RUFORUM 18th ANNUAL GENERAL MEETING

SCIENTIFIC SESSIONS: JOINT CONVENING WITH THE AFRICAN CROP SCIENCE SOCIETY

Dates: 12th – 14th December 2022

CONCEPT NOTE

Background

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) is a network of 147 universities in 38 African countries. It was established in 2004 to (i) foster integration of African universities into the national agricultural innovation systems (NAIS); (ii) provide a platform for training quality graduates to support development processes in Africa; (iii) rationalise resource use and enhance economies of scale and scope; and (iv) provide a platform for networking, resource mobilisation and advocacy for agricultural higher education in Africa. RUFORUM envisions '*vibrant, transformative universities to catalyse sustainable, inclusive agricultural development to feed and create prosperity for Africa'*. The Eight Africa Higher Education Week and RUFORUM Annual General Meeting Conference will be held 12th-16th December 2022 in Harare, Zimbabwe, under the theme "**Strengthening Africa's Agri-food Systems in the Post COVID-19 Era – Opportunities and Challenges".**

RUFORUM, in partnership with the African Crop Science Society and the Zimbabwean RUFORUM member universities, will convene a three-day scientific conference where scientists, academicians and students will present their work orally focusing on the application of biological, ecological and social knowledge for the development of resilient climate-smart agri-food systems including sustainable livestock production and environmental and natural resources management for food and nutritional security and economic and social stability. Digital innovations, data management, intellectual property rights, economics, policy analysis, and education and research institutions-community engagement experiences will be highlighted.

Objective of the Scientific Conference

The Scientific Conference aims to bring together leading academicians, scientists, researchers and research scholars especially from the continent to exchange and share their experiences and research results on all aspects of Agriculture and agricultural related sciences, and emerging development concerns with a focus on climate-smart innovations. It also provides an interdisciplinary and multi-stakeholder platform for policy makers, researchers, practitioners, educators and students to present and discuss the most recent scientific knowledge, technological innovations, emerging trends, and concerns as well as practical challenges encountered and solutions adopted to strengthening agri-food systems. As in previous RUFORUM Conferences, special provision will be made for graduate students to share their research findings and profile their research. Themes for the scientific sessions will cover eight thematic areas (see Thematic Areas in Annex).

Date and Venue

The Scientific Conference will be held 12th-14th December 2022 at the Harare International Conference Centre, Zimbabwe. It is foreseen that this conference will be a blended session (face to face and virtually-registration link:

1. **Parallel Session 1**: https://bit.ly/3X2WK8E
2. **Parallel Session 2**: https://bit.ly/3URmiUz

CO-ORGANISERS:

3. **Parallel Session 3**: https://bit.ly/3tpepdk
4. **Parallel Session 4:** https://bit.ly/3UBG06T

The Conference will feature live-streamed webinars and will include both invited speakers and contributed speakers. The webinars will contain a Q&A session for live online audiences. In addition, there will be Posters and Exhibition Sessions.

Participants

The Scientific Conference is targeting, graduate students, academics, researchers, policy makers, and development practitioners.

Organisation of sessions and Expected Outcome

The conference is conceived as a dynamic multi-stakeholder and multidisciplinary (in the agricultural field) forum aimed at understanding and harnessing the socio-economic potential of innovation, its key drivers and processes, and impact pathways through exchange of knowledge, information and practices, review of enabling policies and platforms, and development of potential partnerships and action plans.

The expected outcome

- Strengthened networking among members of the scientific community working in agriculture and related fields;
- Focus given to innovation in agri-food and nutrition systems, climate-smart agriculture and climate change adaptation and mitigation
- Improved presentation and communication skills for especially the graduate students
- Increased visibility of research and development outputs from Africa
- Improved methods for increasing the uptake of research results by other stakeholders (dissemination strategies)

The Conference will have one official opening session, then break into different sessions where participants will split into small focused groups to discuss advances in science in the selected areas and make recommendations for follow up actions. The outcome of the breakout sessions will be shared during the AGM Closing Session and also online after the conference.

Organisers and Contacts

This scientific conference is organised by RUFORUM Secretariat in collaboration with African Crop Science Society and Zimbabwean Universities.

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CO-ORGANISERS:

Annex: Scientific Conference Thematic areas

1. **Enhancing agricultural productivity and earnings for farming communities**

   Agriculture has remained the pillar of most sub-Saharan African economies, employing more than 60% of the African population and provides material and economic resources for its people. In African countries, the sector contributes 30-40% to gross development product and export. Despite its vital importance for reducing rural poverty and increasing social equality, the agri-food system sector in Africa countries is facing considerable challenges, among which is poor productivity, low quality inputs, adverse drought and climate effects, and rapid population growth. The projections by 2050 suggest that more than 50% of the increase in the world population will come from Africa. In this context, innovative agricultural research outputs will be important to contribute to meet the increasing needs in terms of food supply and nutrition and economic security. In particular, we will welcome submissions in the categories of reviews, research and opinions that deal with (and not limited to) conventional plant breeding and genetic engineering, agronomic practices, environment, sociology, integrated pests and disease management; post-harvest management, value addition and marketing; invasive pests and crop diseases in Africa; biotechnology, biosafety, bioethics and bio-risk management; precision agriculture and robotics.

2. **Strengthening / Improving the performance of livestock production systems**

   In areas of intense drought and where lands ~~are~~ arid, livelihoods of smallholder~~s~~ farmers are sustained through livestock keeping is extremely challenging. However, the dynamics of dryland areas in the face of unpredictable climate effects, the inadequacy and inefficiency of animal production systems, low quality inputs, animal pests and parasites, transboundary and zoonotic diseases are considerable challenges infringing on productivity of livestock production systems in Sub Saharan Africa. This thematic area calls for papers that explore (i) animal genetic resources especially indigenous genetic resources; (ii) intensive and extensive animal production systems; (iii) feed and feed resources; (iv) energy coupling of livestock resources; and (v) animal pests, parasites, transboundary and zoonotic diseases in Africa.

3. **Digital innovations in agriculture and education**

   Digital solutions and data management can play a critical role in the socio-economic transformation and inclusive growth of many developing countries, by increasing access to knowledge and speeding up skills development, problem~~s~~ solving, generation and evaluation of evidence and decision making. Digital innovations have also been shown to have a central role in the 4th industrial revolution and potential for the modernisation of smallholder agriculture. Further, the recent COVID-19 pandemic has exposed the vulnerability of African agriculture and food system, universities and governments to uncertainty in the future. While some universities have partially migrated to online teaching, many others are still struggling with online education and student access to learning. This thematic area seeks articles, opinion papers and review papers on (i) digitalisation of higher education systems, including blended learning for improving access to education; (ii) digitalisation of agricultural enterprises including small farms and agro-based SMEs and extension systems; (iii) foresight, data and knowledge management; (v) 4IR and modernising smallholder agriculture; (vi) ethics and decision support system to guide future planning, as well as business models for economic growth; and (vii) agricultural policy analysis.

4. **Environmental and natural resources management**

   Environmental, land, genetic and water resources have a central place in most political debates, as they sustain most services that contribute to enhance human life. However, industrialisation and the need to feed the increasing number of people on earth have resulted in unsustainable and wasteful use of the resources. Sub-Saharan African countries are not immune to the negative impacts of misuse of natural resources, the greenhouse gas emission and deforestation that result from overexploitation of forest resources, agricultural intensification and wasteful relocation of lands. In this thematic area, we seek for research, review and opinions papers that cover issues affecting Africa's (i) agro-biodiversity; (ii) resilience to climate change and extreme natural hazards; (iii) agricultural greenhouses gases and Climate Change; (iv) innovations and advances in soil fertility and soil health systems; and (v) integrated soil and water resource management practices. Further, interest is sought from articles that seek to address i) how natural disasters, hazards, crises, such as COVID-19 Pandemic and climate change affect the resilience of families, communities, institutions, or even countries; and ii) how to integrate foresight and mitigation into the recovery process to build back better or to achieve sustainable development.

5. **Climate Smart Innovations**

   The Climate change challenge requires innovative home-grown context specific solutions; and should not only be limited to the development and deployment of new and improved crops and livestock but also embrace integrated farming methods and water and energy-use efficient technologies. This thematic area calls for papers that explores (i) agro-ecology principles for enhancing soil fertility; and (ii) green-energy (renewables including sun and hydropower) and other energy transitions for improving production efficiency, value addition and reducing losses along various stages in food chains.

6. **Enhancing Post-Harvest Management, Value-Addition and Nutrition**

   Africa's attainment of the SDGs; in particular, zero huger and good health and well-being continue to be stymied by high postharvest losses, low levels of value addition and high levels of mal-nutrition among other factors. Reducing postharvest losses, improving storage and processing of all commodities and increasing access to diverse nutrient dense locally produced foods at household and community level remain a priority for the continent. This thematic area calls for papers that explore (i) traditional and modern ways of extending the shelf-life of locally produced foods; (ii) role of indigenous crops/livestock/fish and other aquatic resources in enhancing nutrient content, ensuring dietary diversity and reducing the burden of all forms of malnutrition, particularly non-communicable diseases and deficiencies in iron, folate, and vitamins A and B12; (iii) consumer habits and consumption patterns, future consumption trends for tackling under-nutrition and the growing obesity and NCD crisis; and (iv) role of traditional African foods as part of healthy diversified diets.

7. **Upscaling impact of University and community connectedness**

   Universities have a critical role to play in community transformation through co-innovation, integrating local knowledge and technology and knowledge transfer. Although some RUFORUM universities have made progress, in working closely with communities through long-term engagement of their faculty and students with farmers, this approach needs to be mainstreamed in Sub-Saharan Africa. For instance, RUFORUM in partnership with the MasterCard Foundation, and two universities in East Africa, notably Gulu University and Egerton University, are implementing a new model of agricultural education that links universities to rural

communities, with emphasis on small farming communities. For large scale impact on the African continent, it is necessary to analyse and document lessons learned and share experiences on the different engagement mechanisms. This thematic area seeks to focus on sharing information and facilitate knowledge exchange on the impact of University and community connectedness across the continent. In particular, we will welcome submissions that focuses on (i) trade-offs in agricultural expansion; (ii) community action research; (iii) field attachments mechanisms; and (iv) university-community engagement (e.g. traditional and innovative extension approaches, student extension delivery services or placement/internship)

8. **Entrepreneurship and youth employability**

Africa has the world's youngest population with about 60% under 35 years old, of which 420 million are aged between 15 and 35. Between 2000 and 2008, Africa's working age population (15-64 years) grew from 443 million to 550 million, indicating an increase of 25% and an annual growth of 2.7% per year (World Bank, 2011). By 2040, the continent's labour force is expected to reach 1 billion making it the largest in the world, surpassing China and India. Africa's expanding youth population is often seen as a challenge for youth development and employment but potentially, represents a promising driving force for Africa's growth and development. However, this is only possible if youth in Africa can efficiently take advantage of existing opportunities, and become the engine of new agriculture and agribusiness enterprises driving the transformation on the continent. Innovation, entrepreneurship and agribusiness are promising opportunity outlets, but most African countries are still facing many challenges related to institutional, human and youth development, limiting the opportunities to harness the Africa youth bulge. In this thematic area, we welcome submissions that cover (i) youth entrepreneurship and employability challenges, opportunities, good practice; (ii) agribusiness and product development; (iii) business financing, incubation and enterprise development; (iv) commercialisation and market analysis; as well as (v) enabling policies for youth entrepreneurship and employability.