

## Transformation and Relevance of Higher Education in Africa

### ABOUT RUFORUM

The Regional Universities Forum For Capacity Building in Agriculture (RUFORUM), is a consortium of 170 African universities operating in 40 countries of the continent. RUFORUM is coordinated by a Secretariat hosted by the Government of Uganda, at Makerere University.

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### STORIES FROM OUR ALUMNI

Personal stories from young women and men who are emerging as agents of hope and change in their communities.

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### Upcoming Event

RUFORUM Triennial Conference  
12-16 AUGUST 2024  
Windhoek, Namibia





## Message from the Executive Secretary of RUFORUM

Prof. Patrick Okori

Volume 4 of our newsletter, is the first edition in 2024, and continues to highlight the work that African universities and their partners are doing. RUFORUM's work is underpinned by African Governments who through their support to the RUFORUM Secretariat and member universities enables this network to deliver on the noble mission of building capacity for agriculture and related sectors of the economy. Indeed, the Government of Uganda has signed the RUFORUM Charter in support of Higher Education across Africa.

Universities must be equal partners in development processes, the recent (2024) Davos World Economic Forum, has highlighted the role of technologies such as Generative Artificial Intelligence (GenAI) on world economic growth and wealth creation. The imperative for advanced economies was positive,

GenAI startups for example investing up to US\$14.1 billion in quarter two 2023 alone, further growth and investments projected in the coming years. For developing economies, this disruptive technology is beginning to influence how education, innovation and business takes place but it must be done in a manner that contributes positively to jobs and wealth creation. Accordingly, in this issue of the newsletter, ethical concerns of artificial intelligence in E-learning an increasingly important approach for enhancing inclusion in education is discussed. The issue also further discusses the pivotal questions of how other technologies could be used to enhance innovation and create jobs. Experiences from Kenya show the necessity of integrating universities into economic value chains as a source of innovation and knowledge. The National Forum of Kenya, a RUFORUM National Chapter of Universities, and other higher education institute ecosystem actors for articulating demand, quality assurance of education, research, and strategic partnerships, collectively emphasized the need for more integrated teaching, learning and research for development, during one of their meetings. Indeed the integration of Technical and Vocational Education Training (TVET) in higher education

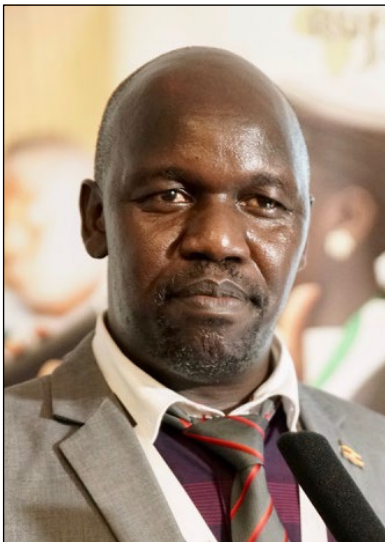
to skill Africa's youth was discussed, with universities requested to support quality assurance and curriculum reform and reviews. This is an area that RUFORUM network will pursue for the foreseeable future, being critical for skilling millions of out-of-school youth who are mostly unemployed. Topical issues in research, innovation and development such as climate change, arable agriculture, entrepreneurship and education are also discussed in this issue. Equally important, are voices from the field, the outcome of university led transformative education that you will enjoy reading. In this issue, we present Prof. Wales Singini, a RUFORUM Doctoral and Post-doctoral Alumnus who has been appointed as the vice chancellor of Mzuzu University, Malawi, Eminent Scientists have also been recognized and we are proud of their achievements. The network is profoundly grateful to its Vice Chancellors, Academia, students and partners for the great work they are doing to catalyze Africa's development. According to Times Higher Education Ranking 2023, 28 RUFORUM Member universities were ranked among top 100 universities in African while in 2024, 97 member universities were ranked among the top universities according to Webometrics ranking 2024.

# Teaching and Learning



## Ethical considerations of artificial intelligence in e-learning: Balancing innovation and data privacy

By Otto Francis, Director of ICT at the Mountains of the Moon University, Uganda



**A**rtificial Intelligence (AI) aims at improving how machines perform tasks in a way which mimics human experts. Recent advances in AI have resulted in innovations that impact our lives every

single day, bringing with it both benefits and risks for all spheres of human activities, including education. Ethical issues, such as data privacy (including misuse of private data or surveillance of people's lives) remain among the top concerns of AI integration in ICT interventions. E-learning is increasingly becoming an important area of focus today because it offers a cost-effective alternative in the delivery of education, bringing with it flexibility and personalized experience for learners. Security and data privacy concerns arise in different aspects such as personal data and grades, right to protect privacy, open access, transparency of information, and collaborative teaching and learning activities. These are key ethical issues that need

consideration in adoption of AI for e-learning. Artificial Intelligence tools contribute immensely towards building intelligent and personalized learning environments in an attempt to make learning more student-centered, relevant and enjoyable. It is known that the use of AI technologies in class not only contributes to students' learning but can also reduce in some respect a teacher's workload and can improve students' learning process and their learning results. E-learning extends our learning boundaries to the outside world and helps us gain new knowledge from those we are not even known to and this is why data privacy and other ethical issues become important and continue to take a centre stage in the research

community. As our boundaries open to others' networks to gain information we need, we also share our inside worlds with the outside world to understand our worlds as much as possible. Therefore, sharing of information including personal data becomes a common activity and a normal way to interact with online platforms. In the process of learning online, we share our personal data and also receive personal data from other people connected to us online. This definitely puts data privacy issue on top list of risks associated with e-learning, which is further exacerbated by the use of AI technology. AI tools automate extraction and sharing of personal data making the data privacy risk even higher. Because of this, there are tendencies of resistance to sharing data and restraint by some people in usage of technologies.

Privacy issues therefore remains a central concern of AI in e-learning and need to be addressed whilst we advocate for innovations supporting sharing knowledge publicly in an e-learning environment. There are three questions we need to answer as we attempt to balance the adoption of AI innovations and data privacy concerns: (a) What innovations are characterizing AI-driven e-learning? (b) What kind of privacy issues are presented in various e-learning environments? and (c) How can these privacy issues be addressed whilst we harness the various AI technology innovations for e-learning? These questions are explored in the following sections

### **1. What innovations are characterizing AI-driven e-learning?**

To answer this question, we need to look at the current trends defining AI innovation in the aspect of education. AI technologies are used in many dimensions of education, especially in supporting online education. Recent study in this area concluded that there are three dominant thematic tendencies in the AI innovations in e-learning: AI technologies used in online teaching and learning processes; Algorithms used for the recognition, identification, and prediction of students' behaviors; and. adaptive and personalized learning empowered through artificial intelligence technologies.

Application of AI technologies in online teaching and learning processes have tended to focus on personalizing instructional materials, automating routine learning tasks, and creating adaptive assessments of learning outcomes. These tools have contributed immensely towards supporting online teaching and learning, making virtual and often large courses more interactive and individualized. For instance, use of Virtual Tutors, with help of natural language processing, goes a long way to simplify student questions and provide guidance on specific topics, either through linear modules or conversational interactions that mimic human interaction.

On the other hand, use of machine learning to recognize, identify, and predict students' online learning behavior has become increasingly trendy in recent years, making management of online learning easier. AI tools used in recognition, identification, and prediction of students' online learning behaviors are very

useful for education managers to make understanding the online nature of studies more comprehensive and setting of more realistic learning goals. The AI tools help predict how students will learn, so education managers can make materials that fit each learner's goals and past successes or experiences. By leveraging AI technologies, education managers can tailor learning experiences to meet the individual needs, preferences, and even learning styles of students. In terms of support for adaptive and personalized online learning. AI tools aid in aligning learning to individual student's learning needs. This is what is referred to as personalized learning. Use of AI technologies help in making training fit the needs of each individual student, tailoring student's learning experience to fit their needs and enabling each student's needs and learning goals to be met by changing things like the speed at which they learn, the materials they use, the order in which they learn them, the technologies they use, the quality of the materials, the way they are taught, and the materials they use to learn, among others. By using AI for personalized learning, students can receive training at their own pace and when it's most convenient for them. This article provided suggestions based on UNESCO study on how to balance between innovations and the data privacy issues to make AI.

### **2. What kind of data privacy issues are presented in various e-learning environments?**

Ethical issues in e-learning environments include exposure of learning activities and

integrity of assessment, posing academic dishonesty or cheating during examinations increases and breach of piracy. Data privacy is one top ethical consideration to make in the use of technologies that support online teaching and learning. These issues arise due to the fact that information is shared online and such information including personal data that are normally available publicly due to nature of technologies. Take for instance, learner's registration details, online evaluation of academic work whereby teachers' and students' comments are posted in blogs, evaluation and feedback are posted online, and other activities that potentially at high risk of privacy infringement can be publicly viewed. These and other issues require careful consideration in order to attain some level of trust in the e-learning environments. These data privacy concerns in e-learning environments require attention by both the developers of AI technologies and teachers to ensure that students' personal data and grades, students' right to protect their privacy in the context of a public website, open access to each other's work, transparent reflections, public comments, critical analysis of the assignments, critical comments, and collaborative evaluations of students' work are well managed for positive impact of the AI application in e-learning environments.

### **3. How can these privacy issues be addressed while harnessing the various AI technology innovations for e-learning?**

In e-learning, it is important

to note that technology innovations can have positive impacts (in terms of security and safety of data) on e-learning environments if users adhere to strict guidelines on effective use of technologies. In 2020, UNESCO published guidance for students, teachers and parents on Personal Data and Privacy Protection in Online Learning in which, a number of specific strategies were suggested as security measures to protect personal information shared before, during and after learning.

Therefore, in order to address the highlighted data privacy issues while harnessing the various AI technology innovations for e-learning, it is important that the following steps be taken by implementers of online learning technology tools. 1) Preparing devices, network, and tools before start of e-learning activities. This a basic aspect for personal data protection, which can guarantee the quality of e-learning environments. 2) Preserving privacy when signing up/in on learning platforms is the first and most important precaution. However, it is often ignored by users which leads to forget the username/password, leak password, or other issues. Using strong password to create account and signing in a device that's not yours can be very helpful. 3) Protecting privacy when navigating learning platforms. Enrolling in an online course, utilizing personalized learning services, using search services carefully, recognizing location services, and backing up personal data are key actions that should be taken by all users. 4) Staying

safe while learning with social networking tools. These tools are increasingly being used in online learning, providing students with a medium in which they can actively engage with each other and with their teachers, co-create knowledge, share experiences, work and learn collaboratively. However, the use of social networks among students may affect their academic life negatively. This is bolstered by the fact that the personal data may leak in social network, their use constitutes distractions, as well as that the students tend to invest a good deal of time in the use of such technologies. Using video conference tools with caution, posting in the discussions and forums responsibly, and surfing the Internet safely are strongly advised. 5) Clearing personal data after learning online. Removing data traces in online learning, and deactivating one's account are important things to do to adhere to the security of data and ensuring data privacy.

### **4. Conclusion**

Innovations leading to AI-driven e-learning has greatly improved teaching and learning process as well as management of learning activities. However, due to the amounts of information shared online before, during and after learning activities, there are a number of privacy and security issues such as personal data and grades, right to protect privacy, open access, transparency of information, and collaborative teaching and learning activities, that need to be carefully addressed in order to provide secured and safe e-learning environments.

# Kenya National Forum stakeholders pledge to collaborate in transforming and investing to tackle youth unemployment

By Evaline Acan, Corporate Communications and Advocacy Officer, RUFORUM



PHOTO BY BEBO  
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Egerton, Kenya - Egerton University held her 5th National Forum for universities, TVETs and industry players under the theme “Promoting Entrepreneurship and Innovation for Youth Empowerment and National Development.” The main objective of the National Forum was to promote a youth driven economy through enhancement of entrepreneurship and linkages for a vibrant business community. In this gathering of esteemed educators, policymakers, and industry experts in Kenya, keynotes from various thought leaders shed light on repositioning Higher Education Institutions (HEIs) to meet the dynamic needs of a

resource-constrained economy while highlighting the potential of youth-led innovations and collaborations.

Prof. Mike Kuria, CEO, Commission for University Education, spearheaded the discussions with his keynote on Repositioning HEIs to meet the changing market needs in a resource-constrained environment. Stressing the importance of collaboration with industry, he urged training institutions to adopt dynamic curriculum designs that cater for the evolving job landscape, emphasizing the need for imparting the right skills and promoting adaptability among the youth.

Ms Jemimah Muchugia, Regional Coordinator of DigiCOW Africa Limited, highlighted the significant role of youth in transforming the agriculture sector. She emphasized on four pillars of success: government support, technology and innovations, youth involvement in policy, and collaborations. Ms Muchugia urged for increased adoption of digital agriculture practices like precision farming and hydroponics-technique of growing plants using a water-based nutrient solution rather than soil, encouraging the power of collaboration and networks for outsourced technical aspects.

She pointed out that youth and innovations in agriculture hold the key to addressing the growing challenges of food security and sustainable development. Engaging young minds in the agricultural sector not only brings fresh perspectives and creative ideas but also fosters a culture of entrepreneurship and technological advancement. By leveraging modern technologies and data-driven approaches, young farmers can optimize resource usage, increase productivity, and develop climate-smart solutions. Additionally, her strong emphasis was on empowering youth to participate in agribusiness ventures and value chains creates economic opportunities, improves livelihoods, and contributes to the overall growth and transformation of rural communities. She concluded by pointing out that supporting and investing in the potential of youth-driven agricultural innovations is essential for building a resilient and prosperous agricultural sector that can sustainably feed the world's growing population. Prof. Okori, the Executive Secretary of RUFORUM, issued a wakeup call, stating that 80% of future jobs will be in the informal sector. To prepare the youth for this changing landscape, he advocated for transformation at three levels: individual, institutional, and community. Prof. Okori challenged educational institutions to train students not just for self-employment but also to create job opportunities for others.

Prof. Isaac Kibwage, the Vice-Chancellor of Egerton University shared the institution's successes, including offering training in a resource-constrained environment and

safeguarding innovative ideas for the benefit of founders and additional revenue. He stressed the importance of the TAGDEV model for embedding in the national innovation ecosystem.

Repositioning Higher Education Institutions (HEIs) to meet the changing market needs in a resource-constrained environment is a critical imperative for ensuring their relevance and impact in today's rapidly evolving world. With limited resources and increasing demands, HEIs must embrace innovative strategies to adapt their curricula, teaching methodologies, and research focus to align with the dynamic needs of industries and society. This entails fostering stronger partnerships with businesses and industries to gain insights into emerging market trends, skills gaps, and technological advancements. Moreover, HEIs should emphasize interdisciplinary approaches and flexible learning options that enable students to acquire a diverse set of skills and competencies. Embracing digital technologies and open educational resources can also help overcome resource constraints while expanding educational access. By proactively repositioning themselves in this manner, HEIs can play a pivotal role in equipping graduates with the expertise required to thrive in a resource-constrained market and contribute meaningfully to sustainable socio-economic development.

Highlighting the urgent need for a supportive startup and innovation ecosystem, Mr. Moriaso Josiah, CEO of the Youth Development Fund, acknowledged the existence of various funds but emphasized the lack of a comprehensive support system. He urged the government to facilitate

access to finance and markets for startups, tapping into the potential of Kenya's highly skilled and energetic youth. Drawing attention to the untapped potential of Technical and Vocational Education and Training (TVETs), Ms Ruth Ndungu from the National Chamber of Commerce and Industry emphasized their role in contributing to innovations. She stressed the need for youth support to standardize products and access markets, with a particular focus on the game-changing potential of agriculture. "By providing practical, hands-on training and education, TVETs equip students with the necessary skills and knowledge to address real-world challenges and create innovative solutions. These institutions often collaborate closely with industries, businesses, and research centers, facilitating knowledge exchange and technology transfer. TVET graduates are well-prepared to enter the workforce with specialized skills, making them valuable contributors to research and development, product design, and process optimization" she added.

As Kenya marches towards a future led by innovation and collaboration, the youth stand ready to embrace the opportunities and challenges that lie ahead. With the right attitude and a supportive ecosystem, they are self-confident to shape the country's destiny on a global stage.

This Forum marked a pivotal moment for Kenya's education and innovation landscape, as stakeholders from all sectors pledged their commitment to empowering the youth and creating an enabling environment for growth and progress.

## Research, Innovation & Development

# Climate change and agricultural economics: Adapting food systems to a changing environment

By Ernest Molua, Deputy Vice Chancellor of the University of Bamenda, Cameroon



Climate change is a complex and challenging issue that poses significant threats to our planet. It falls into the category of “wicked problems,” characterized by intractable solutions, scientific and economic complexities, deep uncertainties, ethical concerns, and often, they only become apparent when their severe consequences are felt. Climate change results from global warming, primarily driven by the greenhouse effect. This effect is caused by an increase in Greenhouse Gases (GHGs) such as carbon dioxide, methane, nitrous oxides, chlorofluorocarbons, and water vapor in the Earth’s atmosphere, trapping heat like a blanket and leading to a rise in global temperatures. While some GHGs occur naturally, human activities like burning fossil fuels, deforestation, and industrial processes accelerate their release into the atmosphere.

Scientists have been closely monitoring climate-related phenomena, such as temperature changes, precipitation patterns, and weather events, and their effects on our environment for decades. These observations confirm that global warming is real, and human activities since the Industrial Revolution have significantly contributed to the changes we are witnessing today. Climate change primarily manifests through rising temperatures and altered precipitation patterns, affecting regions differently. Land areas are experiencing more rapid warming, while precipitation changes are less predictable. Some areas, like the horn of Africa and the Sahel region, are expected to become drier, while others, like the Congo Basin and coastal zones, will see increased rainfall. Additionally, climate change is associated with a higher frequency of extreme events like droughts, cyclones, floods, wildfires, and disease outbreaks. The Intergovernmental Panel on Climate Change (IPCC) reports that global average surface temperature has increased by approximately 1.07°C (1.9°F) since 1850, with human activities responsible for a significant portion of this warming.

Looking ahead, IPCC projections suggest that under various emissions scenarios, global temperatures will

continue to rise, with the lowest-emissions scenario projecting an increase of 1.0 to 1.8°C (1.8 to 3.2°F) by 2100 compared to pre-industrial levels. Conversely, the highest-emissions scenario predicts a much steeper rise of 3.3 to 5.7°C (5.9 to 10.2°F) by 2100 if GHG emissions continue unabated.

Climate change exacerbates various sectors of the economy, with agriculture, fisheries, water resources, health, and forestry being particularly sensitive due to their inherent connection to the climate. Africa heavily relies on these primary sectors for income generation, which, in turn, supports other critical areas such as education, healthcare, and infrastructure development. Climate change has intricate links with food, water, energy, and biodiversity, implying that any disturbance in the climate can have far-reaching economic consequences.

Agriculture is especially vulnerable to climate change, which poses numerous challenges to the food system. The entire food supply chain, from growing and harvesting to processing, packaging, transportation, marketing, consumption, and disposal, is susceptible to the effects of a changing climate. Agriculture’s dependence on weather, land, water, and other natural resources makes it particularly sensitive to climate variations.



In Africa, where agriculture accounts for an average of 24% of the GDP, climate change can have profound effects on both the sector and the broader economy. With post-harvest activities included, agriculture-related industries contribute nearly half of all economic activity in Sub-Saharan Africa (SSA).

Climate change impacts on agriculture are multifaceted and affect various stakeholders along the value chain, from producers and processors to marketers and consumers. Key impacts include challenges related to water availability due to shifting precipitation patterns, changes in agricultural productivity, and their impacts on soil and water resources. Additionally, climate change can lead to health issues for agricultural workers and livestock, such as heat stress, increased pesticide exposure due to expanded pest presence, and worsened air quality. These challenges result in significant economic losses, particularly for rain-fed agriculture in SSA and climate-vulnerable regions like the Sahel and the Horn of Africa. Hunger, although primarily driven by poverty, can also be exacerbated by climate change. The direct impacts of climate change on agriculture and food production include reduced access to food, decreased nutritional value of food, and increased food waste. Flooding from extreme rainfall events can promote toxic mold on crops, while higher carbon dioxide concentrations can reduce the protein, zinc, and iron content of plants, potentially leading to deficiencies in essential nutrients for millions of people. Experts warn that in a world warmed by 2 degrees Celsius,

an additional 189 million people could face hunger, and in a 4°C warmer world, this number could skyrocket to a staggering 1.8 billion.

Looking to the future, the economic losses from climate change are projected to be substantial, particularly during extreme weather events like storms, floods, and droughts. Studies have estimated significant losses, with some regions, such as southeastern Africa, experiencing annual losses of up to 1.7% of their GDP due to combined droughts and floods. Urban and nonfarm households may also suffer from food shortages and higher prices during these events. Predictions for hurricane damages suggest a doubling of annual damage by 2100. Assessments of climate change impacts on tropical storm damages in Southeastern Africa indicate substantial damages, reaching billions of dollars by 2050 if no policy changes are implemented.

Adaptation is a crucial strategy for addressing these challenges. Different stakeholders within the agricultural value chain, including farmers, input suppliers, water managers, food processors, and consumers, must adapt to the changing climate. Adaptation involves adjusting natural and human systems to respond to climate-related changes and uncertainties. It includes reducing the sensitivity of systems to climate change, enhancing resilience, taking advantage of new opportunities, and coping with adverse consequences. Adaptation can be proactive or reactive, targeting short or long-term changes, and can occur at

various levels, from individual farmers to national and global efforts.

A sustainable food system depends on resilient agriculture and access to nutritious food. In Africa, climate-smart farming methods, such as climate forecasting tools, agroforestry, and soil management practices, can help manage climate-related production threats. Livestock producers can capture methane from biogas generated during manure decomposition. Additionally, reducing runoff through better land management techniques can mitigate nutrient pollution in water bodies. Agricultural research plays a crucial role in developing strategies to reduce the impacts of climate change on crops and livestock, including minimizing pesticide use and improving pollination.

Mitigation is also essential. Despite Africa contributing relatively little to GHG emissions, it must play a role in protecting the global atmosphere, which is a shared resource. Agriculture, while vulnerable to climate change, also contributes to global warming. Deforestation, land clearing, and degradation of soils release carbon dioxide into the atmosphere. Agricultural activities, waste management, energy use, and biomass burning contribute to methane emissions, while fertilizer use is the primary source of nitrous oxide emissions. To address these issues, agriculture must reduce GHG emissions and enhance carbon sequestration, offsetting emissions from other sectors.

Policy recommendations for agriculture and food systems

in Africa should encompass a range of actions. Many African countries have already prioritized agriculture's adaptation to climate change, establishing frameworks and initiatives for research, seed

distribution, land and water management, diversification, and disaster risk reduction. Strengthening science-based research and development is essential to ensure efficient, productive, and resilient

agriculture. On the mitigation front, African nations have committed to Nationally Determined Contributions (NDCs).

## University of Namibia: Turning encroacher bushes into livestock feed and mushroom substrates

By Prof. Simon Angombe, the Principal Investigator for Encroacher bushes value chains initiative in Otjozondjupa Region, Namibia and Waswa Moses, Technical Specialist for Planning Monitoring Evaluation and Learning, RUFORUM

According to the World Bank, Namibia has the driest environment in Sub-Saharan Africa, therefore recurring droughts pose significant challenges for smallholder farmers. Because intensive farming is common in Namibia, livestock rely on rangelands for food. Bush encroachment into rangelands is a condition characterised by the invasion/thickening of undesirable woody species and the subsequent decline in palatable grasses. According to the Environmental Information Service of Namibia, a recent evaluation predicts that bush encroachment affects 45 million hectares of Namibian territory. At least half of the land surface is covered in dense bush, with densities of up to 6,000 shrubs per hectare. Bush encroachment has become a crucial indication of land degradation, with negative implications on biodiversity, soils, livelihoods, and, water supply. It further threatens cattle productivity by reducing rangeland carrying capacity by up to two-thirds. Despite its detrimental effects, the encroacher bush represents a massive natural resource worth more than 400 million tonnes

of sustainably harvestable biomass. Measures to repel bush encroachment provide new prospects for the Namibian economy, by providing feed for livestock, using the resource for power generation and substrates for mushrooms, etc.

Taking these opportunities into account, the University of Namibia with support from the Mastercard Foundation through the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)-Transforming African Agricultural Universities to Meaningfully Contribute to Africa's Growth and Development (TAGDev) programme, implemented a research project to develop economic products from encroacher bushes. Harvesting thorny bushes and using them for livestock feed and other goods may help to reduce bush encroachment, restore encroached rangelands, improve animal feed security, and boost livestock production. The project achieved this through an innovation platform including primarily the University of Namibia; Okakarara Vocational Training Centre;

and, communities from the African Wild Dog Community Forest/Conservancy. Other collaborators were the Ministry of Agriculture, Water and Land Reform, Bush Control and Biomass Utilisation, Debushing Advisory Service, Namibia Biomass Industry Group and FARM4TRADE.

Specifically, the research was done to develop animal feeds and mushroom substrate. These two products were co-developed by University of Namibia, National parties and users of the products organisation and innovation platform.

### Substrate for mushroom cultivation based on encroacher bushes

One of the key project objectives was to cultivate oyster mushrooms using substrates derived from encroacher bushes such as *Senegalia mellifera*, *Terminalia sericea*, *Glavia flava*, and *Combretum collinum*. These bush species proved to be excellent for oyster mushroom growth. Beyond their culinary appeal, the mushrooms showcased antioxidant activity and a rich nutritional and

mineral content, positioning them as potential remedies for various ailments and valuable additions to human diets. In an effort to empower smallholder farmers, the project provided training in mushroom cultivation. Remarkably, over half of the participants expressed their intent to produce mushrooms for profit, while 29% aimed for household consumption, and 7% opted for both. This initiative not only opens new revenue streams but also engages younger generations in agricultural diversification, breaking away from the predominant focus on livestock operations.

The use of bush-based feed holds transformative potential for community agriculture by increasing short-term feed availability and enhancing grazing conditions over time. Converting biomass from encroacher bushes into animal fodder stands out as a sustainable management practice that simultaneously addresses bush encroachment and improves ruminant feed availability, without competing with human food supply. In Okondjatu, farmers have successfully employed milled



Bush Encroachment activities in Namibia

bush from encroacher bushes as a roughage source to sustain livestock, particularly during dry seasons and climate-induced droughts when forage options are limited and of low quality.

Through research conducted under the Community Action Research Programme (CARP) project, the University of Namibia identified a promising approach. By incorporating molasses, malted barley flour, and Lactobacillus inoculum into milled bush mash, well-fermented and storable bush silage could be produced, maintaining quality for up to 100 days.

**Conclusion**

Research and innovation by universities can play a role in changing problems that communities face into opportunities. The university

researchers in the project were able to use the encroacher bushes problem and produce valuable products that changed the lives of farmers.

Communities exhibited varied responses to bush encroachment, but they now recognize the potential benefits of value addition to bushes. The specific advantages encompass increased livestock feed availability, enhanced ecosystem services, heightened carrying capacity and livestock returns, and amplified rangeland productivity. These advantages collectively contribute to an improved standard of living for rural households. The initiative not only tackles environmental challenges but also nurtures sustainable agricultural practices with lasting positive impacts.



Livestock feed innovation from encroacher bushes

# My long and enriching journey: A continuing quest for excellence

By Arfang Badji, Post-Doc Fellow at Namulonge Research Institute in Uganda



**R**UFORUM, backed by funding from the Carnegie Corporation of New York (CCNY), has provided essential support to early career scientists to enhance their capabilities in teaching, research, leadership, mentoring, and interdisciplinary collaboration. Such support plays a pivotal role in bolstering a thriving community of dedicated scientists, united in their efforts to revolutionize research and innovation to address Africa's agricultural challenges. Dr. Arfang Badji, Post-doctoral Fellow at Makerere University had a transformative experience in his career and personal growth. As one of the beneficiaries of the program caught between the choice of returning home and seizing a compelling career opportunity, he opted to extend his stay in Uganda for additional two years. The nation, its inhabitants, and the alluring academic possibilities had deeply resonated with him,

compelling him to embrace this chance destiny had presented.

Under the mentorship of Dr. Stanley Nkalubo (NaCRRRI) and Emeritus Prof. Patrick Rubaihayo (MAK) leading a research team of PhD and MSc students focusing on legumes, maize and sorghum, he embarked on an enriching expedition of research and collaborative exploration. Collaborating closely with PhD and MSc. scholars, their collective efforts centered on advancing legumes, maize, and sorghum research. Despite encountering obstacles along the way, their unwavering determination pushed them onward.

Dr. Arfang takes immense pride in the remarkable strides achieved by his students on this transformative expedition. Notably, Winnifred Amongi, a dedicated PhD scholar, unveiled the intricate genetic diversity underlying various bean genotypes, thereby illuminating pathways for enhancing crucial attributes such as cooking time, iron and zinc content, as well as bioavailability. Likewise, Eunice Vasiter Kesiime, another PhD student, successfully pinpointed bean genotypes characterized by swift cooking times and outstanding canning qualities, catering to the needs of households and processors alike.

Within the realm of maize research, Fiston Masudi Tambwe, an industrious

MSc. candidate, discovered invaluable revelations concerning Provitamin A accumulation while pinpointing resilient, high-yielding maize hybrids resilient to Striga infestations. Another dedicated scholar, Marie Claudine Mukashema, navigated challenges with resilience and demonstrated considerable potential in the identification of robust, anthracnose-resistant sorghum genotypes with promising yield potential.

"As I guided these talented students, I sharpened my research and teaching skills, engaging with other postgraduate students and collaborating with esteemed scientists. These interactions expanded my expertise in data analysis, programming languages, and crop modeling," he said.

Dr. Arfang further added, "I have been working on developing digital farming systems and forging collaborations in Uganda and across Africa for agricultural development activities.

Additionally, I am currently employed as a Post-doctoral at the Makerere University Regional Center for Crop Improvement (MaRCCI) where I am continuing to guide students and pursue research on sustainable cropping systems."

In this transformative journey, Dr. Arfang has been profoundly touched by the genuine warmth, tranquility, and hospitality

showed by Uganda and its inhabitants.

Engaging with many people from varying backgrounds changed his insight of the global matters, nurturing a profound sense of empathy and fostering a remarkable spirit of tolerance within him.

"I extend my heartfelt gratitude to RUFORUM, the Carnegie Corporation of New York, Makerere University, NaCRRRI, MaRCCI, and Uganda for unwavering support. I cherish

this journey of growth, and as it continues, I remain committed to making impactful contributions to agriculture and scientific excellence," he said.

“ Together, we can achieve greater heights in agricultural research and capacity building across Africa!”



## Responsible Artificial Intelligence for climate action

Mr. Yamungu Alongo Boniface, **Technical Specialist for the Regional Anchor Universities, RUFORUM**

Climate variability and change remains one of the most significant challenges for Africa in the 21st century. It threatens to undo the development gains made over the last two decades and could potentially reduce the region's capacity to attain the Sustainable Development Goals by 2030. Action is required to bolster the region's capacity to respond and urgently address the debilitating effects climate variability and change has on agricultural production, water resources, energy as well as the propagation of conflicts in the region. Deployment of Artificial Intelligence (AI) in other regions of the world especially in the global north has proven critical because of its ability to increase adaptation and mitigation capacity and improve the precision of evidence-based

decision making.

### About RAINCA

The Regional Universities Forum for Capacity Building in Agriculture (RUFORUM; [www.ruforum.org](http://www.ruforum.org)) together with two partners namely West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL; [www.wascal.org](http://www.wascal.org)) and AKADEMIYA2063 (<https://akademiy2063.org/>) are implementing a project on Responsible Artificial Intelligence for Climate Action in Africa [RAINCA], funded by Canada's International Development Research Centre (IDRC) and the Swedish International Development Agency (SIDA). RAINCA network seeks to advance climate action in Africa through the responsible development

and deployment of artificial intelligence innovations with respect to: (i) development and scaling of responsible AI innovations for climate action in Sub-Saharan Africa, (ii) building capacity of African innovators and researchers, and (iii) increasing the contribution of African research to international AI policy and practice. Through this network, Africa's climate change research and innovations will be enhanced and application strengthened at various levels including the community. Innovation in this project will provide responsible AI for climate action with demonstrated relevance/ links to national processes and livelihoods of vulnerable communities. Through this funding from IDRC, RAINCA network competitively identified innovation research projects

in Responsible AI for Climate Action in Africa. After a rigorous review process, eleven (11) projects working in the artificial intelligence in different thematic areas that were considered by the network as priority areas were selected. More information can be found at <https://rain-ca.org/>.

After the selection of the eleven projects, major achievements have been realized including the

1. **Principal Investigators (PIs) orientation meeting in Uganda:** this meeting aimed at guiding the awardees on what the project expect from them, give them an opportunity to learn from each other and thus contribute the knowledge sharing across Africa.
2. **PIs participation in the Artificial intelligence conference:** This was to share their experience and learn from others working on the artificial intelligence in and outside Africa.
3. **Proposal development**

**workshop in Kigali:** This was sanctioned of different proposal to the French trough team that was formed during the proposal development workshop in Kigali. The aim of the workshop was to equip PIs with skills in developing fundable proposals in order to raise more funding for sustaining the Responsible Artificial Intelligence for Climate Action Network.

**RUFORUM role in the RAINCA Network**

As a RAINCA network partner, RUFORUM is responsible of the following:

1. Lead the selection of the groups of African innovators and researchers to develop, deploy and scale responsible AI applications in climate action from development of call for proposals to signing of contracts with sub-grantees;
2. Provide technical support to the sub-grantees in projects management, climate change and sustainability of projects;
3. Lead the networking and

partnership activities of the Hub through activities such as participation in conferences, formal partnerships and intra-network collaborations and lesson sharing;

4. Lead the development of the Project Gender Strategy;
5. Lead the design and implementation of the sustainability strategy for the network through linkages with other networks, looking for funding opportunities and proposal development write-shops among others;
6. Participate in publicity and marketing of the project within the network and across Africa, and
7. Participate in project monitoring and evaluation
8. Any other specific project activities agreed together with WASCAL and AKADEMIYA2063 to be best executed by RUFORUM.

Principal Investigator	Gender	Country of Residence	Proposal Title	Thematic Area
Adande Belarmain Fandohan	Male	Benin	Development of an artificial intelligence assisted framework for assessing the vulnerability to climate change of mangrove ecosystems in West Africa: application on Benin coastal mangroves	Climate change and biodiversity
Catherine Mulinde	Female	Uganda	Modeling land productivity and crop yields under changing climate and land use management using Artificial Intelligence in Lake Kyoga basin, Uganda	Responsible Artificial Intelligence and climate science

Chika Yinka-Banjo	Female	Nigeria	Assessing impact of climate change or variability on the emergence of new plant diseases and development of innovative mobile application for control	Assessment of impacts of climate change and adaptation practices using AI
Cyril Boateng	Male	Ghana	RAGA: An Artificial Intelligence Based System for Predicting Groundwater Availability	Climate change and water resources
Derek Ajesam Asoh	Male	Cameroon	Artificial Intelligence and Machine Learning for Modelling Climate Change, Landscape Dynamics, and Improving Renewable Energy Technologies for Environmental Care in the Congo Basin.	Climate change, landscapes and renewable energy
Isa Kabenge	Male	Uganda	Leveraging AI for real-time cattle counting and management system indexing using UAV Videos and images for estimation of GHG emissions (LAIRG)	Emission of greenhouse gases
John Makokha	Male	Kenya	Use of Smart Technology to Predict Climate Change Effects on Terrestrial Plants Diversity and Conservation for Sustainable Livelihood in North-Rift Region, Kenya	Climate change and biodiversity
Judith Leo	Female	Tanzania	Towards sustainable carbon-neutrality and climate-resilient green growth development: Using AI in Tanzania	Climate smart agriculture
Mekonnen Adnew Degefu	Male	Ethiopia	Bridging critical gaps in relative humidity data to enhance climate science and services in Ethiopia: The case of Awash River Basin	Predicting climate hazards and disasters through improved climate modelling
Olusanya Olubusoye	Male	Nigeria	Modelling Grid Electricity Demand using Artificial Intelligence	Climate change, landscapes and renewable energy
Salomon OBA-HOUNDJE	Male	Côte d'Ivoire	Climate change and land use land cover dynamics impacts on hydropower generation and consequences on electricity supply in West Africa using Ensemble machine learning Algorithm	Climate change, landscapes and renewable energy

## RUFORUM Alumni

The TAGDev programme invests in individuals who become change agents in society. In this series of voices of impact, RUFORUM profiles personal stories of young women and men who are emerging as agents of hope and change in their communities. Through giveback to community and own-entrepreneurships, these young people are emerging as change agent leaders.

### Cultivating change: How entrepreneurship and education can transform Uganda's agriculture: Experience from Victor Akejo



**A**round the world, agriculture is not just a means of sustenance, but a pathway to empowerment and economic growth. As the global population continues to rise and natural resources become scarce, the agricultural sector faces the challenge of producing more food while addressing sustainability concerns. Innovative approaches and youth-led initiatives are gaining prominence in addressing these issues, as young entrepreneurs and change-makers step up to contribute to agricultural transformation. In this context, the article "Cultivating Change: How Entrepreneurship and Education are Transforming Uganda's Agriculture" highlights

a narrative of resilience, and community collaboration in the realm of farming.

A Ugandan entrepreneur, Gordon Victor Akejo, who, driven by a desire to make a difference, navigates challenges to build an impactful agricultural enterprise. This narrative is emblematic of the broader African context, where innovative strategies and the involvement of youth are pivotal to achieving food security, economic growth, and improved livelihoods.

Gordon's journey began in 2020, fueled by a desire to solve the farming challenges faced by his community. Hailing from a farming background himself, he recognized the struggles that local farmers encountered due to limited resources and access to essential tools. Equipped with courage and a scholarship from RUFORUM (Regional Universities Forum for Capacity Building in Agriculture), Gordon's venture kicked off with a modest investment of approximately \$4,200.

His enterprise, an agricultural organization with a focus on input distribution, farmer training, and extension services, takes root in Alebtong District. Despite initial challenges, including limited access to

smartphone among farmers, Gordon's team embraced innovation. They introduced discount cards for subscription services, bridging the gap for farmers who faced financial constraints but yearned to benefit from the expertise provided.

Gordon's journey of impact does not end with individual farmers. Through the establishment of farmer groups, he has reached over 5,000 farmers, fostering increased yield, knowledge-sharing, and environmental consciousness. He has woven a web of support through partnerships with organizations like RUFORUM, which funded his studies and provided essential training, and impact, which has extended networking opportunities and connections for his business.

Gordon's expansion plans are equally ambitious. He envisions greater focus on organic products and value addition, catering to the evolving needs of the community. His commitment to bridging the rural-urban divide is evident in initiatives such as the micro-credit lending program that empowers local women to start and sustain small businesses.

Gordon's story is a testament to the potential within each individual to drive change and sustainable development.



By harnessing the power of education, innovation, and collaboration, he is bringing about positive transformation

in the lives of farmers in Alebtong District, Uganda. As he nurtures his business, he is nurturing the potential of the

community and demonstrating that a single spark can ignite a flame of positive change.



Training small scale farmers in rural areas of Alebtong District in Uganda

## Seeds of success: Cultivating change in Ugandan agriculture: Experience from Kato Omia



In the rural landscapes of Uganda, where agriculture reigns supreme, the story of Kato Omia Adilu and his venture, the Omni Agribusiness Development Group Limited, stands as a testament to the potential for innovation and

growth in the agricultural sector. Kato Omia, embarked on a journey that saw the transformation of a modest family business into a thriving agricultural enterprise.

Kato Omia, a recipient of RUFORUM-TAGDev support, embarked on a transformative journey when he joined Egerton University in 2018 as a Mastercard Foundation scholar. Fueled by his aspirations, he co-founded Omia Agribusiness Development Group alongside his brother. Established on November 16, 2016, the company's operational journey commenced in July 2018. Operating within Uganda, the company boasts branches in Adjumani, Yumbe, Paidha-Zombo, Bweyale-Kiryandongo, Sambia-Arua, and Container Village, Kampala. Empowered by RUFORUM's

comprehensive training programs, Kato Omia honed entrepreneurial acumen, leadership finesse, and adept business management skills. Notably, the company benefited from grant proposal writing training and secured funding from Palladium. Among the top 5 chosen enterprises, they were granted a seed fund that subsidized 50% of employee salaries for years.

Fueled by a vision to revolutionize agriculture, Omia Agribusiness Development Group endeavors to be a premier purveyor of quality agricultural inputs and market insights for farmers. The enterprise facilitates access to genuine, affordable agricultural inputs, extends essential support services, and forges connections to lucrative markets. Kato's motivation sprang from a fruitless job hunt and the realization that distant

seed suppliers made farming inputs cost-prohibitive for local farmers. Eager to address this, he established a solution-oriented approach by providing proximity to essential products and services. The company also addressed the lack of extension services that led to limited knowledge and subpar yields. Through strategic collaborations with entities such as Palladium, National Agricultural Research Organisation (NARO), Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), and Young African Leaders Initiatives among others, the business gained financial prowess and proficiency in record keeping. Kato's initiative expanded to employing mobility solutions for better farmer interaction. A motorcycle was acquired to facilitate frequent farm visits and provision of extension services. A robust management structure, financial training for staff, an employee monitoring system, and a culture of fostering innovative ideas were integral to



the company's sustainability. Reflecting on his journey, Kato Omia remarked, "RUFORUM's training and my venture into entrepreneurship catalyzed transformative shifts in my life. I no longer have the job-seeking mindset and acquired managerial and communication skill, pivotal to our ongoing

success." Expressing gratitude, he acknowledged RUFORUM and Egerton University for unwavering guidance and training, advocating that fellow youth should explore entrepreneurship given the dearth of conventional opportunities in a job-scarce landscape.



**Training farmers on vegetable farming as a business, affordable irrigation options and poultry management**

## Boosting young talents in Africa: Experience from Dorah Momanyi



**A**frica is a continent of hope; its youth are at the Centre of its renaissance and they are the fastest growing demographic with Africa's population expected to more than double by 2050 to 2.4 billion. There are over 200 million Africans aged between 15 and 24 years making Africa the youngest continent on the globe and by 2040, Africa's young workforce will be the largest in the world, surpassing that of both China and India. The youth in Africa are ambitious; most becoming economically active and entrepreneurial out of necessity, and they are demonstrating a wealth of resourcefulness and inventiveness providing a range of enterprises and services.

In the pursuit of fostering entrepreneurship and empowering young talents in Africa, the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) has played a significant role. Through its initiatives, RUFORUM has provided a platform for nurturing young African entrepreneurs and supporting their innovative endeavors. One outstanding example of this impact is the remarkable journey of Dorah Momanyi, who is one of the winners of the prestigious RUFORUM Young African Entrepreneurs Award in 2021. Dorah Momanyi, a dynamic and self-driven young entrepreneur from Kenya, relocated to Makerere University for a 5 months' fellowship. After the five months, Dorah started a company called iPop Africa, the company makes snacks by popping cereals like sorghum, millet, amaranth, rice and con; however, she had limited funds.

Her journey of entrepreneurship and her commitment to making a difference in her community has

been greatly influenced by her association with the RUFORUM Alumni network.

Through the RUFORUM Young African Entrepreneurs Award and the support from the RUFORUM alumni network, her project works with three (3) small holder farmers in the indigenous cereal value chain. "We are working towards introducing our product portfolio in the mainstream market and we are increasing our revenue streams day by day. I am already benefiting from a range of programs shared through the alumni network platform," Dorah said.

"I foresee an alumni network where an entrepreneur in Kenya (like my business iPoP Africa) is able to trade in other countries with other RUFORUM young entrepreneurs using their brand name and easing the difficulties of inter-country trade; a model and vision a RUFORUM Alumni, Napoleon Kajunju, one of the RUFORUM Alumni suggested at the Triennial conference in Benin" She added.



## How Dr. Mukebezi's PhD promises fortunes to farmers in eastern Uganda

Source: <https://researchfindsug.com/mak74thgraduation-how-dr-mukebezis-ph-d-promises-fortunes-to-farmers-in-eastern-uganda/>



**M**ukebezi's study earned her Doctor of Philosophy in the week-long graduation at Makerere University in Uganda.

Her research investigated the intricate structures and collaborative capacities of Community-based Innovation Platforms (CB-IPs) in facilitating farmer participation in collaborative activities in Eastern Uganda, according to her citation in the graduation booklet.

According to her study, these platforms serve as hubs for farmers to engage with various actors in the agricultural ecosystem, fostering a spirit of collaboration and shared innovation. Stakeholders such as line ministry officials, extension workers, and financing systems come into the picture.

The study, conducted under the guidance of esteemed mentors

Dr. Bernard B. Obaa and Dr. Florence B. Kyazze, has shed light on the critical factors influencing farmers' active involvement in collaborative initiatives for better performance and yield.

One of the key findings from her study is the crucial role played by information sharing within farmer groups.

Dr. Mukebezi found out that the sharing of diverse types of information and the improvement of cohesion within these farmer groups were essential for facilitating robust farmer participation and enhancing their opportunities.

The insight from her findings highlights the importance of creating an environment that encourages open communication and mutual support among farmers, laying the foundation for successful collaborative activities.

The study also emphasized the critical importance of resource collaborative capacity on CB-IPs.

For example, the availability and adequacy of human, physical, and financial resources were identified as the most crucial factors in enhancing farmer participation in collaborative activities.

This finding implies that strategic investments in these resources to create a conducive environment for collaboration

and innovation within the agricultural community are urgently needed to help improve the situation of farmer groups in the Eastern Region.

Dr. Mukebezi's study further explored the psychological aspects influencing farmer participation.

She found out that positive past experiences, favorable attitudes, and the perceived capacity to participate, determined farmers' willingness to continue engaging in collaborative activities.

This implores the need for organizing activities that not only benefit farmers but also contribute to building their capacity and confidence.

The research was supported by the Cassava Community Action Research Project (Cassava CARP), with funding from the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM).

Dr. Mukebezi's study not only adds to the academic discourse but also offers actionable insights for policymakers, agricultural practitioners, and community leaders, particularly those driving positive change in Eastern Uganda's agricultural sector.

This will go a long way in paving the way for inclusive, participatory, sustainable, and innovation-driven agriculture in Uganda.

## Fostering partnerships to scale out impact at continental and global level

# Strengthening collaborative forces: FARA-AFAAS leaders visit RUFORUM to strengthen African Agricultural Development



Group photo: (L-R) Prof. Patrick Okori, the Executive Secretary of RUFORUM with Prof. Anthony Egeru, the Program Manager for Community Engagement at RUFORUM, Dr. Silim Nahdy, Executive Secretary of AFAAS, Dr. Aggrey Agumya, FARA Executive Director and Dr. Sokona Dagnoko, the Executive Assistant for partnerships at RUFORUM

Kampala, Uganda - In a bid to tackle the pressing challenges in Africa's Agricultural Research for Development (AR4D) system, the Forum for Agricultural Research in Africa (FARA) Executive Director, Dr. Aggrey Agumya and Dr. Silim Nahdy, Executive Secretary of African Forum for Agricultural Advisory Services (AFAAS) paid a courtesy visit to the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM). The meeting aimed at strengthening the relationship between

FARA-AFAAS and RUFORUM in strengthening Africa's Agricultural value chains.

The meeting highlighted the pivotal role that collaborative efforts among these apex bodies - FARA, AFAAS, and RUFORUM - play in shaping agricultural policies, resource allocation, technology delivery and mobilizing the youth to grow the agricultural sector across the continent. The leaders agreed in their call for enhanced coordination and cooperation, envisioning a synergistic

approach that capitalizes on the unique strengths of each organization.

Dr. Sokona, RUFORUM's Executive Assistant in charge of Partnerships, stressed the importance of multi-stakeholder collaborations to meet the different challenges that face Africa's agriculture sector. As RUFORUM maintains its unwavering commitment to nurturing emerging talent, facilitating agricultural research, and driving innovation for a transformative impact on

Africa's agricultural landscape, FARA's strategic focus lies in coordinating and advocating for agricultural research for development (AR4D), while AFAAS channels its efforts into bolstering national Agricultural Extension and Advisory Services.

The concerted efforts of these organizations aim to address some of the most pressing challenges impeding the progress of the African agricultural sector including: The scarcity of scientific expertise across different regions of Africa has been a persistent obstacle. The leaders of the three organizations emphasized the urgency of investing in capacity building for researchers and scientists,

tailored to the unique agricultural context of the continent. The meeting explored strategies to foster closer collaboration between universities, research institutions, and other agricultural stakeholders to strengthen the knowledge generation and its practical application capacity. Acknowledging the current under-resourced state of agricultural extension and advisory services, the meeting highlighted the need for increased investment in these critical areas. Ensuring that farmers have access to the guidance and support necessary to adopt innovative agricultural practices, sourced from higher learning institutions, emerged as one of the priorities.

Additionally, discussions centered on rectifying the deficiencies in the input market system, emphasizing the importance of addressing issues related to quality, quantity, and timely accessibility of agricultural inputs and extension services.

The meeting acknowledged the existence of dysfunctional value chains in critical segments, hindering the growth of the Agricultural sector. Consequently, the FARA, AFAAS and RUFORUM leaders stressed the need to prioritize research that strengthens the connections between startups and larger businesses, boosting innovation and translating agricultural innovations into tangible products and services.

## RUFORUM Delegation meeting His Excellency the United Arab Emirates (UAE) Ambassador to Uganda

**Eng. Nada Sidigg Musa, Technical Specialist for Knowledge Management, RUFORUM**

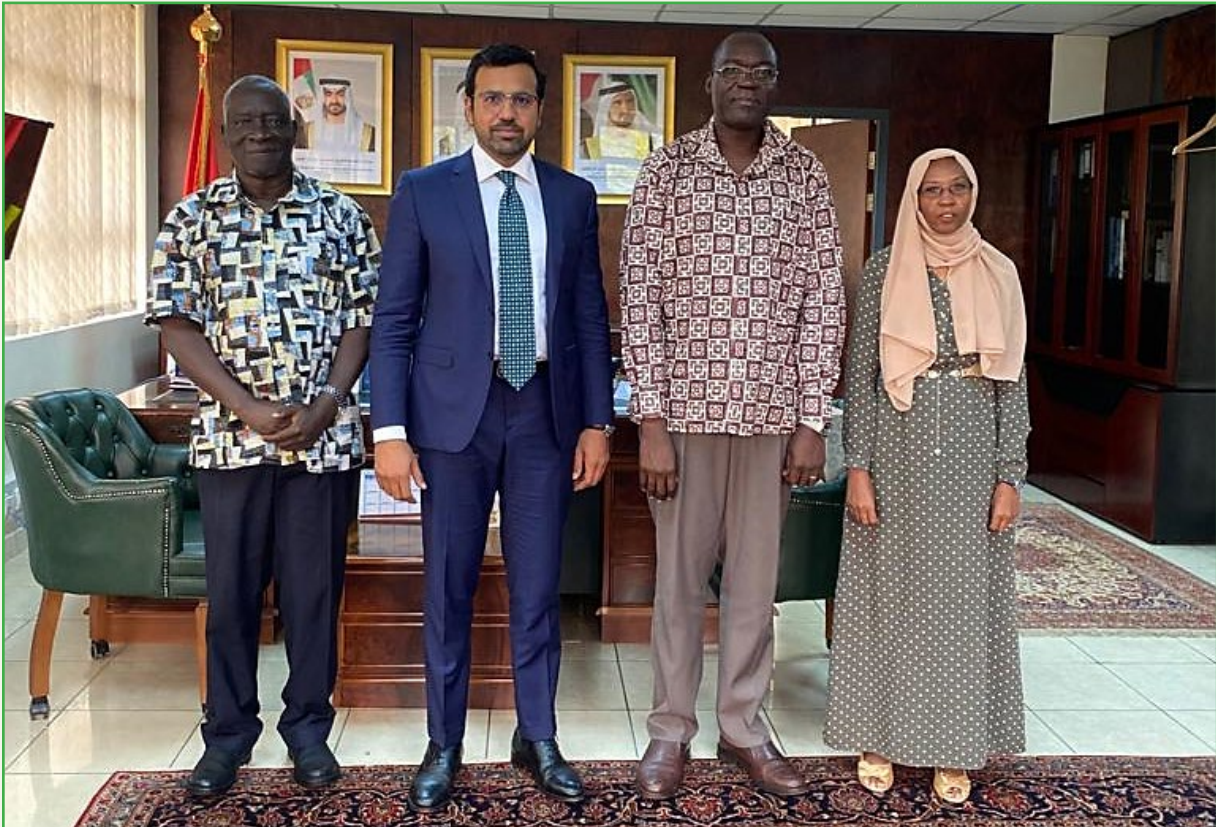
**R**UFORUM delegation composed of Prof Patrick Okori, the RUFORUM Executive Secretary, Prof. Adipala Ekwamu, the Former RUFORUM Executive Secretary and Ms. Nada Musa, the Technical Specialist-Knowledge Management, met with His Excellency Abdalla Hassan AlShamsi, the UAE Ambassador to Uganda. The meeting targeted to discuss and follow up on strengthening partnership between African and UAE Universities and development agencies in UAE with a focus on: Higher and

Basic Education and Agricultural Development in Africa, and livelihood improvement in rural communities in Uganda. The emphasis was to explore partnership in the areas of strengthening agri-food systems in Africa to serve both Africa and the Arab world. The other areas discussed included partnership to strengthen use of advanced digital technology in teaching and learning in rural schools in Uganda.

The Ambassador also expressed interest to explore support for basic education in

Uganda with a special focus on digital learning. The Ambassador also emphasized the role of Uganda as a strategic country in Eastern Africa Community to work with.

The UAE Ambassador urged for greater collaboration between Arab and African institutions to harness their natural resource base for sustainable development. This meeting is part of RUFORUM efforts to promote Afro-Arab partnership in the field of higher education, science, technology and innovation.



Group photo: (L-R) Prof. Adipala Ekwamu, the Former Executive Secretary of RUFORUM, H.E. Abdalla Hassan Obaid Hassan Alshamsi, the Ambassador of United Arab Emirates to Uganda, Prof. Patrick Okori, the current Executive Secretary of RUFORUM and Eng. Nada Sidigg Musa, the Technical Specialist for Knowledge Management at RUFORUM Secretariat

## News from Member Universities

### Prof. Suruma on 50 years at Mak, 8 years as Chancellor



Prof. Ezra Suruma who first joined Makerere University as a Lecturer in 1973 recently completed two four-year terms as Chancellor (2016-2023). He spoke to Mak News Magazine about his tenure

**Congratulations upon successfully completing your two terms as Chancellor. What would you say has been your most memorable experience?**

Thank you. I'd say the graduation ceremonies of course. That is where I take charge as Chancellor. It is one of my main functions, the other main function is appointment of Vice Chancellors, Deputy Vice Chancellors and Principals. As Chancellor, I'm a titular head; it's like the title of a book, so I am most visible during the graduation, which is a celebratory occasion, people are happy because they have completed their work and as I usually say in my speeches, when they finish their course they bring glory to themselves, their families and to God. And it is good to be on that occasion because people are enjoying and celebrating the glory of completing their task or their purpose.

But also the fact that we had a very peaceful period. During my time, I don't remember having any strike or anything. The University has been very peaceful and I am very happy about that. That is important.

**Kindly share with us what you set out to achieve when you took office as Chancellor.**

That's a good question. I did not apply for the job. So when I was appointed, I was happy to come back to be associated with the University and I hoped that the University would contribute increasingly to the economic development of Uganda, which I have been committed to all my working life. And I would like to think that indeed the University has.

The problem of course we have

is that of employment. That, we need to solve; we have graduates but are they working? Do they have the opportunity to work? That problem is not yet resolved. So I see that it is an outstanding problem and I think Makerere needs to make a contribution towards that problem.

**What would you say were the surprises during your term of office?**

Well, of course no one anticipated Covid-19; that was a shock for everybody and we confronted it. I think Makerere did very well in confronting it. There has been significant increase in Government funding for research. I salute Government for that. That is very very important. But of course there is a dramatic increase in the number of Universities in Uganda. Makerere has to continue to lead the way and show direction because most of them will be looking to Makerere for direction and the right things to do. Makerere remains a leader and it is important that they lead in the right direction.

**What can Makerere do to continue leading in the right direction?**

We are entering a very uncertain global economic and political period. So Makerere will have to really do work especially at the postgraduate level in terms of research in order to guide and influence the picture.

It is very complex and we need insights to help us to retain our independence, because we can lose our independence. So it is extremely important that our best brains are doing the necessary research. The priorities are very important. It

is important that our brains are focused on the right priorities in order to ensure a peaceful future of our country.

**What advice would you give to the next Chancellor of Makerere University?**

I think that it is important to resist the temptation to micromanage; to be too involved in the day-to-day affairs of the University. The Chancellor is a titular head, not the manager. Sometimes Chancellors are tempted to get involved in management. I was lucky that I was already engaged in Government in the President's Office and the Prime Minister's Office, I didn't have time to meddle. But someone else may be tempted if they are not as occupied as I was, and that may increase the prospect of conflict with Management.

**What advice would you give to the staff, students and alumni of Makerere University?**

Overall, I would appeal to everyone at the end of the day to remember that we are all brothers and sisters in one country and that we are at our best when we are living peacefully with one another. And so there is need to give and take, to make allowance for each other's faults, so that we can maintain peace and minimise conflict. It is very easy to conflict. It takes an extra grace to be able to say, 'wait a minute, can I restrain my anger and see what the problem is and how it can be resolved peacefully?' Even brothers fight but you try not to kill one another as members of one family. So that sense of responsibility is very important.

And we need it as a country because we can very easily



break out on racial, religious and tribal lines, and before you know it we are at each other's neck and blood is flowing through the streets.

We have to always remember, we want to build a peaceful country, and it is in everybody's interest. So how can we

enhance justice? How can we increase mutual understanding without fighting? Even people who are of a different tribe are your neighbours. God put them here; they may be a different tribe but they are your neighbours. You have to live with them. They are not enemies.

Any final remark you would wish to share?

Just to request all members of Makerere Community to forgive me where I have not fulfilled their expectations, to try and carry on from where I have left off peacefully and to be patriotic in building our country.



Left to Right: Mrs. Lorna Magara, Mrs. Specioza Suruma, Prof. Ezra Suruma, Prof. Barnabas Nawangwe, Prof. Henry Alinaitwe and other guests singing 'Amazing Grace' during the dinner on 20th December 2023

## New Appointments

### A scholar's journey: The appointment of Professor Wales Singini as Vice-Chancellor



30 June 2023 - The Mzuzu University Council announced that the President of the Republic of Malawi and Chancellor of Mzuzu University (MZUNI), His Excellency Dr. Lazarus McCarthy Chakwera, approved the appointment of Professor Wales Singini as the new Vice-Chancellor for Mzunl.

Professor Singini is one of the beneficiaries of a prestigious Doctoral and post-doctoral

grant by RUFORUM, with support from the Carnegie Cooperation of New York. This grant allowed him to focus entirely on his studies, and he channeled his energies into a groundbreaking PhD program in Aquaculture and Fisheries Sciences at Mzuzu University where he is entrusted with the highest academic leadership role.

Professor Singini took on leadership roles, embracing every opportunity to make a

positive impact. He served as the esteemed Head of the Department of Aquaculture and Fisheries Sciences, Dean of the Faculty and Director of Research.

As part of teaching, Professor Singini has supervised more than 20 PhD students in the fields of fisheries and aquatic science, transformative community development and

in environmental management at MZUNI and at external universities. Including Makerere University in Uganda, Texas Tech University in USA, University of Abomey Calavi in Benin, University of Eldoret in Kenya, University of Bukavu in DRC, University of Dakar in Senegal, Eduardo Mondlane University in Mozambique, Lilongwe University of Agriculture and

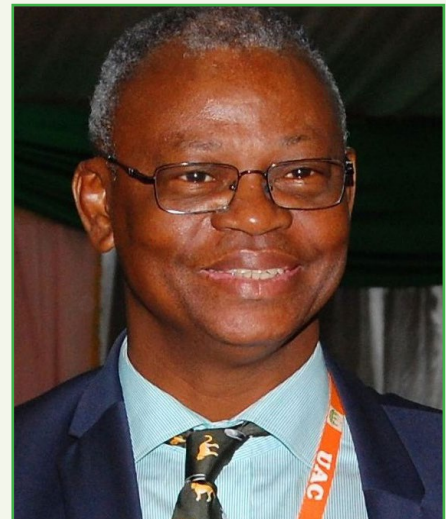
Natural Resources (LUANAR) and at Catholic University of Malawi (CUNIMA). He has also mentored eight (8) post-doctoral students at MZUNI and LUANAR.

RUFORUM Congratulates Prof. Singini upon his new role as the Vice Chancellor of Mzuzu University.

## Higher Education: Brice Sinsin makes his return

The Council of Ministers met this Wednesday, November 8, 2023. During the session several appointments were made. Among other appointments we can retain at the Presidency of the Republic the establishment of the ad hoc committee to support the implementation of reforms in the higher education sub-sector. This committee will be coordinated by the former rector of the University of Abomey Calavi, Professor Brice SINSIN, an esteemed member of the RUFORUM Network.

RUFORUM Congratulates Prof. Sinsin upon his new role.



Link: [https://peacefm.bj/article/96/enseignement-superieur-brice-sinsin-fait-retour?utm\\_source=RUFORUM+Mailing+List&utm\\_campaign=6415550fde-RUFORUM+Weekly+-+Vol.3+No.25\\_COPY\\_01&utm\\_medium=email&utm\\_term=0\\_1fcfb8a0b-6415550fde-347220834&ct=t\(\)&goal=0\\_1fcfb8a0b-6415550fde-347220834&mc\\_cid=6415550fde&mc\\_eid=ec3f142acc](https://peacefm.bj/article/96/enseignement-superieur-brice-sinsin-fait-retour?utm_source=RUFORUM+Mailing+List&utm_campaign=6415550fde-RUFORUM+Weekly+-+Vol.3+No.25_COPY_01&utm_medium=email&utm_term=0_1fcfb8a0b-6415550fde-347220834&ct=t()&goal=0_1fcfb8a0b-6415550fde-347220834&mc_cid=6415550fde&mc_eid=ec3f142acc)

## Renowned Agronomist and Forester, Professor Achille Ephrem Assogbadjo of the University Abomey Calavi in Benin has been awarded the Georg Forster Research Awards 2023



In a remarkable journey spanning over two decades, Professor Achille Ephrem Assogbadjo, an agronomist and forester, has dedicated his career to addressing the pressing issue of food security in African communities. Holding a PhD in Applied Biological Sciences from Ghent University in Belgium since 2006, Prof. Achille has emerged as a leading figure in the fields of conservation genetics, forest ecology, and ethnobotany. Currently serving as a Full Professor of Conservation Genetics, Forest Ecology, and Ethnobotany at the University of Abomey-Calavi, one of the RUFORUM member universities in Benin and he is a dedicated member of the RUFORUM Network, he also contributes as a visiting professor at prestigious institutions worldwide.

Prof. Achille, embarked on his

mission to tackle food security challenges in Africa during his university years. Recognizing the abundance of natural resources on the continent, he envisioned a pivotal role for non-timber forest products (NTFPs) in addressing this challenge. Consequently, since 2000, he has focused his research activities on NTFPs and orphan crops, aiming to unlock their potential in providing food and nutritional benefits for the people of Africa.

His research encompasses a broad spectrum, employing ethnobotanical and conservation genetics methodologies across diverse ecosystems, from natural settings to agroforestry and intensive farming practices. With a primary focus on NTFPs and neglected food crops, Prof. Achille has conducted extensive work on baobab to promote better nutrition and income for rural communities without imposing high investment costs. Over the years, Prof. Achille has secured 25 research grants and participated in 10 collaborative research projects from esteemed institutions such as the European Union, ACP Innovation Fund, and the International Tropical Timber Organization. His efforts align with the Malabo Declaration of the African Union on accelerated agricultural growth and the UN Sustainable Development Goals, particularly SDG 1 – No Poverty, SDG 2 – Zero Hunger, SDG 3 - Good Health

and Well-Being, and SDG 5 – Gender Equality. The impact of Prof. Achille's research extends beyond academic publications, as he actively contributes to the development of young African scientists. Over 500 graduate students have benefited from scholarships, fostering the next generation of experts dedicated to addressing food security challenges.

In line with the African Union's Science, Technology, and Innovation Strategy for Africa (STISA) 2024, his research aligns with the recommendations of the AU Committee of Ten Heads of States Championing Science, Technology, and Innovation in Africa (C10). Furthermore, his work contributes to national agricultural plans and compacts, as well as regional initiatives such as the ECOWAS Regional Partnership, CAADP compact and ECOWAS agricultural policy (ECOWAP).

The establishment of the Non-Timber Forest Products and Orphan Crops UNIT under the Laboratory of Applied Ecology (LEA) of the University of Abomey Calavi showcases his commitment to practical solutions. The unit is actively engaged in a legume breeding program focusing on orphan crops such as kerstings' groundnut, cowpea, and vegetable soybean (edamame). Prof. Achille and his team's efforts have had a tangible

impact on the baobab value chain in Benin, involving over 1000 people. The establishment of the research unit and the legume breeding program exemplify the on-the-ground application of Prof. Achille's research findings.

Through networking and collaboration, Prof. Achille has participated in over 150 international conferences and 20 training workshops worldwide. This extensive network has allowed him to contribute to numerous peer-reviewed papers,

books, and technical reports, showcasing the global reach and influence of his work.

In recognition of his outstanding contributions, Prof. Achille has received twelve international awards and recognitions. Looking to the future, he believes that international recognition, such as the Georg Forster Research Award, can further strengthen and expand his networks, paving the way for increased collaboration, student exchanges, and joint initiatives in the pursuit of sustainable food

security in Africa.

“My story is one of dedication, collaboration, and a relentless pursuit of solutions to address the critical issue of food security in Africa” said Prof. Achille. His work serves as an inspiration for scientists and policymakers alike, highlighting the transformative power of research in shaping a more secure and sustainable future for the continent.

Congratulations Professor Achille Ephrem Assogbadjo

## Webinar Article

# Experts call for a holistic regional agricultural agenda with clear policy frameworks that facilitate technology adoption and utilization in Africa

Experts from over 40 countries in Africa have called for a holistic regional agricultural agenda with clear policy frameworks that facilitate technology adoption and utilization in Africa. This was at one of the Webinar Series organized by the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) to discuss the state of adoption and utilization of digital technologies for agricultural productivity enhancement in Africa.

The RUFORUM Webinar on Harnessing Advances in the Delivery of Agricultural Technologies, is one of the Monthly Webinar Series

that bring together experts, advocates, policymakers, political leaders, researchers and other members in the world of academia to discuss the future of Africa's higher education amidst competitive and comparative changing societies.

Most African countries rely heavily on agriculture for food, raw material and employment as compared with the rest of the world. In Africa, agriculture contributes 20% of the Gross Domestic Product (GDP) compared to the world's average of 5%. The share of agriculture in Gross Domestic Product (GDP) of the African region has remained stable over the last 50 years compared to

the share of the other regions. The share of employment in agriculture is estimated at 50% for Africa compared to the world's average of about 30%.

In addition, about 80% of farmers in Africa are smallholder farmers with land holdings below two hectares. This underscores the unparalleled need for a favorable policy environment that promotes the adoption and utilization of improved technologies for increased agricultural productivity.

Speaking at the Webinar on 6th September 2023, Dr. Sadiki Kassim from National Agriculture Research Organization (NARO) Uganda

noted the need for African leaders to appreciate the role played by agriculture on the continent and thus judiciously promote crosscutting policies favorable for agricultural technology adoption.

According to him, there should be a shift at research and development institutions as well as Universities from “publish or perish” mode of career growth and assessment to a number of technologies effectively delivered in pathways.

In a presentation he made on the Policy and Regulatory Environment around the Adoption of Agricultural Technologies in Africa, Dr. Sadiki aligned the agricultural policy and regulatory needs along three segments; research, technology development and up scaling as well as outreaches and extension, with an emphasis to have policies at each segment to support the adoption process.

To him, the continent should have a policy that guides the setting of an impactful research agenda to ensure that relevant technologies and information are effectively disseminated and generated. He also noted the need to put in place National biotechnology and biosafety laws that guide and facilitate development, testing and scaling of novel technology products for adoption and utilization.

*“For effective technology delivery and diffusion, there is need for institutional frameworks on promotion and dissemination of technology; national laws and policies on extensions as well as favorable crosscutting policies.”* said Dr

Sadiki.

On technology development and upscaling, Dr. Sadiki recommended four policies areas;

1. Policies that guide the technology adaptation-policies that expose farmers, extension workers to technology and accelerate release and uptake of farmers preferred technologies
2. Policies that streamline and increase access to technologies by industry players, seed companies and communities to enable quality assurance, technology tracking and traceability, product stewardship and benefit sharing
3. Policies that guide investment on technology incubation and mechanization; involving private sector players, youth and women in skills development, technology and idea incubation, product development, branding, value addition and packaging.
4. Policies and guidelines on intellectual property management, technological transfer and commercialization suitable for private sector involvement and participation in a liberal free market economy.

At the same webinar, experts discussed the possible ways of harnessing digital technologies for agricultural adoption and utilization to sustainably increase productivity and consequently lead to inclusive social economic transformation in Africa.

In a presentation he made on Digital Technologies in delivery of Agricultural technologies

in Africa: Dr. Drake Mirembe, Lecturer at the School of Computing at Makerere University said that the main drive of using agricultural technologies is to access information and guide farmers’ decision making along the value chain. In Africa, the basic mobile phone and its associations remains a dominant digital technology mostly used by the family farmers on the African continent. In the same spirit, FM radios and community outreaches remain key as sources of information especially in rural areas where most of family farmers live. *“In areas with good internet connectivity, WhatsApp and other social media channels are becoming new platforms being used by the family farmers for peer learning, information sharing, advertising among others,”* he stated.

However, Dr. Tamubula Bulenzibuto Irene, Lecturer at Kyambogo University noted that while adopting improved, scale appropriate and eco-friendly agricultural technologies is essential for sustainable agricultural productivity, it has been discovered that some of these agricultural technologies with proven benefits have not been adopted by farmers. She attributes this to the different factors that shapes farmers perceptions towards adoption and utilization of some digital technologies and highlighted such factors as:

- Farmers’ knowledge and experiences about the technologies – information about the existence of the technology, how it works and what it can achieve forms the basis of positive or negative evaluation of the technology

- Characteristic of a farmer
  - *Personal characteristics such as age, gender*
  - Social characteristics including income, assets, education*
  - *Personality characteristics including; confidence independence, farmers position on social networks , connectedness, and frequency of interaction*
  - *External characteristics: environment (proximity to market, soil road conditions)*
- Social cultural characteristics: language, religion, norms and values; land tenure and access rights, access to extension services, access to credit
- Perceived advantage of the technology, these include relative advantage of the technology, compatibility, complexity, triability and observability.

Dr. Tamubula Bulenzibuto also said that since perception influences adoption decision, it is important that development of agricultural technologies use participatory approach which allow farmers to experiment with different adaptations methods that suit their local context. She also cited the need to have a system thinking approach on designing promotion strategies where various actors, networks and organizations work synergistically to support dissemination and use of agricultural technologies, underscoring involvement of farmers as critical actors in the dissemination process.

According to Dr. Isaac Kwasi Asante; an Agricultural Extension Specialist, there is need to redesign extension approaches to ensure communication and dissemination of technologies

in Africa. In his presentation on: Agricultural extensions in delivering technologies to farmers, Dr. Kwasi Asante, said that despite their diverse relevancy, several challenges have been traced with the traditional extension models available.

To him, the development and sustainability of agricultural production systems and institutional delivery depends on essential support from political and institutional factors. In addition, the technologies delivered through various methods including mass media, group, individual or face to face indigenous communication and nonverbal communication/ body language are faced with challenges such as appearance, posture, gesture and spatial position to communicate meaning.

*“Print and electronic media such as newspapers, TV, Radio and audio-visuals that help extension agents to reach many farmers simultaneously are faced with many challenges since majority of smallholder farmers cannot read and write. Agricultural extension farmers majority of which are public servants are neither motivated nor poorly trained on how to use communication techniques,”* he noted.

He therefore appealed to members to redefine agricultural extension to connote communication for development. In the same spirit Dr. Akwasi Asante called for the integration of ICT and modern digital technologies into the traditional extensions as a way improving the available measures of delivering information to farmers.

*“Capacity of agricultural extension agents should be developed on the application of ICTs. Extension content in local languages can be a strong driver of these new modern technologies and dissemination and application of digital technologies in extension should be prioritized to help combat the effect of climate change on agricultural production”* he said.

Discussing the processes, challenges, and opportunities of expounding on Commercialization of Agricultural Research Products in East Africa, Dr Antony Mwije-a lecturer at the Department of Agricultural Production Makerere University highlighted the need for East African countries to strengthen linkages between research institutions, companies and broader agricultural development programs.

*“Other areas to look at are; how to support development and usage of intermediaries to bridge the gap between research and businesses; design programmes that recognize financial and time horizon realities of commercialization and secure donor funds to allow co-creation and co- development,”* he said.

The Director ICT of Mountain of the Moon University in Uganda Dr. Francis Otto urged for the Public Private Partnerships as a pertinent way to improve African agriculture. To him, Agriculture public private partnerships have the potential to transform the production oriented agricultural sector of African countries towards a more market oriented modernized agricultural food sector.

*“For those to be realistic,*

*all stakeholders including business, government, smallholder farmers and civil society need to understand their role and make meaningful commitments in terms of action and investments. Technologies to be adopted must be realistic,*

*appropriate, relevant and easy to manage,” he said.*

The RUFORUM Webinar on Harnessing Advances in the Delivery of Agricultural Technologies was chaired by Dr. Florence Nakiyiwa, the

Deputy Executive Secretary of RUFORUM and moderated by Dr. Helen Kongai Biruma, a Lecturer at the Department of Agribusiness and Extension at Busitema University Uganda.



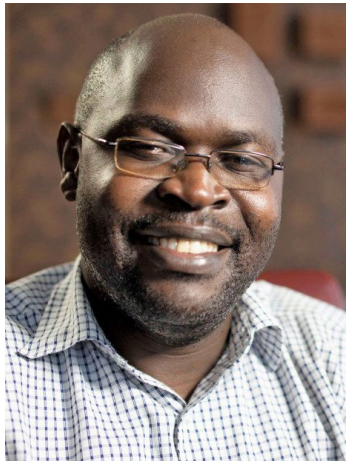
Dr. Florence Nakiyiwa



Dr. Anthony Mwijje



Prof. Festus K. A. Frempong



Dr. Drake Mirembe



Dr. Otto Francis



Dr. Irene Tamubula



Dr. Sadik Kassim



Dr. Helen Kongai

## World University Ranking 2023

# Twenty eight (28) RUFORUM Member Universities ranked among top 100 universities in Africa for employability

Twenty eight (28) universities under the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), have been ranked among the top 100 universities in Africa for employability, according to the latest [Times Higher Education World University Rankings for 2024](#).

The [rankings](#), encompassing 1,904 universities from 108 countries and regions, are based on the innovative WUR 3.0 methodology. This methodology comprises 18 meticulously calibrated performance

indicators, evaluating institutions across five critical areas: teaching, research environment, research quality, industry engagement, and international outlook.

The rankings, which analyzed an extensive dataset comprising over 134 million citations from 16.5 million research publications, also incorporated insights from 68,402 scholars worldwide. The robust methodology and comprehensive evaluation process underscore the credibility and significance of the rankings.

In addition to celebrating the individual achievements of RUFORUM Member Universities, the rankings confirm the broader vision to contribute to the advancement of agricultural and tertiary education in Africa. RUFORUM's initiatives will continue to play a pivotal role in shaping the future of agricultural education and research on the continent, fostering a new generation of skilled professionals ready to address the challenges and opportunities of the agricultural sector.

**Table showing the top 100 universities ranked in Africa and the ones with the green highlight are the RUFORUM Member universities**

Rank	University	Country	Female: male Ratio
301–350	Stellenbosch University	South Africa	54 : 46
501–600	University of KwaZulu-Natal	South Africa	60 : 40
	University of Pretoria	South Africa	59 : 41
601–800	University of Cape Coast	Ghana	33 : 67
	University of the Western Cape	South Africa	61 : 39
801–1000	Cairo University	Egypt	60 : 40
	University of the Free State	South Africa	63 : 37
	Makerere University	Uganda	46 : 54
1001–1200	Ain Shams University	Egypt	52 : 48
	Federal University of Technology Akure	Nigeria	26 : 74
	University of Ghana	Ghana	49 : 51
	Jimma University	Ethiopia	38 : 62
	Kwame Nkrumah University of Science and Technology	Ghana	38 : 62
1201–1500	University of South Africa	South Africa	74 : 26
	Bayero University	Nigeria	35 : 65
	Botswana International University of Science and Technology (BIUST)	Botswana	33 : 67
	Universidade Eduardo Mondlane	Mozambique	41 : 59
	University of Mauritius	Mauritius	54 : 46



	University of Nairobi	Kenya	24 : 76
	University of Namibia	Namibia	63 : 37
	University of Nigeria Nsukka	Nigeria	46 : 54
	University of Venda	South Africa	58 : 42
	University of Zambia	Zambia	39 : 61
	University of Zimbabwe	Zimbabwe	42 : 58
1501			
	University of Dar es Salaam	Tanzania	47 : 53
	University for Development Studies	Ghana	43 : 57
	Nnamdi Azikiwe University	Nigeria	46 : 54
	University of Port Harcourt	Nigeria	35 : 65

## World University Ranking 2024

# Ninety seven (97) RUFORUM Member Universities Ranked among top Universities in Webometrics Ranking 2024

**N**inety seven (97) Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) member universities have been ranked among the top universities in the latest Webometrics Ranking for the year 2024.

The Webometrics Ranking

is configured to promote Open Access to the knowledge generated by the Universities highlights their web presence, visibility, impact and digital footprint. It is an affirmation of the influence of Member Universities in the academic sphere. It does provide a glimpse into scholarly communication and

collaboration, off-campus distance learning, and acts as the universal showcase for attracting talent, funding and other resources.

RUFORUM congratulates Member Universities that made it among the top universities in Africa.

Ranking	World Rank	University	Country	Impact Rank*	Openness Rank*	Excellence Rank*
3	444	<a href="#">Stellenbosch University</a>	South Africa	694	334	500
4	447	<a href="#">University of Pretoria</a>	South Africa	659	492	499
5	600	<a href="#">University of Kwazulu Natal</a>	South Africa	1260	548	515
7	801	<a href="#">University of South Africa</a>	South Africa	1266	972	848
8	934	<a href="#">University of the Western Cape</a>	South Africa	1283	923	1148
9	1034	<a href="#">University of Nairobi</a>	Kenya	875	796	1727
10	1101	<a href="#">University of Ghana</a>	Ghana	2121	792	1156
11	1103	<a href="#">University of the Free State</a>	South Africa	2510	1089	962
12	1104	<a href="#">Makerere University</a>	Uganda	1752	1219	1203
17	1384	<a href="#">Kwame Nkrumah University of Science &amp; Technology</a>	Ghana	3667	980	1266
18	1405	<a href="#">University of Port Harcourt</a>	Nigeria	549	1496	3092
19	1413	<a href="#">University of Nigeria</a>	Nigeria	3903	883	1286
25	1861	<a href="#">Kampala International University</a>	Uganda	712	1729	3800
26	1995	<a href="#">University of Dar Es Salaam</a>	Tanzania	3350	1435	2400
27	2004	<a href="#">University of Cape Coast</a>	Ghana	5360	1293	1836
31	2118	<a href="#">Federal University of Technology Akure</a>	Nigeria	7234	1183	1611

32	2142	<a href="#">Jomo Kenyatta University of Agriculture and Technology</a>	Kenya	2767	1505	2893
33	2168	<a href="#">Kenyatta University</a>	Kenya	2183	1473	3256
34	2170	<a href="#">University of Zimbabwe</a>	Zimbabwe	4799	2116	2092
35	2227	<a href="#">Jimma University</a>	Ethiopia	5678	1948	1978
36	2326	<a href="#">Federal University of Technology Minna</a>	Nigeria	4278	1450	2678
38	2374	<a href="#">Egerton University</a>	Kenya	1591	2826	3711
39	2390	<a href="#">University of Fort Hare</a>	South Africa	5577	1819	2344
40	2436	<a href="#">University of Zambia</a>	Zambia	5270	1589	2575
42	2505	<a href="#">University for Development Studies</a>	Ghana	6144	1996	2368
43	2566	<a href="#">University of Mauritius</a>	Mauritius	6300	2255	2372
44	2569	<a href="#">Bayero University Kano</a>	Nigeria	8671	1559	1975
45	2590	<a href="#">Nnamdi Azikiwe University</a>	Nigeria	7623	1312	2329
46	2616	<a href="#">University of Rwanda</a>	Rwanda	5324	3472	2496
47	2619	<a href="#">Moi University</a>	Kenya	4198	1912	3163
48	2652	<a href="#">Université Cheikh Anta Diop de Dakar</a>	Senegal	1236	8367	2600
49	2659	<a href="#">Sokoine University of Agriculture</a>	Tanzania	5091	1306	3115
51	2682	<a href="#">Mekelle University</a>	Ethiopia	8954	2003	2003
54	2756	<a href="#">University of Limpopo</a>	South Africa	6397	2156	2719
55	2765	<a href="#">Université d'Abomey Calavi</a>	Benin	6045	2770	2700
57	2818	<a href="#">University of Botswana</a>		5298	4172	2700
58	2832	<a href="#">Bahir Dar University</a>	Ethiopia	10797	1976	1928
60	2961	<a href="#">University of Venda</a>	South Africa	7049	2293	2875
<b>62</b>	<b>3027</b>	<b><a href="#">Mbarara University of Science and Technology</a></b>	<b>Uganda</b>	<b>6140</b>	<b>3034</b>	<b>3092</b>
68	3145	<a href="#">Université de Dschang</a>	Cameroon	10806	3014	2220
69	3156	<a href="#">Hawassa University (Debu University)</a>	Ethiopia	11044	2984	2192
70	3158	<a href="#">Haramaya University (Alemaya)</a>	Ethiopia	9793	2895	2474
72	3219	<a href="#">Botswana International University of Science &amp; Technology</a>	Botswana	9403	2525	2739
75	3304	<a href="#">Federal University of Technology Owerri</a>	Nigeria	7893	1723	3418
82	3521	<a href="#">Maseno University</a>	Kenya	5134	2173	4365
83	3538	<a href="#">University of Education Winneba</a>	Ghana	8197	2998	3441
84	3538	<a href="#">University of Namibia</a>	Namibia	3607	8367	2866
85	3547	<a href="#">University of Buea</a>	Cameroon	10304	2819	3017
88	3598	<a href="#">Federal University of Agriculture Abeokuta</a>	Nigeria	13202	1391	2829
90	3628	<a href="#">University of Malawi</a>	Malawi	12005	5290	2279
96	3905	<a href="#">Midlands State University</a>	Zimbabwe	7269	3137	4225
97	4048	<a href="#">Université de Ngaoundéré</a>	Cameroon	10649	5608	3186

## News Briefs



The Minister of State for Higher Education, Hon. Dr. John C. Muyingo signing the RUFORUM Charter.



Prof. Eriabu Lugujo, the Vice Chancellor of Ndejje University, pays a courtesy visit to the RUFORUM Secretariat.

## Team Building Activities



RUFORUM attentively listening to instructions from the coach.



RUFORUM staff participating in the ball passing game



Above: Teams chanting their team names, ready to battle each other. Below: The game is on.



Group games: RUFORUM Staff filling a pipe with water.



**Team Work: RUFORUM Staff taking the ball to the finishing line**

# Gift exchanges






## The 2<sup>nd</sup> RUFORUM TRIENNIAL CONFERENCE

#RUFtriennial24

**THEME:**

“Operationalising Higher Agricultural Education and Research Ecosystems for Innovation, Industrialisation and Economic Development in Africa: A Call for Action”



**CONFERENCE DATES**




Pre-Events 5-9 AUG 2024	Main Event 12-16 AUG 2024
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**Venue: Windhoek, Namibia**

Hosted by the Government of Namibia and RUFORUM Member Universities in Namibia



For more info, visit: <https://www.ruforum.org/Triennial2024/>

## Links to Knowledge Products

1. RUFORUM Institutional Repository can be accessed via [repository.ruforum.org](https://repository.ruforum.org)

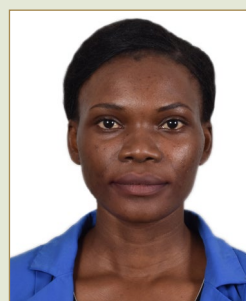
### In the Repository

- Theses/ Dissertations from RUFORUM sponsored students
  - Research Briefs, TAGDev Resources, Policy Briefs, News letters, Book chapters
  -
2. The Impact platform accessed via [www.ruforum.org](http://www.ruforum.org)
  3. The African Journal of Rural Development (AFJRD)  
[afjrdev.org](http://afjrdev.org)

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