Tropentag, September 10-12, 2025, hybrid conference

"Reconcile land system changes
with planetary health"

Transforming agri-food system through innovations: adapting to climate change and empowering smallholder farmers to sustainable farming

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Abstract

Objective: This session will showcase the pioneering scientific work of the International Institute of Tropical Agriculture (IITA) in climate mitigation and adaptation, emphasising how interdisciplinary research and innovative agricultural strategies are creating and delivering impact in helping smallholder farmers to navigate the challenges of climate change. The spotlight will be on IITA's research innovations that empower smallholder farmers, offering new opportunities through integrated farming practices that foster resilience and sustainability.

This concept note describes a format for discussion how IITA is addressing the theme of "Reconciling Land System Changes with Planetary Health."

Expected Outcomes:

• Enhanced awareness of the role interdisciplinary approaches plays in addressing climate challenges in agriculture. Climate change doesn't affect just one discipline and addressing these challenges will need a coordinated approach at scale.

• Greater understanding of IITA's contributions and approaches in promoting sustainable solutions for smallholder farmers.

• Networking opportunities for international development practitioners to collaborate and share experiences.

• Create a blog summarising key insights and lessons from the session, to be posted on the IITA website and relevant CGIAR Science Programs.

Run of show:

1. Welcome words (10 minutes):

1.1 Simeon Ehui, Regional Director, Africa, CGIAR, and Director General of IITA (John if Simeon is unavailable) (5 min)

1.2 Bernard Vanlauwe, Deputy Director General, Research for Development IITA (5 min)

2. Keynote sessions

2.1. Keynote Introduction (15 minutes):

Speaker: John Choptiany, Climate Adaptation Expert, IITA

Topic: Facing the Climate Challenge: The Role of Interdisciplinary Research in Agricultural Innovation"

Overview: John Choptiany will provide an overview of the pressing challenges posed by climate change on agriculture and emphasise the necessity of collaborative and interdisciplinary Research for Development (R4D) to develop resilient agricultural systems. He

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will set the stage by outlining IITA's overarching programmes and achievements in promoting sustainable agriculture, emphasising key topics further discussed in detail (thematic presentations). He will highlight the importance of ensuring that innovations are effectively communicated to farmers and country-level stakeholders to drive adoption and scale impact. Tackling climate challenges must be done together using an interdisciplinary approach that helps farmers find a balance between land use activities and maintaining the health of their farming ecosystems.

Focus: Traditional practices are no longer effective under climate change. Smallholders often lack up-to-date information on the latest best practices, improved varieties, and climate advisory and information services. Innovative practices in climate-resilient agriculture, including adaptive cropping systems and water management techniques, need to be tailored to specific contexts and made actionable through the support of digital advisory services. The presentation will highlight case studies and successful implementations in Africa, showing why the interdisciplinary approach is important to address the problems.

Focus of slides: The next presentations highlight what IITA is doing in terms of Climate Agriculture in research and delivery.

2.2. Keynote: (5 min)

Speaker: BMZ-GIZ present the political perspective of climate change and agriculture

3. Thematic sessions

3.1. Soil Health and Agronomy (12 + 3 min)

Speaker: Frank Rasche, Soil Health Scaling Expert, IITA

Focus: This presentation will highlight the importance of soil health in addressing climate change impacts at smallholder farmer scale. It will delve into inclusive soil health scaling concepts, including sustainable agronomic practices and soil conservation methods that enhance productivity without further compromising the environment. In addition, this presentation will discuss a flexible soil health assessment framework to monitor the success and impact of implemented soil health management interventions.

3.2. Integrated Pest Management in a changing climate (IPM) (12 + 3 min)

Speaker: Lava Kumar, Plant Health Program Leader, IITA

Focus: This presentation provides an overview of integrated pest management (IPM) strategies that increase reliance on eco-friendly innovations and reduce dependence on chemical pesticides. In addition to examples of gender-inclusive IPM implementation across different crop systems, the presentation will highlight the unpredictability of pest dynamics due to changing climate and how data-driven approaches and predictive tools can support early warning and informed decision-making for better preparedness and adaptive pest management.

3.3. The Science of Scaling Innovations (12 + 3 min)

Speaker: Theresa Ampadu-Boakye, Monitoring and Impact Specialist, IITA

Focus: This presentation will explore the science and methodologies behind scaling agricultural innovations, focusing on how interdisciplinary research and delivery drive the adoption of sustainable practices by smallholder farmers. It will cover key dimensions of the Science of Scaling, such as innovation scalability, enabling environments, scaling pathways, partnerships, and monitoring, drawing on IITA's experiences and will draw parallels with the earlier presentations. The presentation will highlight how we're moving innovations beyond pilots to achieve impact at scale, working with governments, and strengthening national systems. It will also showcase how science-driven scaling has built agricultural resilience in diverse African contexts, helping farmers find that balance of land use with ecosystem health.

4. Interactive Q&A Session with the audience (15 min)

Moderator: John Choptiany

Purpose: Provide participants with the opportunity to engage with speakers, pose questions, and discuss challenges and opportunities in interdisciplinary agricultural research and implementation.

Question topics to prompt for the Q&A if needed:

- How do you help farmers balance protecting the planet when there is an urgent need for livelihood improvements and feeding their families – short term need versus long term sustainability?
- What other solutions or approaches need to be advanced to make this a reality?
- Agriculture is hyper local – how to create impact at scale while addressing these nuances while protecting the planet?
- If we have a political representative, we can also push the discussion toward what politicians expect from R4D and what they can do to push R4D forward. Where are the synergies and areas for collaboration?
- Explore ways for unlocking new funding opportunities for scaling science, through partnerships and demonstrating shared value.

Keywords: Keywords