



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

## CONCEPT NOTE FORUM III

### ARTIFICIAL INTELLIGENCE, DATA SCIENCE, AND EMERGING TECHNOLOGIES



## 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:** 08.30-12.30 SAT

**Contact:** Professor Majaliwa Mwanjalolo ([m.majaliwa@ruforum.org](mailto:m.majaliwa@ruforum.org))

## Background

Artificial Intelligence (AI) is a pivotal technology of the fourth industrial revolution, integrating digital technologies such as AI, the Internet of Things (IoT), and robotics to enhance the efficiency and effectiveness of various processes across various sectors of the economy. Indeed digital technologies are unlocking opportunities globally transforming agriculture globally, and Africa is no exception. These innovations are enabling precision farming, predictive analytics, and real-time resource management, offering solutions to long-standing challenges in the Continent's agri-food systems. From drone-based crop monitoring and satellite imagery to AI-driven decision-support systems, digital tools are helping optimize inputs, reduce post-harvest losses, and improve climate resilience and productivity (World Bank, 2023; FAO & ITU, 2024). For agriculture, AI applications such as machine learning and deep learning are transforming the crop improvement, forecasting, pest and disease detection, and soil health diagnostics. These technology opportunities could significantly enhance Africa science, technology and innovation to directly impact agriculture.

Deployment of AI in agriculture must never the less be undergirded by good governance/policy as well as ethics, and equity to address data sovereignty, algorithmic bias, and digital literacy in African agriculture (OECD, 2022). At the same time, regional policy frameworks and infrastructure development are needed to guide responsible AI deployment, foster cross-country collaboration, and ensure interoperability of digital tools. This forum aims discuss the opportunities availed by AI and related innovations for unlocking opportunity for knowledge, financial and technology inclusion. It will explore opportunities for capacity building as well as strategic partnerships for education, skilling and research for development. Advances in AI, data science and science, practice and policy will address the underlisted areas:

1. **Artificial intelligence in agriculture:** An opportunity for improving efficiency and effectiveness in agricultural processes including decision support in farming, ethical and inclusive concerns.
2. **Agri-energy solutions and innovations:** Case studies and technologies that showcase novel energy interventions across various agri-food contexts, including digital and IoT applications. Prof Dorothy Okello
3. **Data science, ethics, and intellectual Property:** Capacity, infrastructure, and policies necessary for a safe, just, and inclusive AI environment. Dr Opiyo-Patira
4. **Digital infrastructure and innovation policy:** Frameworks and investments needed to support equitable access to data, internet connectivity, and digital agriculture platforms across rural areas. (Dr Jalal Charaf-UM6P)

## OBJECTIVES

This forum will serve as a platform to discuss the critical topic of leveraging AI for education as well as agricultural processed and development in general. It will also address advances in digitization such as precision farming, predictive analytics, drone-based monitoring, and AI-driven decision support systems. It meeting will also address ethical and governance of AI in education, agricultural development and research in general. It will enable opportunities for dialogue on policy and infrastructure development and requisite for AI deployment, cross-country collaboration, and the interoperability of digital tools in agriculture. The meeting will also address the issues of data science a critical ingredient for AI and data driven decision making.

## 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

- Increased awareness and understanding of the latest AI applications and digital technologies in agriculture among stakeholders.
- Compilation of successful case studies showcasing effective AI implementations in agricultural practices, which can serve as models for replication in various contexts across Africa.
- Development of actionable policy recommendations aimed at promoting the responsible use of AI in agriculture, ensuring ethical considerations, data privacy, and equitable access for marginalized communities.
- Formation of collaborative networks and partnerships among stakeholders, including government agencies, NGOs, private sector organizations, and academic institutions, to foster knowledge sharing and joint initiatives.

## 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.

**TUESDAY 3rd December, 2025**

**Venue:** Tsodilo Suite

**Registration Link:** <https://ruforum-org.zoom.us/meeting/register/L7iAe7ZqQxyH7mwxK9H0vA>

**Session Chair:** Dr Drake Mirembé

**Rapporteurs:** Dr. Precious Gawanani, Ms. Xatsi Yolisa, Professor Xavier Poshiwa

Time	Welcome Remarks from the Chair	
11:30-11:50	Key note paper: Artificial Intelligence: An opportunity for improving efficiency and effectiveness in agri-food systems and education.	Prof. Ioannis N. Athanasiadis, Wageningen University and Research, Netherlands
	Lead Discussants	
11:50-12:00	Digital infrastructure and innovation policy: Frameworks and investments required to promote fair access to data and usage for research education and development practice.	Dr. Francis Otto, Mountains of the Moon, University, Uganda
12:00-12:10	Data science, ethics, and intellectual Property in agricultural and life science: The imperatives for building robust systems for an inclusive AI environment.	Dr Stephen Opiyo, Patira Data Science, USA
12:10-12:20	AI for agriculture decision support: Applications of AI in of agriculture for predictive modelling, precision planting, pest and disease detection, and nutrient optimization using AI tools among others.	Dr William Mutero Carnegie Mellon Africa, Rwanda
12:20-12:30	Sustainable energy technologies for digital transformation: Essential requirements for energy efficiency in the deployment of AI and new technologies.	Dr. Donna Namuju, Makerere University, Uganda
12:30-13:00	Plenary discussions	
13:00-14:00	Lunch Break	