



# **RUFORUM 21<sup>ST</sup> ANNUAL GENERAL MEETING 2025**

## **CONCEPT NOTE Forum II**

### **Energy transitions for productive and sustainable agri-food systems**





## THEME

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**Positioning Africa's Universities and the Higher Education Sector to effectively impact development processes on the continent**

**Hosts:**

The Government of Botswana and  
RUFORUM member Universities in Botswana led by Botswana University of  
Agriculture and Natural Resources

**Venue:**

Tsodilo Suite

**Date:** 3<sup>rd</sup> December 2025

**Time:** 08.30-14.30 Central African Time (CAT)

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## Background

According to the Sixth United Nations Intergovernmental Panel on Climate Change (IPCC) report, anthropogenic activities such as unsustainable energy use, land use and land-use change, lifestyles, and consumption and production patterns have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850-1900 in 2011-2020. While agrifood system expansion and change are crucial to achieving the UN Sustainable Development Goals, they are inevitably associated with pushing against the earth's planetary boundaries. Indeed, the October 2025 Lancet Report (Lancet 2025; 406: 1625-700) links contemporary food system shifts to global boundary transgression, particularly at the climate and ocean acidification boundaries. Land clearing and deforestation are driving biodiversity and GHG release; organic fertilisers are enhancing nitrogen and phosphorus boundary transgression, affecting aquatic ecosystems; energy for production and animal protein sources of food are also driving climate boundary transgression. Clearly, actions must be taken to establish and promote resilient and climate-safe agrifood systems from production to consumption. Circular production systems based on bioeconomy principles (World Bank, 2021) can improve nutrient efficiency while reducing leachates to water bodies. Clean energy for agrifood system transformation based on solar, wind, and bioenergy will help agriculture decouple from fossil fuel dependency while also supporting off-grid rural communities (IRENA & FAO, 2021).

This session of the conference aims to highlight innovative, scalable, and context-specific solutions that enhance agrifood systems transformation while minimizing transgression of the earth planetary boundaries. It promotes interdisciplinary approaches and policy-research linkages that facilitate the design and implementation of resilient, circular and energy-smart agricultural systems across Africa. Advances in science, practice and policy will address the underlisted areas:

1. **Renewable and clean energy:** Innovations in solar-powered water pumps, wind and bioenergy-driven systems, and decentralized energy grids that support climate-smart intensification.
2. **Intelligent systems for agriculture:** Robotics, sensors, and digitally-powered systems for technology efficiency.
3. **Energy-smart value chains:** Enhancing the energy efficiency of processing, storage, and transportation through clean energy technologies and management systems.

## Objectives

This forum will serve as a platform to discuss the critical topic of achieving reducing the contribution of agriculture to climate change via green initiatives that reduce fossil fuel dependency, leverage digital transitions and precision systems. This session will specifically examine the connection between green transitions and resilient agricultural production systems. This session will facilitate connections among researchers, professionals, and practitioners to foster new collaborations. The forum will also equip attendees with insights into emerging trends, methodologies, and best practices related to agri-energy solutions. It will also facilitate thorough discussions on policy implications, societal impacts, and ethical considerations arising from research, while also examining strategies for translating scientific findings into actionable policies for developmental impact.

## Approach

The Forum will have a key note paper that will subsequently be discussed by selected research leaders. A facilitated panel discussion will be help to engage the wider audience and draw lessons from them, generating the forum message.

## Expected outcomes

1. Disseminate cutting-edge insights and best practices in agri-energy solutions.
2. Foster connections for collaborations on research projects and interdisciplinary initiatives.
3. Motivate participants to explore new studies and

contribute to knowledge advancement.

4. Inform regulations and guide actions based on research findings for community and environmental benefit.
5. Facilitate interactions between researchers and industry professionals to drive technology transfer and improve agri-energy practices.
6. Provide a platform for dialogues on policy implications, societal impacts, and ethical considerations related to research findings.

## Participants

Participants will include researchers, scientists, academics, development partners, policy makers and Government Officials, industry representatives, Non-Profit Organizations, professionals, and graduate students.

## Organizers

The event is organized by RUFORUM, with support from the Government of Botswana and RUFORUM member universities in Botswana.

Venue: Tsodilo Suite  
Registration Link: <https://ruforum-org.zoom.us/j/89809800533?pwd=YsEhQ6oVI30esakaKn6L3i0nzckCrg.1>  
Session Chair: Professor Cheo Emmanuel Suh  
Rapporteurs: Professor Issa Kabenge, Dr Amuri Nyambila, Professor Justin H. Chepete,

Time	Welcome Remarks from the Chair	
09.50-10:10	<b>Key note paper:</b> Energy transitions are essential for facilitating green transitions, enhancing sustainable agricultural practices, and improving productivity in the sector. Insights from different regions.	Prof. Chandra Madramooto, McGill University, Canada
	Lead Discussants	
10:10-10:20	<b>Renewable and clean energy:</b> Innovations in solar-powered water pumps, wind and bioenergy-driven systems, and decentralized energy grids that support climate-smart intensification.	Prof. Katcho Karume, Université Évangélique en Afrique, Democratic Republic of Congo
10:20-10:30	<b>Intelligent systems for agriculture:</b> Robotics, sensors, and digitally-powered systems for technology efficiency.	Ismaila Dabo, Carnegie Mellon University- Africa, Rwanda
10:30-10:40	<b>Energy-smart value chains:</b> Enhancing the energy efficiency of processing, storage, and transportation through clean energy technologies and management systems.	Professor Hany El-Shemy, Former Dean Faculty of Agriculture, Cairo University
10.40-11:00	Plenary discussions	