

Call for Extended Abstracts for RUFORUM 15th Annual General Meeting (AGM), 2-6 December 2019 in Cape Coast, Ghana

Thematic areas for the scientific sessions

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) is a network of 114 Universities in 38 African Countries. RUFORUM will be holding its 15th Annual General Meeting (AGM) from 2nd to 6th December 2019 at University of Cape Coast, Ghana. As part of the AGM series, RUFORUM invites researchers, opinion leaders, and development experts to submit review papers, technical/research articles and opinion papers under the listed thematic areas. High quality papers will be published in either RUFORUM Working Document Series <https://repository.ruforum.org/> or the African Journal of Rural Development <http://www.afjrd.org/jos/index.php/afjrd>

1. Livestock and Livestock Production Systems

The global livestock sector is rapidly evolving in part in response to globalization and growing demand for animal-source foods, driven by population growth and increasing wealth in much of the developing world. Livestock systems in developing countries are extremely dynamic with dynamic drivers of change. Population and dramatic urbanization patterns taking place on a global scale and more importantly in the global South are shifting people's food preferences towards greater convenience and higher standards of safety and more meat based diets. This is putting increased pressure on livestock production systems to meet the increased demand. Lately, there is a strong appreciation that the livestock sector needs to operate in a carbon-constrained economy, resulting in increasing competition for land and water resources, and growing pressure for the sector to be managed cleanly, safely and sustainably. This is particularly important because livestock production systems are now known as one of the major causes of human-induced global N and P cycles. Considerable differences though exist in how livestock is produced on a global scale. But a sound appreciation of the differences in the production systems-extensive-indigenous versus intensive, animal genetic resources as the primary biological capital for livestock development, environmental coupling of livestock production, feed and feed resources among others is critical if advances to helping resource poor livestock keepers take advantage of the rising demand for animal source foods and provide adequate protein provisioning in the global south. This thematic area calls for papers that explore the highlighted issues in review papers, research papers and/or opinion articles. Papers related to indigenous chicken production are especially encouraged. This side event will be organised within the broad framework of African Union Research on Indigenous Chicken production led by University of Eduardo Mondlane and its partners

2. Soil Fertility and Soil Health Systems in Africa

Land remains one of the most important resource base for many people in Africa owing to the agrarian based economies. Further, the continent has an estimated 60% of the global arable land. However, 65% of the arable land, 30% of the grazing land and 20% of the forests in the continent is degraded with more than 80% of soils in the continent having chemical or physical limitations. In spite of this, the continent has potential to position itself as a champion in terms of increasing food production and security, achieving land restoration, and increasing agricultural resilience to climate change. As the continent positions itself in the global competition as a frontier for global food production healthy soils are the foundation for realising high productivity and thus is foundation for the global and regional food system. Sustainable soil (and water) management has been greatly recommended as the pathway for realising healthy soils and achieving agricultural growth, ensuring food security and adapting to climate change. The continent continues to grapple with a number of constraints that are limiting the achievement of soil health; capacity, perceptions, poor logistics arrangements, high fertilizer costs, financing and weak linkages between researchers with farmers, extensionists and a simple lack of soil testing facilities in many parts of the continent. This thematic area calls for scientific, opinion and review articles that explore innovations and advances in soil fertility and soil health systems, integrated soil and water resource management practices and smart and long-term solutions that increase soil productivity while safeguarding ecosystem services, and preventing pollution (including water resources) and degradation.

3. Natural Hazards, Disasters and Environmental Crises

The earth has entered a period of hydrological, climatological, and biological change that differs from previous episodes of global change in the extent to which it is human in origin. Accordingly, hazards, disasters, crisis and emergencies are key issues threatening sustainable development and sustainability in the present day. Disasters impact individuals, families, institutions, communities, and societies, not only physically, but also socially. They may cause infrastructure damage, and economic and human life loss. Thus, the wish and processes of sustainable development are always disrupted by various kinds of disasters. To explain or predict the course of the present global environmental changes, one must therefore understand the human sources, consequences, and responses, some of which can alter the course of global change. To understand global environmental change, it is necessary to focus on the interactions of environmental systems, including the atmosphere, the biosphere, the geosphere, and the hydrosphere, and human systems, including economic, political, cultural, and sociotechnical systems. In this regard, the interactions between and within systems is critical and so is the link between recovery after disasters and sustainable development. In order to revitalize disaster-impacted families and communities, mitigation and resilience should be integrated into the recovery process to reduce the vulnerability of communities and the rates of global environmental change. This thematic area seeks articles that are examining these intricate interfaces with hazards, disasters, emergencies and the global environmental change. In particular, interest is sought from articles that seek to

examine; i) how disasters, hazards, crisis, and emergencies affect the continuity and sustainability of families, communities, institutions, or even countries; and ii) how to integrate mitigation or resilience into the recovery process to build back better or to achieve sustainable development context and place.

4. Biosafety, Biosecurity and Biorisk Management

Biosafety has paralleled the development of the science of microbiology and its extension into new and related areas of tissue culture, recombinant DNA, animal studies, molecular biology, synthetic biology and biotechnology. Biosafety aims at protecting public health and environment from accidental exposure to biological agents. This is because as microbiologists gained significant advances to isolate, manipulate, and propagate pathogenic microorganisms, the development of containment principles, facility designs and practices and procedures that help prevent occupational infections in the workplace and/or the release of such organisms into the environment became a necessity. On the other hand, biosecurity concerns with the prevention of misuse through loss, theft, diversion or intentional release of pathogens, toxins and any other biological materials. In the global South, the rapid appreciation of biotechnology as one of the most critical approaches to closing the production and productivity gaps has generated a lot of debate with several for and against in equal measure. This thematic area seeks to provide opportunity to researchers in Africa to submit articles that examine issues relating to molecular biological positions to those covering biochemical, chemical or bioprocess engineering aspects as well as those addressing issues such as nucleic acids, molecular biology physiology, biochemistry, biochemical engineering, bioprocess engineering, industrial processes, and agro and food biotechnology, genomics and bioinformatics.

5. Agrifood Systems

Globalisation of agrifood systems is a mega-trend with potentially profound nutritional implications. Dynamics in national, regional to global trade and technological change in agriculture have substantially improved food security in recent decades, although intensified production systems have also contributed to environmental problems in some regions. New agricultural technologies and policies need to place more emphasis on promoting dietary diversity and reducing environmental externalities. Globalising agrifood systems also involve changing supply-chain structures, with a rapid rise of modern retailing, new food safety and food quality standards, and higher levels of vertical integration. Available evidence indicates that emerging high-value supply chains can contribute to income growth in the small farm sector and improved access to food for rural and urban populations. However, there is also evidence that the retail revolution in developing countries, with its growing role of supermarkets and processed foods, can contribute to overweight and obesity among consumers. The multi-faceted linkages between changing agrifood systems and nutrition are a new field of interdisciplinary research, combining agricultural, nutritional,

economics and social sciences perspectives. Further, owing to the complexity of food systems, it is often had to solve one problem without making another one worse. A policy that lowers food prices and makes staples more affordable, for example, could depress farmers' incomes and cause hardship for smallholder farms. These dimensions in agrifood systems calls for research with interdisciplinary perspectives. Accordingly, this thematic area invites research articles, opinion and review papers that examine agronomy, environment, economics, sociology and health and nutrition aspects of the agri-food systems. Articles particularly with interdisciplinary dimensions will be prioritised for publication in the African Journal of Rural Development.

6. Digital Innovations, Economics and Policy Analysis

Global connectivity has dramatically increased over the last decade arising from the evolution of the 'digital age' that is now giving significant access to information at greater and greater volumes as well as greater access to significant volumes of data. Some recent estimates suggest that there will a 4,300% increase in annual data generation by 2020, thus indicating that data production will be 44 times greater in 2020 than it was in 2009. This unprecedented growth in the digital content and tools is already changing how we create, consume and distribute knowledge - data science. However, there remains a digital divide on a global scale, which calls for increased digital innovations especially in the area of data science. Projections show that over the next 15 years, the developing countries will experience sweeping changes in how States and societies engage with digital data. These changes hold the potential to improve people's lives by making information more available through data science and digital innovations, increasing avenues for political and economic engagement, and making government more transparent and responsive. New digital technologies that have emerged have created the possibility for data science and need for more innovations to support effective information use for development. However, coping with data has become increasingly challenging with exponential growth in data generation. These new digital innovations therefore bring many opportunities for empirical research, data analysis and decision support, making it clear that the data science is thus part and partial of the development required in Africa. On the other hand, in order to have a better appreciation of data science, there is need to examine how new digital technologies can be effectively used to explore data science and they must be taken within the context of our society. Specifically, economic and policy environment play a great role in determining which innovations strive to cause the development we desire for Africa. This sub-theme therefore looks at various topical issues within economic and policy environments for development in Africa.

Interested persons are invited to submit their papers not later than **20 October 2019** through online submission to <http://www.afjrd.org/jos/index.php/afjrd> under SECTION: "**Extended abstracts RUFORUM**" and Sample papers can be accessed at <https://repository.ruforum.org/>