

31st Conference of Agricultural Economics Research Association (AERA)

Theme of the Conference

Innovations in Agriculture for Sustainable Food System and Farmer's Income

Conference Outline

About the Conference

The 31st Annual Conference of the Agricultural Economics Research Association (AERA), India will be held at the Dr Rajendra Prasad Central Agricultural University, Samastipur, Bihar during 7-9 December 2023. Dr. Prabhu Pingali, Professor of Applied Economics and Director, Tata-Cornell Institute (TCI), Cornell University will be the conference president.

The agriculture sector still contributes substantially to the Indian economy; accounting 17.7% of gross value added and 44% of total employment. It has the potential to provide solutions to multiple issues confronting the country such as rural poverty, malnutrition and undernutrition, and climate change. It plays a crucial role in attaining the sustainable development goals (SDGs), some of which are directly related to agriculture viz. management of natural resources, reduction in greenhouse gas emissions and improvement in the environment quality. Additionally, the growth in agriculture sector is directly associated with the national goal of *Aatma Nirbhar Bharat* (self-reliance India), especially through self-sufficiency in the foodgrain production and reduction in the import of edible oils and pulses. However, the potential outcomes of agriculture may be threatened by increasing extent and severity of land degradation (soil erosion, chemical degradation of soil, groundwater depletion etc.), stagnating farmers' income despite increase in output and looming negative effects of climate change. The latter is manifested in terms of an increasing frequency of extreme events such as droughts, floods, heat waves and cyclones. These environmental challenges may be aggravated due to unsustainable crop production practices, primarily led by the skewed price policy and mis-matched incentives for farmers.

Keeping in view the production and environmental challenges, and India's commitment towards the SDGs, adoption, and wider use of technological innovations in agriculture is the

need of hour. Innovations in agriculture may help achieving a sustained output growth without compromising with the environmental sustainability. The recent example is the implementation of IoT Smart technologies for sustainable agriculture, which is a cutting-edge strategy to assist farmers, extension services, agribusiness, and policymakers in understanding innovative solutions to various challenges in this sector. To this end, a paradigm shifts in the production system is required to meet the multiple objectives: (a) diversified production system to meet the increasing demand of dietary diversity including nutri-cereals, organic foods, fruits, and vegetables; (b) enhance productivity to make farming efficient, competitive, remunerative, and sustainable; and (c) make production system efficient and resilient to manage multiple stresses and risks.

Deviating from the past pattern of growth in agriculture sector that was largely driven by technology and price support for cereals and input subsidies, now the growth prospects are to be essentially driven by innovations, institutions, and incentive-based approaches, guided by the principle of sustainability. For this, innovations, both technological and institutional must be inculcated in the entire value chain of production, from farm to fork, able address various challenges and harness the opportunities in this sector.

In this backdrop, AERA Annual Conference 2023 aims to synthesize the learnings and experiences from various technological and institutional innovations to reorient policy landscapes to make the food production system sustainable and at the same time augment farmers' income. The theme of the Conference is “**Innovations in Agriculture for Sustainable Food System and Farmers' Income.**” Papers are invited for presentation in the conference on the following **four subthemes**:

- 1. Innovations for sustainable food system:** A sustainable food system (SFS) has the ability of ensuing food and nutrition security (balanced and adequate nutrition) for all in a way that is profitable (economic sustainability), equitable (social sustainability) have positive or neutral impact on the natural environment (environmental sustainability). Concept studies on the use and application of technological innovations may include the following.
 - ❖ Resource conservation technologies (RCTs)
 - ❖ Climate smart technologies and conservation agriculture including zero budget (natural) farming

- ❖ Advance techniques like application of satellite imagery, drones, artificial intelligence, and machine learning
- ❖ Agriculture, Nutrition, and health outcomes of bio-fortified varieties, policy interventions in millets
- ❖ Secondary agriculture i.e. post production including processing and value addition
- ❖ Management of food losses and wastage

2. Innovations in Agri-Marketing and Agri-Business: Low farmers' income amidst increasing output has been a challenge for policy makers. With a shift in the focus from 'higher production to higher income', for the farmers, a strengthening of backward and forward linkages with improved practices of value addition of commodities is essential for realization of better prices, and income. Various agri-tech startups have made inroads to make agriculture more knowledge intensive. Farmers, across land size and gender adopt smart phone technology and internet for better price realisation of produce, higher crop productivity and increase in standards of living. The paper writers may cover the following range of topical issues:

- ❖ App based agro-advisories, agri-start-ups, digital agriculture, machine learning, internet of things (IoT), deep learning, and big data analytics .and the role of decision support system
- ❖ Price discovery and price realization through online platforms and E-NAM
- ❖ Newer institutional innovations such as Farmers' Producer Organisations/Companies, price deficiency payment and other schemes for efficiency, inclusiveness, and sustainability
- ❖ Agribusiness and entrepreneurship for efficiency analysis of the supply chain, value chain and blockchain and ways to modernize value chains for agri-inputs

3. Climate Adaptation and Risk Mitigation Strategies for Farmers: Climate change has emerged as a big threat to the sustainable development of agriculture, food/nutrition security and has put at stake livelihood of millions of smallholder farmers. Improving the coping-ability of production system to make it resilient to climatic aberrations is therefore indispensable. This theme invites evidence-based innovative technologies and ideas on the following:

- ❖ Adaptation and mitigation strategies at farm, regional and national scale
- ❖ Role and impact of stress-tolerant crop varieties and integrated farming system

- ❖ Role of natural based solutions like nutri-cereals, pulses, millets and implications of dietary diversification.
- ❖ Quantification as well as payment for ecosystem services and effectiveness of schemes viz. Pani bachao paisa kamao in Punjab; Mera pani meri virast in Haryana; Solar energy/farming in Uttar Pradesh
- ❖ Conservation agriculture, soil and water conservation technologies and residue management
- ❖ Managing air and water pollution and energy through technological interventions and efficient practices
- ❖ Risk and disaster management for a resilient agriculture

4. **Institutional Support to scale up innovations in Transforming Agriculture:** Besides technological advancements, transformation of agriculture in tandem with the principle of sustainability needs policy and institutional support. This sub-theme may include the following:

- ❖ Government initiatives in the mitigation and adaptation strategies and constraints in their financing
- ❖ Effectiveness of Social safety nets (*e.g.*, PM-KISAN),
- ❖ Reorientation in the extension services through up-scaling, out-scaling, and deep-scaling of technologies

Date for submission of papers

Paper-writers are requested to follow ‘Author’s Guidelines’ available at www.aeraindia.com and submit their papers before **July 31, 2023** at **ceditoraerr@gmail.com** clearly indicating that the paper is for the 2023 conference of the AERA.