIC) of India to develop innovative insurance products for technology adoption. While AIC will develop the insurance products suited for the adoption of technologies in different parts of the country and will provide support in pilot testing of the products, CIPT will structure the experimental design for testing of the insurance product and will also support in supervision and monitoring of the technology usage and resulting losses, if any.

Unlike the yield or weather insurance, which are more prevalent forms of crop insurance, the insurance for promoting the adoption of technologies must be looked upon differently. While the scientific evidence points to no significant risk in the adoption of such technologies, farmers may perceive some risk based on their own understanding. The insurance product must cover only that marginal risk of loss in productivity rather than covering the entire output in the crop. CIPT (along with PAU, Ludhiana) and AIC are piloting an insurance product named PAUTITIS with 500 paddy growers using the tensiometers for the first time in 2014. The PAUTITIS provides insurance against the yield loss ranging between 75 kg and 250 kg per acre owing to the use of tensiometers in their paddy fields. The insurance is expected to boost the rate of adoption and the extent of water saving in paddy crop due to the use of tensiometers.

Centers for International Projects Trust

K-37, Green Park Main, New Delhi – 110016

T: +91-11-2651 2745

W: www.cipt.in