



## Panel Discussion

### Digital Agriculture and Food Systems Transformation: AI, Evidence and Partnerships for Sustainability, Resilience and Inclusion

*Jointly organized by the International Food Policy Research Institute (IFPRI), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and the CGIAR Science Program on Policy Innovations at the AERA Regional Seminar*

**17 June, 2026 | 14:00 PM - 15:30 PM (IST)**

**North Block Auditorium, University of Agricultural Sciences (GKVK), Bengaluru**

### CONCEPT NOTE

#### 1. Background and Rationale

Agriculture is entering a decisive digital transition. India must raise productivity, strengthen farmer incomes, and manage climate and market risks under increasing pressure on land, water, and natural resources. Digital agriculture offers an important pathway to support this transition by linking data, analytics, artificial intelligence, remote sensing, decision-support systems for value chains stakeholders and last-mile extension with farmer-centric service delivery.

India has placed digital agriculture at the center of its policy agenda through the Digital Agriculture Mission and the emerging Digital Public Infrastructure for agriculture, including AgriStack, farmer registries, crop-sown registries, digital crop surveys, soil information systems, and decision-support platforms. These developments create a timely opportunity to examine how digital systems can move beyond pilots and become inclusive, trusted, evidence-based, and scalable public-good infrastructure for agriculture and food systems.

The proposed joint panel will bring together complementary strengths on evidence on food systems, policy, institutions, markets, inclusion, and the economics of technology adoption as well as field-facing experience in digital agriculture, climate services, crop modelling, AI-enabled advisory systems, and partnerships with governments, research institutions, and last-mile actors across semi-arid and climate-risk-prone geographies. Together, the session can position digital agriculture as both a policy and implementation agenda: evidence-led, climate-smart, inclusive, and ready for scale.

The panel will focus on digital innovations and required institutional, policy, data-governance, and inclusion pathways to translate innovations into actionable benefits for smallholders, women farmers, extension systems, and value-chain actors.

#### 2. Session Framing

**Core positioning:** This session will frame digital agriculture as a shared research-policy-innovation agenda where IFPRI and ICRISAT jointly connect evidence, climate intelligence, responsible AI, institutional partnerships, and inclusive delivery models.

**Format:** A 90-minute curated panel with brief opening remarks, one framing presentation followed by a moderated panel discussion and open floor discussion.



### 3. Objectives

- Assess the current state of India's digital agriculture transition and its implications for food systems transformation, farmer incomes, and climate resilience.
- Highlight innovative and AI-enabled approaches such as digital public infrastructure, remote sensing, crop and climate analytics, advisory decision-support systems, and generative AI-enabled service delivery.
- Discuss how research evidence, economic analysis, field-tested innovations, and private-sector capabilities can be combined to move digital agriculture from pilots to scalable institutional models.
- Examine safeguards for inclusion, particularly for smallholders, women farmers, lagging regions, and digitally excluded communities.
- Identify priority areas for collaborations on digital agriculture, climate-smart advisory systems, impact evidence, policy support, and responsible data governance.

### 4. Key Discussion Themes

- Digital public infrastructure for agriculture: AgriStack, farmer IDs, crop-sown registries, digital crop surveys, soil information, and decision-support platforms.
- AI and data-driven decision support: machine learning, large language models, remote sensing, crop modelling, climate analytics, and advisory intelligence layers.
- From advisory to action: integrating digital advisories with extension systems, FPOs, agri-input networks, state platforms, and last-mile delivery channels.
- Evidence, economics, and impact: measuring adoption, returns to farmers, inclusion outcomes, risks, cost-effectiveness, and institutional readiness for scale.
- Climate resilience and early warning: digital climate services, localized risk analytics, drought and heat-stress preparedness, and anticipatory action for agriculture.
- Private-sector and start-up innovation: responsible AI systems, scalable platforms, interoperability, and partnership models with public research and government systems.
- Inclusion and governance: digital literacy, gender responsiveness, farmer consent, privacy, responsible data use, transparency, and accountability.

### 5. Expected Outcomes

- A clear articulation of how digital agriculture can support sustainable, climate-resilient, and inclusive food systems transformation in India.
- Identification of opportunities for collaboration on evidence generation, policy support, AI-enabled advisory systems, and scalable digital agriculture models.
- Documentation of promising innovations from public systems, research organizations, and private-sector actors, including responsible generative AI applications.
- Actionable recommendations on data governance, inclusion, last-mile delivery, and institutional mechanisms for scaling digital agriculture.
- Strengthened engagement between researchers, policymakers, government partners, start-ups, and development actors for evidence-based digital transformation.