

Makerere University Council Commends CAES for Outstanding Research & Innovations

Makerere University Council has commended the College of Agricultural and Environmental Sciences (CAES) for the outstanding research and innovations produced by the College. On 28th February 2023, eight University Council members led by the Chairperson, Mrs. Lorna Magara held a meeting with CAES leadership to get acquainted with the College and establish if the College's mandate is linked to the vision, mission and Strategic Plan of the University. The current Strategic Plan (2020-2030) aims to transform Makerere into a research-led University, responding to national, regional and global development challenges, as well as contributing to global knowledge generation. The University also aims to produce the desired human capital, by creating an appropriate environment and support for students to meet their academic and professional aspirations. In line with this, the University intends to make teaching and learning all-inclusive integrating gender and special needs requirements. The University also intends to enhance partnerships with industry, the community and international institutions.

During the interaction with University Council members, CAES Management led by the Principal, Prof. Gorettie Nabanoga showcased some of the outstanding innovations at the College including the Soil Test Tit, the soybean varieties bred at the College, urea molasses multi-nutrient blocks meant to ease cattle feeding during dry seasons and the Enviroewatch App for increased community surveillance of environmental degradation and restoration.

The Principal briefed the Council members on all research and innovations conducted at the College, the status of research institutes; teaching and learning; laboratories; staff recruitment, promotions and development; and the condition of the College infrastructure. She informed the team on the move by the College to rejuvenate Makererere University Agricultural Research Institute Kabanyolo (MUARIK) production for commercialization. The Principal also briefed the Council members on the College Pact launched on 9th August 2022 with the aim of causing transformation in teaching and learning, research and innovation, as well as knowledge transfer partnerships. She informed the team that the College leaders and members of staff committed to pursue the 'Innovation Intentional' agenda enshrined in the Transformational Pact. The Principal appealed to the University Council to consider taking up the wage bill of contract staff paid by the College and to support the completion of the Food Technology and Business Incubation Centre Phase III Building under construction. She also requested for support towards the

refurbishment of the laboratories at the College noting that most of them are in deplorable condition and negatively impacting practical training. The Principal called for the institutionalization of the management of all incubation centres at the University.

The team from Makerere University Council that visited CAES

1. Mrs. Lorna Magara – Chairperson
2. Rt. Hon. Daniel Fred Kidega – Vice Chairperson
3. Mr. Edwin Karugire – member
4. Mr. George Bamugemereire -member
5. Mr. Bruce B. Kabaasa – member
6. Dr. Sengozi E.D – member

Secretariat

1. Mr. Simon Kizito – Deputy University Secretary

Key research projects/innovations generated at CAES

- Makerere University Soil Test Kit – This can provide rapid soil assessment which can inform soil requirements to improve soil management, crop yields and incomes for farmers.
- Disease, pest and climate stress tolerant cow peas, and sorghum under the Makerere University Regional Centre for Crop improvement (MaRCCI).
- Drought, disease and high yielding varieties with short maturity periods Mak Soybeans - Maksoy 1N, Maksoy 2N, Maksoy 3N and Namsoy 4M 4N and 5N and 6N providing an affordable source of protein under the and Soybean Improvement and Development (MakCSID) crop breeding programmes.
- The bio-fertilizer formulations to unlock crop productivity for improved food security.
- Production and promotion of protocols for Banana Tissue Culture for quick multiplication and disease control to improve yields.
- Value addition on Sweet Potato-Sorghum enterprises for improved L livelihoods in Uganda.
- Pig artificial insemination and elite genetics to improve farmer's income.
- Provision of alternative source of protein for poultry and fish feeds through rearing blue flies, maggots and earthworms to supplement silver fish.
- Production of a livestock milk booster- produced from sugarcane industrial wastes to mitigate malnutrition, extreme hunger and poverty

through improved milk production, nutrition and improved daily cash flow among farmers.

- Promotion and utilization of the mobile fruit factory for juice extraction and value addition.
- Development of a three wheeled multipurpose farmers' tractor, MV Mulimi- able to thresh maize, pump water from a depth of 7m to a height of 33m, plough gardens, transport 20 adults and their goods over a reasonable distance, as well as charge a mobile phone.
- Automated the Communal Hand Water Pumps to eliminate COVID-19 Transmission (Mak-Nayi).
- Green low-cost Touch-less Hand wash Technology (TW-20 Kit) for public shared spaces
- Refractance Window Drying Technology (RWDT) for production of high quality bio-products adapted to common fruits, vegetables and herbs, for example mangoes, pineapple, jackfruit, carrots and moringa.
- Designed and developed an automated spray drier for egg powder production for use in bakery industries of Uganda.
- The KeBERA ICT based solution to detect inorganic contaminants as well as mycotoxins in food.
- Students have been involved in the production of yogurts, value addition to produce snacks from sweet potatoes, bananas and sorghum.
- Establishment of a Botanical Garden at MUARIK. The Botanical Gardens will cover 30 acres of MUARIK land. This is one of the College initiatives geared towards the protection, conservation and recreation of ecosystems. The gardens will also be used for teaching and research.
- Introduction of 24 new sweet potato varieties on the Ugandan Market.
- The Sustainable Off-grid solutions for Pharmacies and Hospitals in Africa (SophiA) Project to Aid Remote Health Facilities. It is a 4-year multi-disciplinary project commissioned in December 2021. SophiA aims at improving health service delivery in remote areas of Africa through provision of electricity to health facilities, preservation of medicine, water purification and improvement of hospital room temperatures in remote areas.
- The FLYGene Project -Makerere University College of Agriculture and Environmental Sciences (CAES), in partnership with AARHUS University, ICIPE, University of Nairobi, and Marula Proteen Limited, is undertaking a research project titled FLYGene (Sustainable and efficient insect production for livestock feed through selective breeding). FLYGene is a new project funded by the Danish Ministry of Foreign Affairs with the overall aim to enable the implementation of selective

breeding of the Black Soldier Fly (BSF) for improved livestock feed availability in Kenya and Uganda by generating new knowledge of insect genetics, genomics and phenomics.

- CAES is also taking lead in promoting climate smart agriculture as a measure to boost food security.