MAKERERE UNIVERSITY

COLLEGE OF NATURAL SCIENCES (CoNAS)

ANNUAL REPORT 2024

MISSION, VISION AND VALUES

OUR VISION

To be a thought leader of knowledge generation for societal transformation and development

OUR MISSION

To create and impart knowledge in basic and applied sciences to society through training, research and extension services for development

OUR VALUES

The College in pursuit of its mandate is guided by the five core values of Makerere University listed below;

- Accountability
- Professionalism
- Integrity
- Respect
- Inclusivity

LIST OF ACRONYMS

BETB	Bachelor of Science in Ethnobotany
BSBT	Bachelor of Science in Biotechnology
BSC	Bachelor of Science
BSCB	Bachelor of Science in Conservation Biology
BSFA	Bachelor of Science in Fisheries and Aquaculture
BSIC	Bachelor of Science in Industrial Chemistry BSPC Bachelor of Science in Sports Science
BSPG	Bachelor of Science in Petroleum Geosciences and Production
CoNAS	College of Natural Sciences
CoTRA	Collaborative Training in Fisheries & Aquaculture in East, Central and Southern Africa
DRIAR	Dry-Rifting in the Albertine-Rhino Graben
EU	European Union
EAUMP	Eastern Africa Universities Mathematics Programme
ISP	International Science Programme
Mak-RIF	Makerere University-Research and Innovations Fund
MSc.	Master of Science
MUELE	Makerere University E-learning Environment
NMC	National Mathematics Contest
NORAD	Norwegian Agency for Development Cooperation
ODEL	Open Distance and E-learning
PMB	Plant Sciences, Microbiology and Biotechnology
SBS	School of Biosciences
SPS	School of Physical Sciences
ZEFS	Zoology, Entomology and Fisheries Sciences,

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COLLEGE LEADERSHIP

Prof. Winston Tumps Ireeta
Principal

Prof. Juma Kasozi
Deputy Principal

DEANS

Prof. Michael Owor
Dean, School of Physical Sciences

Prof. Arthur Tugume
Dean, School of Biosciences

HEADS OF DEPARTMENT

Dr. Denis Okello
Head, Dept. of Physics

Dr. Emmanuel Tebandeke
Head, Dept. of Chemistry

Dr Ismail Mirumbe
Head, Dept. of Mathematics

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Dr. Jamilu Edrisa Ssenku
Head, Dept of Plant Sciences Microbiology & Biotechnology

Dr. Bernadette Nakabazzi
Head, Dept of Exercise and Sports Science

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Head, Dept of Biochemistry and Systems Biology

COLLEGE ADMINISTRATORS

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Registrar, School of Biosciences

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Registrar, School of Physical Sciences

Mr. Abias Asasira
Chief Custodian

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PRINCIPAL'S MESSAGE

It is with great pride that we present the 2024 Annual Report for the College of Natural Sciences (CoNAS) at Makerere University.

2024 was a remarkable year of achievements, with impactful contributions to the advancement of science. In this year, we celebrated the exceptional success of our student, Mubiru Enock Joel, who was recognized as the best student in the Sciences at the 75th Graduation Ceremony. Mubiru graduated with an outstanding CGPA of 4.91 in Mathematics and Physics. CoNAS also saw the successful graduation of 310 students across various degree programmes, re¬flecting our commitment to nurturing talent in the sciences. In addition, CoNAS continued to make strides in fostering global collaboration. Prof. Leif Abrahamsson was awarded an Honorary Doctorate of Science for his invaluable contributions to mathematics education in East Africa.

This Annual Report highlights a series of ground-breaking research initiatives aimed at addressing pressing challenges within Uganda and Africa at large. Through innovative solutions and collaborative efforts, our research teams have made significant strides toward improving waste management, enhancing food security, and advancing sustainable practices across various sectors. Notably, the Drive to Improve Waste Management in Uganda tackles the persistent challenge of waste disposal in agro-processing industries, advocating for the adoption of cutting-edge waste treatment technologies. By promoting resource recovery and waste-to-energy systems, our researchers are working towards a cleaner, more sustainable future for Uganda.

Additionally, the assessment of Makerere University's suitability to host the Regional Centre of Excellence in Fisheries and Aquaculture reflects our commitment to fostering expertise and leadership in sustainable fisheries. With the backing of the African Union, this evaluation brings us one step closer to advancing Africa's aquaculture capabilities. Through initiatives like the INNOECOFOOD Project, we are addressing food security and nutrition gaps by empowering local farmers and communities with innovative tools to produce nutritious fish, and insect-based food products. Moreover, leveraging poultry by-products in fish feed formulation illustrates our dedication to cost-effective, locally sourced solutions for the aquaculture sector, with the potential to significantly reduce feed costs and boost production.

The BioGOLD project, funded by the Austrian Development Cooperation, marks a significant step in mitigating the environmental impact of mercury contamination in Uganda's gold

mining regions. Our work on African swine fever (ASF) seeks to unlock potential vaccine candidates to control this devastating disease that impacts Uganda's smallholder pig farmers. Furthermore, our ongoing efforts to improve public health awareness through the launch of the e-Resources for Health website and the introduction of health initiatives such as aerobics sessions for staff emphasize the importance of preventative health measures in Uganda. The collaboration with Parliament on the Alcoholic Drinks Control Bill further underscores our role as a think-tank contributing to public health policies.

Our commitment to improving education is reflected in the study addressing the challenges of Biology performance in Uganda's secondary schools. By identifying key factors affecting student performance, we are working to shape the future of science education in the country.

Through these initiatives, CoNAS remains at the forefront of research and innovation, making tangible contributions to the development of Uganda and the wider African continent.

We are incredibly proud of the exceptional achievements of our staff and students. Through their dedication, passion, and hard work, many have earned prestigious awards, recognitions, and appointments, underscoring their commitment to advancing research, teaching, and community development. We applaud the remarkable researchers who were honoured with Senior, Mid-Career, and Early Career Researcher Awards, as well as the distinguished educators recognized for their outstanding teaching contributions. We also take special pride in Dr. Tugume Patience's achievement in securing the OWSD Early Career Fellowship, which strengthens her research skills. Additionally, we congratulate Prof. Esezah Kakudidi, Dr. Godwin Anywar, Prof. Eric Sande, and Ms. Juliet Zake for the well-deserved honours and appointments.

We extend our heartfelt gratitude to the Government of Uganda and our development partners for their continued support towards our learning and research initiatives.

As we look toward the future, we remain committed to nurturing the next generation of scientists, researchers, and thinkers who will lead us into a brighter, more sustainable world. We are excited for what lies ahead, as we build on the progress we've made and continue to inspire scientific exploration that will change the world.

I invite you to explore the highlights and milestones within this report, as they represent the collective efforts of a vibrant and dynamic community. Together, we continue to set the standard for excellence in the natural sciences.

As We Build for the Future.

Prof. Winston Tumps Ireeta
Principal, CoNAS

1 INTRODUCTION

The College of Natural Sciences (CoNAS) is one of the 9 constituent colleges of Makerere University, dedicated to advancing scientific knowledge and education in Uganda. Comprising two schools and seven departments, CoNAS offers cutting-edge research and academic programs across diverse fields, including chemistry, physics, mathematics, and biological sciences. The College is committed to nurturing innovative thinkers and leaders who can tackle the complex challenges of today's world through scientific exploration and discovery. With a long-standing tradition of academic excellence, CoNAS plays a central role in shaping Uganda's scientific and technological future. It fosters a culture of critical thinking, problem-solving, and sustainable development. The College's distinguished faculty, state-of-the-art laboratories, and collaborative research initiatives continue to inspire and develop world-class professionals who make significant contributions to both national and global progress.

This edition of the report highlights the activities and achievements of 2024, aligned with the University's strategic focus on Innovative Teaching and Learning, Research, Innovations and Technology Transfer, and Strategic Engagement and Partnerships.

2 TEACHING AND LEARNING

2.1 CoNAS Students enrollment 2024/2025

COLLEGE /LEVEL / STUDENT CURRENT YEAR	FEMALE	MALE	GRAND TOTAL
CoNAS	**360**	**835**	**1195**
BACHELORS	**315**	**635**	**950**
YEAR 1	141	247	388
YEAR 2	119	208	327
YEAR 3	31	150	181
YEAR 4	24	30	54
MASTERS	**39**	**179**	**218**
YEAR 1	24	110	134
YEAR 2	15	69	84
DOCTORATE	**6**	**21**	**27**
YEAR 1	1	7	8
YEAR 2	2	7	9
YEAR 3	2	3	5
YEAR 4	1	4	5

2.2 CoNAS graduates 2024

NO. FEMALE	MALE	TOTAL
PhD graduates		
1	11	12
MSc graduates		
12	23	35
Undergraduates		
79	205	284

2.3 Graduation statistics

CoNAS presented 331 graduands, 92 female and 239 male at the 74th graduation ceremony held on 29th January 2024. Of these, 12 graduated with PhDs (1female, 11 male), 35 with MSc (12 female, 23 male) and 284 with BSc (79 female, 205 male).

2.3 Graduation statistics

No	Programme	F	M	Total
1.	PhD	1	11	12
Masters programmes				
1.	Master of Science in Zoology	4	6	10
2.	Master of Science in Botany	1	2	3
3.	Master of Science in Physics	2	6	8
4.	Master of Science in Petroleum Geosciences	2	1	3
5.	Master of Science in Mathematics	1	1	2
6.	Master of Science in Chemistry	1	3	4
7.	Master of Science in Biochemistry	1	4	5
		12	23	35
Undergraduate Programmes				
1.	Bachelor of Science	21	69	90
2.	Bachelor of Science in Biotechnology	8	28	36
3.	Bachelor of Science in Conservation Biology	5	8	13
4.	Bachelor of Science in Fisheries and Aquaculture	8	22	30
5.	Bachelor of Science in Industrial Chemistry	20	27	47
6.	Bachelor of Science in Petroleum Geoscience and Production	13	45	58
7.	Bachelor of Sports Science	4	6	10
		79	205	284

Table 3: 74th Graduation statistics

2.4 CoNAS PhD graduates

No.	Name	Gender	Department	Thesis title
1.	Abubakar Sadik Mustafa	M	Plant Sciences, Microbiology and Biotechnology	ELISA-based quantification and role of callose in the development of banana Xanthomonas wilt disease in banana
2.	Anguzu Collins	M	Mathematics	Mathematical Methods for Computing Centrality Measures Based on Powers of the Adjacency Matrix for Large Networks
3.	Biryomumaisho Justus Murokore	M	Biochemistry	Aflatoxin Exposure in Southwestern Uganda and Amellorative Effects of Selected Medicinal Plants in Induced Aflatoxicosis in Wistar Rats
4.	Bwayo Edward	M	Physics	Characterization of Optical Parameters of Zinc Sulphide and Silver Metal Film Coated on Glass at Different Deposition Angles
5.	Loum Janani	M	Chemistry	Phytochemical Profiling Optimization of extraction and Application of Natural dyes from Selected Indigenous Plant Species in Uganda
6.	Masika Fred Bwayo	M	Plant Sciences, Microbiology and Biotechnology	Mollecular Characterization and Incidence of Viruses Affecting Watermelon and Pumpkin Production in Uganda
7.	Nagayi Kalule Jane Yawe	F	Zoology, Entomology, and Fisheries Sciences	Physiological and Growth response of Oreochromis Esculentus Populations to different Temperature regimes: Implications for Species' Conservation and Aquaculture Management
8.	Ochora Ongeri Douglas	M	Plant Sciences, Microbiology and Biotechnology	Antiplasmodial Activities of Extracts and Pure Compounds from Securidaca longipedunculata fresen (polygalaceae)
9.	Olokotum Mark	M	Zoology, Entomology, and Fisheries Sciences	The Dynamics of Cyanobacteria and Potential Threats of Cyanotoxins in Uganda: A case of Murchison Bay and Napoleon Gulf, Northern Lake Victoria
10	Oloya Benson	M	Chemistry	Phytochemistry Anti-mycobacterial activity, and Acute toxicity of selected plant species used for treatment of Tuberculosis in Uganda
11.	Ssebunjo Wycliff	M	Mathematics	Brain Tumor Origin Localization via Iterative Methods
12.	Walusansa Abdul	M	Plant Sciences, Microbiology and Biotechnology	Drug-resistant Bacterial Contamination and Efficacy of Selected Herbal Medicines sold in Kampala City, Uganda

Table 5 – PhD Graduates

2.5 PhD Defenses 2024

No.	Name	Department	Thesis title	Date of Defense
1.	Mr. Habakwiha Vianney	Physics	Estimation of Radiological Effects and Modeling Radionuclide Transfer to Milk and Fish in Kisoro District, South-western Uganda	22nd February 2024
2.	Mr. Makonzi Brian	Mathematics	Computing the Artin Component using Reconstruction Algebras	5th March 2024
3.	Ms. Mbabazi Ruth	Chemistry	Carbon dioxide-epoxide copolymerization using supported zinc catalysts	7th March 2024
4.	Mr. Kigozi Moses	Chemistry	Conversion of selected plastic waste into carbon nanomaterials for application in the absorption of carbon dioxide and energy storage	12th March 2024
5.	Ms. Betty Kiwumulo Nabiyonga Kirenga	Mathematics	Mathematical Models for the Dynamics of Asthma Development: Effect of Immunological, Environmental and Genetic Determinants	25th April 2024
6.	Ms. Caroline Namanya	Mathematics	Pure Braids and Group Actions from 3-fold Flops	19th June 2024
7.	Mr. Muhumuza Cosmas	Mathematics	Mathematical Models for the Transmission Dynamics of Fowl Pox Disease with Seasonality and Control Measures	12th July 2024
8.	Mr. Arop Deosborns Martin	Mathematics	Optimal Actuator Design and Placement for a Linear Wave Equation	18th July 2024
9.	Mr. Ogweng Peter	Zoology, Entomology and Fisheries Sciences	Innovative approaches to managing livestock diseases in Uganda: A case of African Swine Fever"	14th November 2024
10.	Betty Akwongo	Plant Sciences, Microbiology and Biotechnology	Bioactivity and Safety of Medicinal Plants used in the Management of Candidiasis in Pader District, Northern Uganda	5th December 2024
11.	Ms. Carol Kawuma	Plant Sciences, Microbiology and Biotechnology	Distribution, Molecular and Morphological Characterisation of the Leptostemonum Clade of Genus Solanum (Solanaceae) in Uganda	17th December 2024
12.	Mr. Duncan Mutiso Chalo	Plant Sciences, Microbiology and Biotechnology	Anti-infective Activity, Phytochemistry and Cytotoxicity of Dalbergia Melanoxylon Guill. & Perr and Ormocarpum Sennoides SSP. Zanzibaricum Brenan & J.B. Gillett	19th December 2024

Table 6: PhD defenses

2.6 75th Graduation: CoNAS presents the best student in the Sciences

Mubiru Enock Joel, student at the College of Natural Sciences emerged the best in the Sciences at Makerere University. He graduated on 14th January 2025 with a CGPA of 4.91 in the Bachelor of Science in Mathematics and Physics. Overall, the College of Natural Sciences (CoNAS) presented 310 students for the award of degrees of Makerere University at the 75th graduation ceremony. Of these, 14 graduated with PhD (5 female 9 male), 36 MSc (10 female and 26 male) and 260 BSc (113 female and 147 male). A total of 13,662 students graduated with degrees and diplomas of Makerere University. Of these, 143 graduated with PhDs, 1,813 with Masters degrees, 11,454 with Bachelor's degrees and 243 with postgraduate diplomas. 53 % of the graduates were female and 47% were male. 44% of the PhD graduates were female. A total of 491 graduates received first class degrees. 16% of the students graduated with post-graduate degrees and diplomas.

AR-Prof. Buyinza Mukadasi (4th L) and Chair Convocation-Mr. George Turyamureeba (3rd L) present the Award to Mubiru (C) as his parents (3rd & 4th R) as well as CoNAS Principal-Prof. Winston Tumps Ireeta (2nd R) and College Leadership witness

2.7 Honouring Prof. Leif Abrahamsson with a Honorary Doctorate

Makerere University awarded Prof. Leif Abrahamsson an Honorary Doctor of Science in recognition and appreciation of his contribution to the development of Mathematics in East Africa, and particularly in Uganda. The award was presented to Prof. Leif Abrahamsson by the Acting Chancellor, also Vice Chancellor of Makerere University, Prof. Barnabas Nawangwe on the first day of the 74th graduation ceremony, Monday, 29th January 2024. Prof. Leif Abrahamsson, formerly Programme Director at the International Science Programme (ISP), Uppsala-Sweden, and Coordinator of the Bilateral Programme of Sida at Makerere University, has immensely contributed to the development of teaching mathematics, and research capacities in Ugandan universities and globally through quality and mass PhD training and postdocs and research publications. His initiative under the Eastern Africa Universities Mathematics Programme (EAUMP) built a solid background for Sida support to Mathematics in the region, which has seen the training of over 30 PhD students, over 20 Master students, and over 15 Postdocs in Mathematics and its Applications in Uganda since 2002. Over 100 publications in Mathematics at Makerere University are direct outcomes of Prof. Abrahamsson's EAUMP and Sida initiatives.

Left: Prof. Abrahamsson receiving his award from the Ag. Chancellor, also Vice Chancellor of Makerere University, Prof. Barnabas Nawangwe. Right: The Chairperson, Makerere University Council, Mrs. Lorna Magara presenting souvenirs to Prof. Abrahamsson

2.8 The 2024 EAUMP-ICTP School on the Mathematics of Artificial Intelligence

Left: Prof. John Mango from the Department of Mathematics at Makerere University with one of the facilitators at the opening ceremony

Hosted by the Department of Mathematics at the College of Natural Sciences (CoNAS), Makerere University, the School presents a distinctive opportunity to explore the foundational mathematics of Artificial Intelligence (AI). By convening experts in diverse fields, encompassing data, assimilation, inverse problems, statistics, control theory, and graphic theory- integral components of the mathematical machinery driving successful AI systems – the School offers participants a comprehensive perspective. Lecturers and workshops covered key topics such as mathematical modelling of AI algorithms, optimization techniques, and theoretical underpinnings of machine learning. This platform provides an opportunity to students and researchers to deepen their comprehension of the Mathematics of AI. The training took place at Makerere University from 8th-26th July 2024.

Participants at the closing ceremony. The ceremony was officially opened by the Deputy Principal of CoNAS, Prof. Juma Kasozi (7th Left) on 8th July 2024

2.9 The Eastern Africa Algebra Research Group (EAALG) Workshop on some topics in Algebra & Geometry

Participants in the 2024 Eastern African Algebra Research Group workshop

The workshop held between 25th-29th November 2024 was hosted by the Department of Mathematics at the College of Natural Sciences (CoNAS), Makerere University with 28 participants from the University of Rwanda, University of Dodoma (Tanzania), Strathmore University (Kenya), Makerere University, Kyambogo University, Kabale University, and Busitema University (Uganda). Trainers included Dr Giulia Gugiatti from the University of Edinburgh (UK), Dr Daniel Kaplan from UMass Boston (US), and Dr Francis Rota from the University of Glasgow (UK). The overall objective of the training was to build research and graduate training capacity in Algebra and related areas within the Eastern Africa region. Through the programme, 2 PhDs and 6 MSc have been supported across the partner institutions.

The Principal of CoNAS addressing participants at the opening ceremony of the workshop

2.10 2nd DRIAR Project Field Training School

Participants at the opening ceremony of the training school at CoNAS on 24th June 2024

Funded by the United States National Science Foundation, the Dry-Rifting in the Albertine-Rhino Graben (DRIAR Project) is an international collaborative group aimed at addressing geological questions surrounding magma-poor continental rifting in the Albertine-Rhino Graben. The 2nd DRIAR Project Field Training School was held in June 2024 with over 30 participants from the Department of Geology and Petroleum Studies at Makerere University, the University of California-Davis, Northwestern University, and Uganda's Ministry of Energy and Mineral Development. The six-day training was conducted at the Department of Geology and Petroleum Studies, College of Natural Sciences (CoNAS), Makerere University. The training covered two modules: Structural Geology and Neotectonics led by Dr Mike Taylor from the University of Kansas, and Geochemistry led by Dr Ellot Atekwana from the University of California-Davis. Activities included UAV/Drone mapping, strabospot mapping, structural interpretation, sampling of hot springs and geochemical interpretation. The training programme is part of the activities in the Memorandum of Understanding signed between Makerere University and Virginia Polytechnique Institute and State University, the leading institution of the consortia of universities participating in the DRIAR Project, to conduct geophysical, geochemical and geological studies in the Albertine-Rhino Graben in Uganda. At Makerere, the project is coordinated by Dr John Mary Kiberu from the Department of Geology and Petroleum Studies.

Participants at the opening ceremony of the training school at CoNAS on 24th June 2024

2.11 Career guidance in Secondary Schools

Many times students miss out on their dream courses at University due to lack of guidance. Several students miss out on their preferred programmes/courses due to wrong choice of subjects at A' Level. Additionally, the majority of students tend to believe that they cannot succeed in life if they are not admitted to specific programmes like those in the medical and engineering fields. Others may not proceed with education after certain levels due to lack of knowledge of career options, and the financing/sponsorship schemes available. To bridge the information gap, and demystify the myths around the Bachelor of Science Programme that is perceived to be flat with no job prospects, the School of Biosciences at the College of Natural Sciences (CoNAS) embarked on a programme to offer career guidance to teachers and students in secondary schools across the country. The exercise was funded by the Carnegie Corporation of New York through the Directorate of Research and Graduate Training under the Early Career Academics Fellowship for Makerere and other Public Universities.

Left: Dr Joseph Kisakye offering career guidance to O and A' Level students of St. Joseph's College, Layibi in Gulu City. Right: The CoNAS team with the Head Teacher and students of Layibi High School after the career guidance session. Altogether, the team conducted career guidance in seven schools in Gulu and Amuru Districts in August 2024 - Sir Samuel Baker S.S, Layibi High School, St. Joseph's College, Layibi, St. Mary's College Lacor, Gulu High School, Gulu Secondary School, and Restore Leadership High School.

Left: Dr Joel Isanga offering career guidance to students of Mityana SS. Right: The Dean, School of Biosciences, Dr Arthur Tugume speaking to S.6 Science students of Holy Cross Lake View SSS, Jinja

2.12 The 44th Annual National Mathematics Teachers' Conference

Left: Procession of the 49th Prize giving ceremony of Uganda Mathematical Society (UMS).
Right: A-Level National Mathematics Contest winners. 1st is Arora Albert Adyeri from King's College Buddo, 2nd is Umar Lubega from Light Academy Secondary School, and 3rd is Carlos Charles Ssessanga from King's College Buddo.

On 26th July 2024, Uganda Mathematical Society (UMS), a community engagement arm of Makerere University Mathematics Department held the 44th Annual National Mathematics Teachers' Conference. This was followed by the prize giving ceremony for the National Mathematics Contest (NMC) that took place on 27th July 2024 at Makerere University Rugby Grounds. Over 2000 students and pupils from all parts of Uganda attended the colourful event. Awards were given to best 10 students at Primary, O-Level and A-Level. Regional winners among Primary school participants also walked away with prizes. The event featured a Quiz at Primary and Secondary level at Regional levels. Winners of the Quiz competition were also rewarded. NMC was also done at the University level and the top three were equally appreciated. The Department of Mathematics at Makerere University, through the Uganda Mathematics Society organises a number of activities to promote and popularize the subject of Mathematics.

2.13 Freshers' orientation

Orientation of First Year students admitted to the College of Natural Sciences (CoNAS) was conducted on 7th August 2024. Led by the Principal, Prof. Winston Tumps Ireeta, the College and University leaders sensitized the students on the programmes and policies of the University. Students were sensitized on the registration and examination processes, ICT support services, library services, fees payment policies, the Anti-sexual Harassment Policy, counselling and guidance services, the emerging leaders programme, and general welfare at the University.

Left: The Principal of CoNAS, Prof. Winston Tumps Ireeta addressing the First Year students. Right: Dr Barbara Nerima from the Department of Biochemistry delivering a presentation on setting priorities and the emerging leaders programme

3

RESEARCH ACTIVITIES AND INNOVATIONS

3.1 Drive to improve waste management in Uganda

Participants on the final day of the workshop. The ceremony was officially opened by the Deputy Principal of CoNAS, Prof. Juma Kasozi (7th Left) on 8th July 2024

Majority of industries in the country such as dairies, abattoirs, breweries, distilleries, and tanneries are engaged in agro-processing. Such industrial processing often leads to the discharge of large quantities of organic-rich wastewater, disease-causing micro-organisms, and greenhouse gas emissions, if poorly treated or managed. While the regulatory body, the National Environment Management Authority (NEMA) requires that all industries should efficiently treat their effluent to meet discharge standards, waste treatment technology market surveys that were carried out in the major industrial cities of Kampala, Jinja, Masaka and Mbarara in 2018 showed that most agro-process industries do not treat their wastewater. Furthermore, very few have in there effluent treatment management, resource recovery processes such as bio-digesters for recovering biogas and nutrient-rich bio-slurry. A study conducted by researchers from the College of Natural Sciences (CoNAS), Makerere University in collaboration with partners in the waste management sector proposes a number of technologies that can be deployed to effectively address the challenge of waste in the country. These include; anaerobic-aerobic digesters, sludge drying beds, constructed wetlands, and duckweed growing units. Through their project titled ***"Adding value to agro/bio-waste through integrating technologies to enhance sustainable agro-process waste management in Uganda",*** the researchers led by Dr Joseph Kyambadde from the Department of Biochemistry and Sports Science at Makerere made several recommendations towards waste management in the country. The researchers called for integration of aspects of the technology, encompassing wastes-to-energy courses/topics in the curricula of programmes like biochemistry, industrial chemistry, and environmental sciences at universities. This would enable training of scientists who would in turn foster adoption and promotion of the developed technologies in different industries. They also emphasized the need to promote investment in technologies that can be used to convert waste into useful by-products like biogas, bio-fertilizers and protein-additives, and to raise awareness about the importance of waste treatment technologies amongst private-public actors, managers/business owners of agro-processing industries, as well as government line ministries/agencies, and development partners. The research findings were disseminated to stakeholders on 23rd January 2024, at a seminar held at Ridar Hotel, Mukono District.

Right: The Principal Investigator, Dr Joseph Kyambadde presenting an overview of the project at the research dissemination workshop at Ridar Hotel, Seeta, Mukono District on 23rd January 2024. Seated is the Co-PI, Dr Robinson Odong.

Participants in focused group discussions on the challenge of poor waste disposal

3.2 Assessment of Mak Suitability to Host the Regional Centre of Excellence in Fisheries and Aquaculture

Left-Right: Prof. Charles Masembe (CoNAS), Dr. Papias Tibihika (NARO-Kajjanzi) Dr. Etienne Hinrichsen (AU-IBAR), Prof. Barnabas Nawangwe (VC), Assoc. Prof. Jesca Nakavuma (CoVAB), Dr. Patrick Karani (AU-IBAR), Dr. Daniel Adjei Boateng (AU-IBAR), paid a courtesy call to the Vice Chancellor Prof. Barnabas Nawangwe

Makerere University has been subjected to an assessment to determine its suitability for hosting a Regional Centre of Excellence in Fisheries and Aquaculture in Africa. The evaluation follows a jointly submitted Expression of Interest by the College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB) and the College of Natural Sciences (CoNAS). The Africa Union Inter-African Bureau for Animal Resources (AU-IBAR) mission was at Makerere from 11th to 12th March 2024, specifically at the colleges that offer fisheries-related programs, CoVAB and CoNAS where they looked at the suitability of the existing Teaching and Research Facilities and other parameters necessary for the establishment of a center of excellence. The team comprised of Etienne Hinrichsen, the leader together with Patrick Karani, from AU IBAR, and Daniel Adjei Boateng, the Aquaculture Expert on the mission undertook a two-day in-depth review of the state of affairs of Makerere University to make an informed decision regarding its suitability to host the centre.

3.3 INNOECOFOOD Project to Address Food Security & Nutrition Gaps in Africa

The project team during the kick-off meeting on 6th March 2024

Supported by the EU under The Horizon Europe Programme, the three-year project (2024-2026) aims to establish innovative production/ business ECOHUBS and improve local aquaculture cage farms in lakes and rivers using AI and IoT in six diverse African countries, Uganda inclusive. The Project team at Makerere University, led by Dr Godfrey Kawooya Kubiriza held a kick-off meeting on 6th March 2024 to plan for the implementation process. Comprising partners from diverse regions including Europe (Portugal, Germany, UK, and Turkey), East Africa (Kenya, Uganda, and Tanzania), Southern Africa (Namibia), West Africa (Ghana), and Northern Africa (Egypt), the consortium's coordinating institution is CIIMAR in Portugal. INNOECOFOOD has a multidisciplinary team of 20 expert participants with skills and backgrounds in various fields. To support EU-AU markets and trade, INNOECOFOOD, an Innovation project will train rural farmers, youth and women to innovatively produce and process nutritious aquaculture fish, blue-green cyanobacteria spirulina, and selected insect value chains at pilot/large scale level into certified marketable human food products and feed. This farm to fork approach will be achieved by using climate smart sustainable local resources, innovatively designed ECOHUBs following Good Manufacturing Practice. Prototypes of innovative pilot scale solar coolers and driers will be created and replicated in four ECOHUBs using renewable energy, reduced water consumption and circular systems to address the AU/European Green Deal.

3.4 INNOECOFOOD Project: Mak Team Assesses Potential sites for Hosting the Mini Living Lab & Fish Processing Unit

Left: The project team assessing the viability of the site in Kikuba, Buikwe District to host the project activities. Right: The team assessing the suitability of one of the sites in Namumira Anthony Ward, Mukono Municipality for construction of ponds.

The MAK-INNOECOFOOD project team on 18th March 2024 conducted a thorough exploration of potential spaces for the fish processing unit within the Department of Zoology, Entomology and Fisheries Sciences at Makerere University. The primary objective was to assess the viability of these spaces to accommodate the fish processing unit, aiming to streamline project operations. The tour encompassed various areas within the Department, including laboratories, storage facilities, and open spaces suitable for potential adaptation. Each space was examined to determine its capacity, accessibility,

infrastructure, and compatibility with the intended activities of the processing unit. Similarly, on 19th March 2024, the team conducted assessments across four sites within Mukono and Buikwe districts to establish their viability for location of a mini living lab and fish processing unit. These included two sites in Namumira Anthony Ward, Mukono Municipality, as well as Kikuba, and Kamos Fish Farm in Buikwe district. At the sites, the team assessed the topography in relation to the planned activities. At Kamos Fish Farm, the team explored the potential for setting up small, customized experimental cages and ponds to facilitate the project experimental activities. The cages and ponds would be used to cultivate tilapia and catfish, with the aim of establishing controls for growth rates in relation to fish feed. Various aspects such as logistics, feasibility and cost estimates for constructing the cages were discussed with the owner of the farm.

Left: The team holds a brief meeting to discuss the suitability of the sites assessed before setting off to Kamos Fish Farm. Right: The team in a meeting with the owner of Kamos Fish Farm to establish the possibility of setting up small, customized experimental cages and ponds to facilitate the project experimental activities

3.5 Leveraging poultry by-products in the formulation of commercial fish feeds

The researcher team led by Dr Godfrey Kawooya Kubiriza (standing 6th R) together with stakeholders in the fisheries sector at the project research dissemination workshop at Colline Hotel Mukono on 21st August 2024.

Aquaculture has been prioritized by the Government of Uganda as a vital sector, aiming to improve livelihoods, provide jobs, and improve food security and nutrition for its people as stipulated in the National Development Plan (NDP) III. Fish feeds are a fundamental resource for growing the sector. Yet the high costs of standard feeds limit returns for fish farmers, as they represent 40–70 percent of total production costs for small-scale aquaculturists (Enyidi et al. 2017; Singh et al. 2018). In order to meet the 1,000,000 tons annual production target from aquaculture, Uganda will need at least 1,500,000 tons of good quality fish feed up from the current 75,000 tons produced locally and 150,000 tons imported (FAO). Poultry by-products present a cheaper alternative for fish feed formulation. Through a project titled: ***Towards up-scaling the use of poultry by-products in the formulation of commercial fish feeds in Uganda (TUPPCO),*** Makerere University researchers led by Dr Godfrey Kawooya Kubiriza, Head, Department of Zoology, Entomology, and Fisheries Sciences, target to optimize the use of local technology to process poultry by-products including offal, discarded cocks, and unhatched eggs into nutrient-rich protein supplements. The project is funded by the Carnegie Corporation of New York through the Directorate of Research and Graduate Training at Makerere University under the Consolidating Early Career Academics Programme (CECAP), and implemented in Mukono District. It aims to address the high cost of imported feeds, which poses significant logistical challenges.

3.6 ICT-4MRPQ Project Team, Partner Institutions Discuss Strategies for Improving the E-Supervision Platform

The project team during the meeting held at the School of Open and Distance Learning at Makerere University on 9th April 2024.

The E-Supervision Platform being developed by IT Experts from Makerere University and MUBS is intended to improve graduate research management Processes in HEIs in Uganda to enable students to graduate on time. It is one of the main objectives of the ICT-4MRPQ Project funded by the **EU under Erasmus projects for the period 2023-2026** with the aim of strengthening Uganda's HEIs capacity to use ICT in Masters' research journey quality management processes. The **E-Supervision web portal (https://mastersresearch.ug/)** has been identified as one of the components of the Research Information Management System (RIMS) of Makerere University. RIMS is a digital platform aimed at tracking all research outputs at Makerere University. On 9th April 2024, the project team led by Assoc. Prof. David Katamba and Dr John Mary Kiberu convened a meeting at Makerere University to demonstrate the E-Supervision platform to partner institutions and get feedback on how it can be improved. Partner institutions include: Mbarara University of Science and Technology (MUST); Stichting Vu; Kyazze, Kankaka & Co Advocates; Uganda Chapter for Corporate Social Responsibility Initiatives (UCCSRI); Universidade De Lisboa; and the Uganda National Council for Higher Education.

3.7 BioGOLD Project Inception Meeting

Funded by the Austrian Development Cooperation through APPEAR, the project aims to develop sustainable technologies for remediation and rehabilitation of mercury contaminated soils and effluents in Mercury-dependent Artisanal and Small-scale Gold Mining (ASGM) areas in Uganda. The project team held a three-day workshop (27th-29th May 2024) at Kolping Hotel in Kampala to develop the implementation plan, followed by an excursion at one of the project sites on 30th May 2024. Project partners: Makerere University, Kyambogo University, Gulu University, University of Pretoria (South Africa), and the University for Continuing Education Krems – Austria. The Project PI is Dr Mary Kaggwa from Kyambogo University. At Makerere, the Project is coordinated by Dr Peter Akoll from the Department of Zoology, Entomology and Fisheries Sciences. Project sites: Kasanda in Mubende District (Central Uganda), Buhweju (Western Uganda), and Namayingo District (Eastern Uganda). Project implementation period: March 2024-February 2027.

The project team at the inception meeting at Kolping Hotel in Kampala on 27th May 2024

3.7.1 BioGOLD Project Team Kicks off Activities

Launched in May 2024, Biosorption for Sustainable Small-Scale Gold Mining in Uganda (BioGOLD) aims to develop sustainable technologies for remediation and rehabilitation of mercury contaminated soils and effluents in Mercury-dependent Artisanal and Small-scale Gold Mining (ASGM) areas in Uganda. The three-year project (2024-2027) funded by the Austrian Development Cooperation through APPEAR is being implemented in three districts namely; Mubende (Central Uganda), Buhweju (Western Uganda), and Namayingo (Eastern Uganda). Partner institutions include; Makerere University, Kyambogo University, Gulu University, University of Pretoria (South Africa), and the University for Continuing Education Krems – Austria. As part of the kick-off activities, the BioGOLD research team on 23rd-24th August 2024 introduced the project to the leaders and miners in selected sites in Namayingo District. The team also tested questionnaires, and collected initial data to guide activities at the sites. The project team engaged ASGM communities of Naggudi, Nsango and Budde villages on issues regarding their socio-demographic and economic data (miners and household crop farmers), gender inclusion and power relations in the mines, risks of exposures to mercury in the mines, baseline information on effluent and soils in the mines, and crops grown around the mines. The team conducted similar activities in Kasanda, Mubende District (Central Uganda), and Buhweju District in Western Uganda.

The BioGOLD Project team conducting baseline studies in Namayingo, Kasanda, and Districts

3.8 AWaRMN Achievements and transition to a more sustainable network

The African Water Resources Mobility Network (AWaRMN), a multi-partner project of the EU funded Intra-Africa Academic Mobility Scheme has over the last four years of implementation registered great success. Initiated in 2019 and launched on 20th October 2021 at an event hosted by Rhodes University, South Africa, the lead partners, AWaRMN has to date, supported the training of 32 MSc students, 12 PhD students and 12 academic and administrative staff on exchange programmes. The project, currently in its fifth year of operation, is aimed at fostering collaboration and cooperation between higher

education institutions in Africa in the water research sector through mobility. The project is a collaboration between five partner institutions on the continent: Rhodes University in South Africa, University of Kinshasa in the Democratic Republic of Congo, Federal University of Technology in Nigeria, Makerere University in Uganda, National School of Hydraulics in Algeria, and TU Delft in the Netherlands. The PI of the project is Prof. Nelson Odume from Rhodes University. At Makerere University, the project is coordinated by Prof. George Nyakairu from the Department of Chemistry.

Transitioning to a more sustainable network

The project is now transitioning into a collaborative network aimed at sustaining research capabilities across stakeholders in the field of water resources in Africa through various avenues. One such avenue is through developing the AWaRMN Future Earth Hub Leadership Centre Science Cluster on Water funded by Future Earth Global and the South African National Research Foundation. In a bid to plan for the future direction of the project and to facilitate its successful transition, representatives from partner institutions held a two-day meeting in Kampala from 15th-16th May 2024 to deliberate strategies for expanding the project into a big collaborative network aimed at fostering sustainability and causing impact in the communities.

3.9 Mak Researchers Set Out to Address the Challenge of African swine fever in Uganda

African swine fever (ASF) is a highly contagious viral haemorrhagic disease of domestic pigs; and has recently spread to new areas including Eastern Europe and in Asia as far as Papua New Guinea. This disease has neither vaccine nor treatment and is currently a big challenge to many smallholder pig farmers in Uganda. In Uganda, ASFV genotype IX has been reported to cause outbreaks on a regular basis and is an impediment to development of the swine industry. The disease was previously reported with a mortality of 100%. However different forms of the disease have recently been observed in domestic pigs. Indeed, some studies have shown that pigs that survive ASF become resistant to the same viral isolates although they do not produce classical neutralizing antibody. These observations could have the key for vaccine development strategies. Through a project titled ***"African swine fever virus (ASFV) severity and viral genomic structural features: opportunities for development of a vaccine in Uganda",*** a team of researchers led by Prof. Charles Masembe from the Department of Zoology, Entomology, and Fisheries Sciences at Makerere University registered the need to correlate clinical studies of ASF virus with full genome sequences and virus structural data to identify potential candidate

genes for vaccine development. The team set out to isolate and characterise highly virulent and low virulent ASF viruses circulating in the swine population in Uganda using next-generation and Electron Microscopy to inform the development of ASFV vaccines and other therapeutic strategies. The team also set out to sequence the whole genome of low and high-virulence African swine fever viruses circulating in the domestic pig population in Uganda; compare the whole genome sequences of low and high-virulence ASF viruses in Uganda, and to find genomic variations and their effects on the virulence and viral evolution. Whole blood and organ tissue samples together with clinical-epidemiological information, were collected from acute and chronic cases of pigs in reported ASF outbreaks in the districts of greater Masaka, Greater Gulu, Mukono, Wakiso, Kakumiro, and additionally in other districts were outbreaks were reported during the study period. The project was supported by the Government of Uganda through the Makerere Research and Innovations Fund (MakRIF). On 15th May 2024, the project team held a workshop at Doves Nest Hotel in Gulu District to disseminate the research findings, and to fact check by mapping pig farms, abattoirs, slaughter slabs, and pork restaurants in both Gulu District and Gulu City for on-going and future research.

The Project team at the research dissemination workshop in Gulu District. Right: Prof. Masembe interacts with the participants during the workshop.

3.10 Launch of the e-Resources for Health Website

Right: The PI, Dr Rhona Baingana briefs participants about the project

The Department of Biochemistry and Sports Science on 21st June 2024 launched a website developed by staff in the Department as part of their MakRIF project, "Using the Internet to Incentivize Healthy Lifestyle Choices in Uganda". The website, www.eresourcesforhealth.org is the medium they are using to inform, educate, and communicate about non-communicable diseases (NCDs) by providing well-researched, evidence-based information to motivate, empower and support readers to make healthy life-style choices to prevent NCDs. The PI is Dr Rhona Baingana, a member of staff in the Department of Biochemistry and Sports Science at CoNAS.

3.11 Keeping healthy: Department of Sports Sciences introduces aerobics sessions for Makerere staff

Following instructions from the Ministry of Education and Sports for all Government institutions to conduct physical exercise for all staff, Department of Sports Science is spearheading the activity at Makerere University. Aerobics sessions are conducted every Wednesday and Friday at the CoNAS premises. The activity started on 6th September 2024.

Staff in the first aerobics session

3.12 Improving children's swimming and water skills

With support from the Fibby Foundation, the Department of Exercise and Sports Science, Makerere University in collaboration with instructors from the University of Applied Sciences, Windesheim, Netherlands last year trained children at the Makerere University Child Care Centre in swimming and water safety. In November 2024, the Department held an event at the University Swimming Pool to celebrate the progress and achievements of the Centre Fibby swimmers. The exercise was coordinated by the Head of the Unit, Dr. Bernadette Nakabazzi, with support from members of staff in the Unit.

The children received certificates in recognition of their participation

3.12 Mitigating the effects of aquaculture on the environment

Stakeholders at the dissemination workshop at Colline Hotel in Mukono.

The fisheries sub-sector in Uganda is crucial, supporting over 5 million livelihoods and providing essential protein for up to 17 million people, with an average consumption of 10 kg per capita. Uganda's population is projected to double in the next 27 years, prompting the National Development Plan III to aim for a significant increase in fish production, with aquaculture expected to contribute 1 million MT by 2030. The Fisheries and Aquaculture Act 2022 emphasizes adherence to National Environmental Management principles to achieve sustainable production systems. However, as aquaculture grows, the sector faces environmental challenges due to increased intensive production and on-farm waste, including nutrients from feed, uneaten feed, poor quality feeds, pseudofeces, escaped farmed fish, and residual chemicals. These pollutants pose risks such as habitat quality deterioration, biodiversity loss, eutrophication of waterways, and the emergence of drug-resistant pathogens. Through a Project titled: ***Mitigating the Effects of Environmental Pollution from aquaculture on freshwater resources in Lake Victoria Basin (MEEP),*** researchers from Makerere University in collaboration with the National Environment Management Authority (NEMA) set out to assess the effects of aquaculture facilities and practices on Lake Victoria, its catchment rivers and wetlands. The team led by Dr Ronald Semyalo from the Department of Zoology, Entomology and Fisheries Sciences (ZEFS) at Makerere University subsequently examined the effectiveness of innovative technologies, such as integrated wetland-bivalve systems, in mitigating these impacts.They also reviewed the application of national environment and aquaculture regulations in controlling environmental pollution. As part of the project outputs, the team developed an Innovative Integrated Wetlands-bivalve system to curb the effects of aquaculture practices on freshwater resources in the Lake Victoria Basin. On 26th June 2024, the project team held a workshop at Colline Hotel Mukono to disseminate the research findings to stakeholders who included fish farmers from Buikwe, Jinja and Mukono, District Fisheries Officers, as well as representatives from NEMA and MAAIF. In the presentations, the team highlighted the environmental impacts of aquaculture practices and the possibility of innovatively using nature-based, environmentally friendly innovations as a mitigation measure.

Stakeholders at the dissemination workshop at Colline Hotel in Mukono. Centre is the PI, Dr Ronald Semyalo. Right: The Principal of CoNAS, Prof. Winston Tumps Ireeta officially opened the workshop.

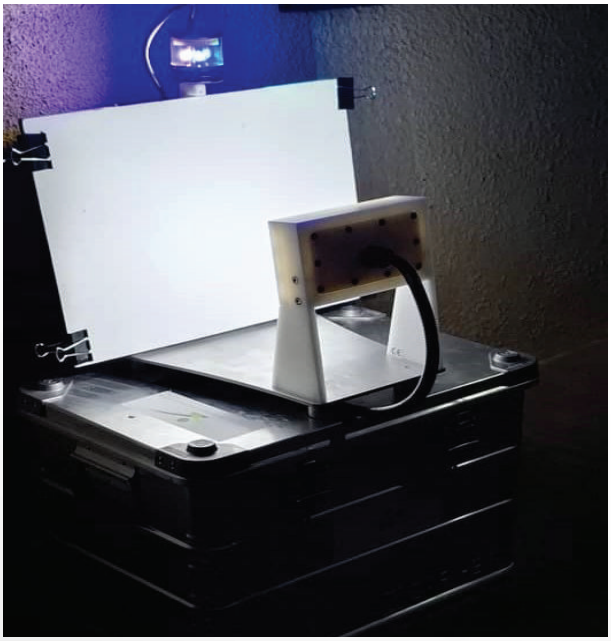
One of the technologies developed by the project team to support the mitigation of the effects of aquaculture on the environment

3.13 State House Assessment of Laboratories at CoNAS

Officials from State House led by Dr. L. Moreno visited the College of Natural Sciences (CoNAS) on 28th June and 3rd July 2024 to assess the status of the training facilities (laboratories) and human resources in the College. The officials inspected facilities at the Geology and Petroleum Studies, Chemistry, Physics, and Plant Sciences, Microbiology and Biotechnology.

The team inspecting facilities in the Geology Analytical Lab at CoNAS

3.14 Solving the problems of taxonomic difficulty in insect studies



Dr Perpetra Akite, a Lecturer in the Department of Zoology, Entomology, and Fisheries Sciences has set up the first AMI-trap (Automated Monitoring of Insects Trap) in Uganda. The AMI system offers a platform for long-term, autonomous monitoring of moths. The set was given to her by CEH (UK) through the Tropical Biology Association

field courses. Students will now appreciate the role of ICT in taxonomy and why integrative science is important since this machine is so much based on the use of AI and machine learning. Dr. Akite is one of Uganda's leading entomologists and experts in butterflies. She has made important advances in improving knowledge around insects in Uganda, contributing to assessing and mapping key ecologically sensitive species in the country.

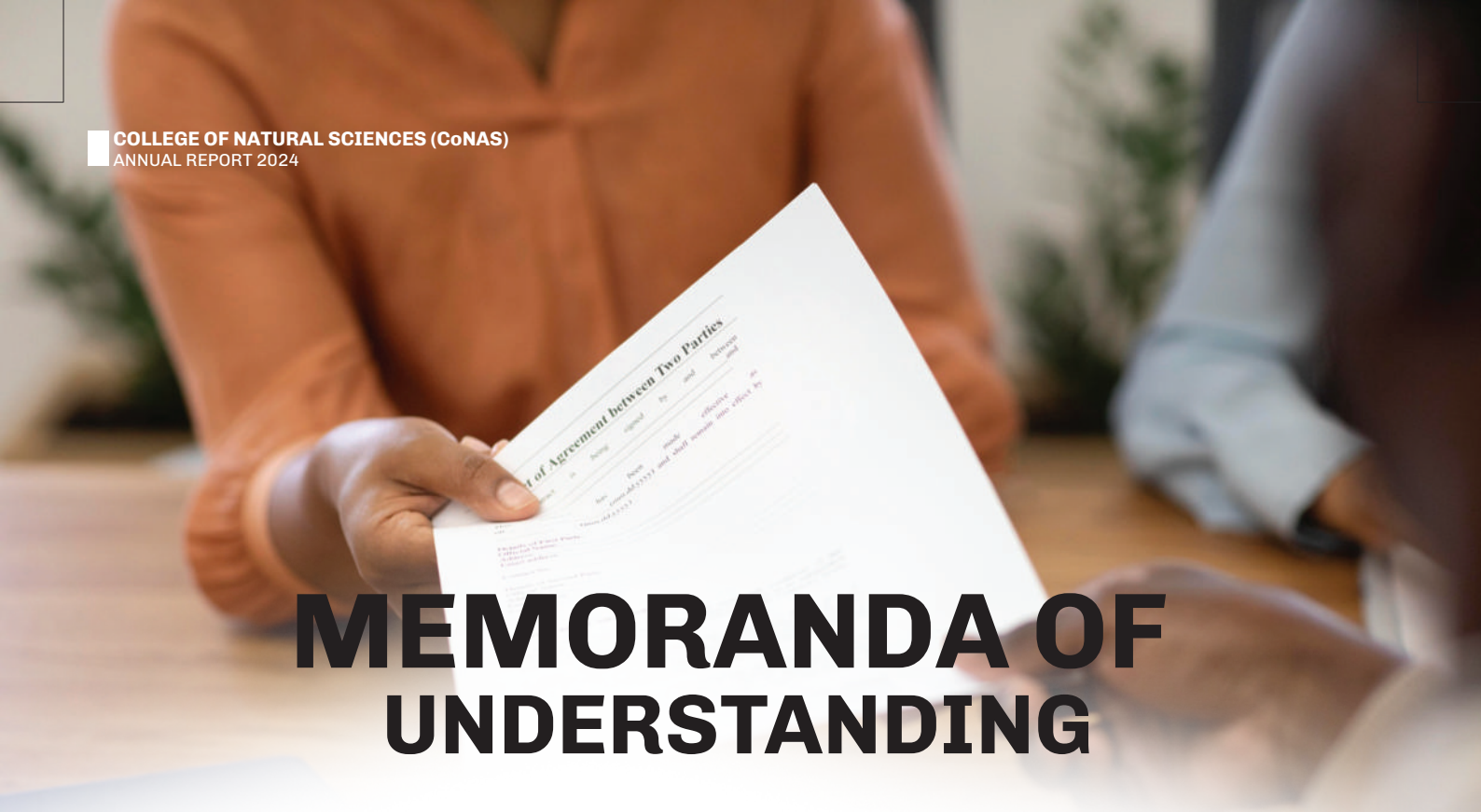
3.15 CoNAS interface with MPs on the Alcoholic Drinks Control Bill 2023

At the joint meeting of the Parliamentary Committees on Health, and Tourism, Trade and Industry held on 27 November 2024, to consider preliminaries for the Alcoholic Drinks Control Bill 2023 scrutinization process, Members identified the College of Natural Sciences, Makerere University as a key stakeholder and think-tank whose invaluable views on the Bill would significantly contribute to the legislative process. On 5th March 2024, members of staff from CoNAS led by the Principal, Prof. W. T. Ireeta interfaced with the two Committees and made a number of proposals to the draft Bill.

CoNAS academic staff led by the Principal, Prof. Winston Tumps Ireeta interfacing with the MPs at Parliament

3.16 Efforts to improve performance in the subject of Biology

The School of Biosciences, CoNAS has been central in the quest to improve the academic performance of Biology in national examinations in secondary schools in Uganda. Therefore, under the office of the DVCAA, a study to assess factors accounting for poor performance in Biology was approved by Makerere University. The study is being undertaken by a team of researchers from the School of Biosciences, CoNAS and the School of Education, CEES under the overall technical oversight of Prof. Fredrick J. Muyodi (CoNAS) and Prof. Josephine Esaete (CEES).
Accordingly, between 24th-28th June 2024, data was collected across the country from different schools that were sampled for this study. Schools were sampled from all the different sub-regions of Uganda. At CoNAS, the project team members were from the Departments of Zoology, entomology and Fisheries Sciences; Plant Sciences, Microbiology and Biotechnology; and Biochemistry.



MEMORANDA OF UNDERSTANDING

1 **Mak-CoNAS Department of Zoology, Entomology, and Fisheries Sciences & KAMOS Agro-Fish Farming Limited**
Signed on: 7th November 2024

Purpose

To strengthen collaboration between both parties in order to successfully implement the objectives of the *Eco-Innovative Technologies for Improved Nutrition, Sustainable Production, and Marketing of Agro-Ecological Food Products in Africa (INNOECOFOOD).* The key objectives include:

i) Scoping aquaculture practices in lakes and establishing sustainable, novel agribusiness living labs.

ii) Optimizing tilapia production, sustainable feed development, and post-harvest technologies using sensors, AI, and IoT technology at aquaculture living lab sites.

2 **Mak-CoNAS Department of Biochemistry & Sports Science & JOSCEEFA Institute of Sports and Management Sciences**
Signed on: 12th April 2024

Purpose

i) To formalize institutional collaboration and cooperation, leveraging each other's strengths, experiences, technologies, and resources to achieve shared and complementary goals.

ii) To align with Makerere University's commitment to providing transformative, innovative education, research, and services that respond to both national and global needs.

iii) To address challenges related to personnel training and the lack of training equipment in the field of sports science at the University, as well as to promote continuous exposure through JISCM's cultural exchange programmes.

3 **Mak-CoNAS Department of Geology and Petroleum Studies & SNF Uganda Ltd**
Signed in: October 2024

Purpose

To share information and conduct research and student training that supports the mandate of the Department of Geology and Petroleum Studies.

3.17. Table 6: Ongoing Projects supported by International Partners

No.	Project title	Purpose	Duration	Principal Investigator
1.	Environmental Chemistry for Sustainable Development	Makerere University with financial support of € 373,050.15 from the Austrian Partnership Programme in Higher Education and Research for Development is implementing a three-year project on Environmental Chemistry for Sustainable Development. Partners are: University of Natural Resources and Applied Life Sciences, Austria; Jaramogi Oginga Odinga University of Science and Technology, Kenya	2022-2024	Dr. Patrick Ssebugere, staff from the Department of Chemistry
2.	Mathematics for Sustainable Development	Makerere University in collaboration with University of Bergen, Norway and University of Dar es Salaam, Tanzania won a grant of NOK19,900,000 to train five (5) PhDs at Makerere University and six (6) PhDs at University of Dar es Salaam between 2021-2026.	2021-2026	Assoc. Professor John M. Mango, Department of Mathematics
3.	Energy Technology Network (EnergyNET)	EnergyNET project is funded by the Norwegian Agency for Development Cooperation (NORAD) under NORHED II. "The project is a network of African universities collaborating on education and research in Energy Technology. EnergyNET project is coordinated by NTNU-Trondheim and the project partners are: University of Dar es Salaam (Tanzania), Makerere University (Uganda), Mekelle University (Ethiopia), Addis Ababa University (Ethiopia) and Eduardo Mondlane University (Mozambique	2021-2026	Dr. Karidewa Nyeinga, the Department of Physics

4.	Dry Rifting in the Albertine Rhino (DRIAR) Project	Makerere University is collaborating with the US universities including Virginia Tech and University of Kansas to conduct research in the Albertine Graben under the Dry Rifting in the Albertine Rhino (DRIAR) Project. The DRIAR Project involves a geophysical, geochemical, geological, and geodynamic investigation of the Albertine-Rhino Graben in western and northwestern Uganda to improve understanding of continental rifting in areas where volcanic activity is minimal. Several field activities are being carried out. These activities include collecting water samples, collecting rock samples, temporary deployment of seismic, magnetotellunc, and gravity instruments, permanent installations or Global Navigation Satellite System (GNSS) instruments, temporary deployment of GNSS instruments at specific locations, and geological mapping. PhD students include Mr. Hillary Mwongyera and Ms. Asenath Kwagalakwe.	2021-2025	Dr. J.M. Kiberu, Department of Geology and Petroleum Studies
5.	ISP Grant of 313,590 SEK to EAUMP	Eastern Africa Universities Mathematics Programme (EAUMP) - objectives of the network are: Enhancement of postgraduate training with special emphasis to PhD training; Establishing and strengthening collaborative research in Mathematics areas of interest in the region; Strengthening the collaborating Mathematics departments in terms of equipment and literature; Development of resources for the collaborating Mathematics Departments; Postdoctoral training of academic staff	2022-2024	Dr Juma Kasozi, Department of Mathematics
6.	IST Grant of 598,000 SEK -	Grant to support women in Mathematics and Gender Outreach Activities		Dr B. K. Nannyonga, Department of Mathematics

7.	Understanding cell to cell heterogeneity in African trypanosome field isolates	Funded by DFG (German Research Fund), Project No. 444811942; Amount Eur 179,735	2023- 2025	Dr Julius Mulindwa - Department of Biochemistry and Sports Science
8.	INNOECOFOOD Project	Funded by the EU under The Horizon Europe Programme	2024-2026	Dr Godfrey Kawooya Kubiriza - Department of Zoology, Entomology and Fisheries Sciences
9.	*"East African HEI Network for Regional Digital Plant Pathology Study Modules, VIRAL"*_. The main area of focus is "Digital Plant Pathology".	Euro 799,999.00 - ERASMUS-EDU-2024-CBHE.	2025-2028	Prof. Arthur Tugume and Dr. Shahasi Athman – Department of Plant Sciences, Microbiology, and Biotechnology
10.	Prevention and Management of postpartum haemorrhage using safe uterotonics	IDRC-UNESCO	2023-2025	Dr Alice Nabatanzi - Department of Plant Sciences, Microbiology, and Biotechnology
11.	Bio-GOLD Project - the project aims to develop sustainable technologies for remediation and rehabilitation of mercury contaminated soils and effluents in Mercury-dependent Artisanal and Small-scale Gold Mining (ASGM) areas in Uganda	Funded by the Austrian Development Cooperation through APPEAR	2024-2028	Project PI is Dr Mary Kaggwa from Kyambogo University. At Makerere, the Project is coordinated by Dr Peter Akoll from the Department of Zoology, Entomology and Fisheries Sciences
12.	Africa Uninet Uganda-Austria Collaboration in Algebra and Geometry	EUR 40700	2024-2026	Dr David Ssevviiri, Department of Mathematics
13.	London Mathematical Society Grant	GBP 1000	2024	Dr David Ssevviiri, Department of Mathematics

14.	European Mathematical Society (EMS) - Commission for Developing Countries (CDC)	EUR 1000	2024	Dr David Ssevviiri, Department of Mathematics
15.	International Science Programme -	SEK 85000	2024	Dr David Ssevviiri, Department of Mathematics
16.	Early Career Fellowship 2023 by The Organization for Women in Science for the Developing World (OWSD), a UNESCO programme, hosted by The World Academy of Sciences	UNESCO-TWAS, Grants amount of USD 50,000.	2023-2024	Dr Patience Tugume, Department of Plant Sciences, Microbiology and Biotechnology
17.	"Capacity building in Gas Chromatography and Food Security in East Africa"	Supported by ICM Erasmus plus programme, Contract No. APVV-21-0178 (Project Coordinator).	2023 – 2026	Dr Patrick Ssebugere, Department of Chemistry
18.	Erasmus+ 2024 KA 171 - International Mobility of Higher Education Students and Staff between Makerere University (CoNAS), Uganda and the University of Turin (UniTo), Italy	500,000 Euro, funded by the European Union	August 2024-31st July 2027	PI – Dr. John Mary Kiberu, Department of Geology and Petroleum Studies Co-PI – Prof. Winston Tumps Ireeta

Table7: RIF Round 5 grant recipients

No	Project title	PI	Department
1.	Assessing feasibility, acceptability and utility of tuberculosis-molecular bacterial load assay for monitoring TB treatment in three HIV Clinics in Kampala	Dr Agnes Nandutu Masawi	Biochemistry and Sports Science

2.	Exploitation of Azolla as a renewable Climate Smart Agricultural resource for restoration of degraded soils and improvement soil productivity in Uganda	Ms. Nabyonga Lydia	Plant sciences, Microbiology and Biotechnology
3.	Designing efficient, inexpensive, and Eco-friendly Plant- Derived Nanoparticles Adsorbents For Removal Of Pharmaceutical Residues From Effluent Water	Dr Florence Nantaba	Chemistry
4.	Knowledge, Attitudes And Conservation Of Commonly Traded Medicinal Plants In A Climate Changing Environment In Eastern Uganda	Dr Tugume Patience	Plant sciences, Microbiology and Biotechnology
5.	The Forgotten Tropical Peat Swamp Forests of Lake Victoria Basin, Uganda: A Treasure for Restoration and Conservation	Mr. John Omara	Biochemistry and Sports Science
6.	Developing Blight Resistant Tomato Varieties to Reduce Excessive Use of Fungicide and Generation of Tomato Shelf-life Extension Technologies for Smallholder farmers in Uganda	Ozimati Alfred Adebo	Plant Sciences, Microbiology and Biotechnology
7.	Immersive Technology for Physics	Dr Elizabeth Naluminsa	Physics
8.	Development of Poly-Herbal mosquito repellent from Marigold, Lemon grass and Eucalyptus plant cocktail for malaria control	Dr Ambrose K. Mukisa	Biochemistry and Sports Science

Commercialization grants

No.	Project title	PI	Department
1.	Accessibility of science practical's to both public and private schools in Uganda	Dr Taddeo Ssenyonga	Physics
2.	Commercialization of Affordable Value-added Phyto-Nutra Chicken Concentrate Feeds	Dr Alice Nabatanzi	Plant sciences, Microbiology and Biotechnology
3.	Commercialization of Phytoplus nutraceuticals for pregnant women and School children	Dr Alice Nabatanzi	Plant sciences, Microbiology and Biotechnology

3.18 Recognition of Best Researchers and Teachers from CoNAS

During the 75th graduation ceremony, Makerere University recognized the best researchers and teachers from each of the 10 Colleges. At CoNAS, The Senior Researcher Award was presented to Assoc. Prof. Juma Kasozi (Department of Mathematics), Assoc. Prof. Charles Masembe (Department of Zoology, Entomology and Fisheries Sciences), and Dr. Jamilu Ssenku (Department of Plant Sciences, Microbiology and Biotechnology). The Mid-Career Researcher Award went to Dr. Julius Mulindwa (Department of Biochemistry), Dr. Patience Tugume (Department of Plant Sciences, Microbiology and Biotechnology), and Dr. Patrick Ssebugere (Department of Chemistry), while Dr. Omara Timothy (Department of Chemistry), Dr. Mukiibi Ssewannyaga Ivan (Department of Geology and Petroleum Studies), and Dr. Sadik Mustafa Abubakar (Department of Plant Sciences, Microbiology and Biotechnology) were recognized as the best Early Career Researchers. In addition, Prof. Ann Akol (Department of Zoology, Entomology and Fisheries Sciences), Dr. Sadik Mustafa Abubakar, and Dr. Kalega Peggy (Department of Geology and Petroleum Studies) were honoured as the best teachers of the year from CoNAS.

Best Senior Researchers Award Presented to:

Left-Right: Prof. Charles Masembe (Department of Zoology, Entomology and Fisheries Sciences); Dr Jamilu Senku (Department of Plant Sciences, Microbiology, and Biotechnology); and Prof. Juma Kasozi (Department of Mathematics)

Mid-Career Researchers Award recipients



Left-Right: Dr Patrick Ssebugere (Department of Chemistry), Dr Patience Tugume (Department of Plant Sciences, Microbiology and Biotechnology), and Dr Julius Mulindwa (Department of Biochemistry)

Best Early Career researchers

Dr Sadik Abubakar Mustafa and Dr Dr. Mukiibi Ssewannyaga Ivan

Best Teachers Award presented to:

Prof. Anne Akol (Department of Zoology, Entomology and Fisheries Sciences), Dr Kalege Peggy (Department of Geology and Petroleum Studies), and Dr Sadik Abubakar Mustafa

4 OUTREACH

4.1 The 2024 International Mathematics Olympiad (IMO)

The Department of Mathematics outreach arm known as *Uganda Mathematical Society* participated in the 2nd International Mathematics Summer Camp in Beijing, China, organized to prepare students for the 2024 International Mathematics Olympiad (IMO) held in Bath, United Kingdom from 11th-22nd July 2024. Team Uganda was led by Dr Joseph Ssebuliba and Dr Alex Samuel Bamunoba from the Department of Mathematics, College of Natural Sciences (CoNAS), Makerere University, and Mr. Medi Ssesanga from Ndejje Senior Secondary School.

The team of Ugandan contestants was made up of six students: 2 female and 4 male as follows; i) Austin Asiimwe – St. Henry's College Kitovu, ii) Busingye Favour Bwesigye – Ntare School, iii) Kelvin Miles Kabali David Senteza – Kings College Budo, iv) Raphael Alpha Oyini – St. Mary's College Kisubi, v) Laetitia Faith Katono – Mt. St. Mary's College Namagunga, vi) Elsie Druscilla Nuwamanya – Ndejje Senior Secondary School.

Right-Left: Dr. Joseph Ssebuliba, Dr Alex Samuel Bamunoba and Mr. Medi Ssesanga with the students at the opening ceremony in Beijing


WORKSHOPS
AND CONFERENCES
5

Department of Plant Sciences, Microbiology and Biotechnology

1. **Dr Patience Tugume**

   i) 9th -13th September 2024: Effective Graduate Students Supervision Training Course organised by the African Institute for Capacity Development (AICAD) and the Ethical Data Initiative (EDI).

   ii) 20th - 26th April 2024: International Molecular Lab training programme by Makerere University & University of Ghent held at Department of Plant Sciences, Microbiology & Biotechnology, Makerere University.

   iii) 15th-18th April 2024: Organization for Women in Science for the Developing World (OWSD) Early Career Fellowship orientation workshop held at International Cetre for Theoretical Physics (ICTP) in Trieste, Italy.

   iv) October 2024: How to make research findings interesting to the media, policymakers and public' as part of the 'Science Communication for Researchers' series by CABI & SciDev.net.

   v) October 2024: Communicating numbers and statistics clearly to the media, policymakers and the public' as part of the 'Science Communication for Researchers' by CABI & SciDev.Net.

   vi) October 2024: Communicating research on Social media as part of the 'Science Communication for Researchers' by CABI & SciDev.Net.

2. **Denis Mutebi**

   i) The 11th Asian Conference on Refrigeration and Air Conditioning. ACRA2024: Title of Presentation - Eco-Friendly, Low-Cost Synthesis of Zeolite from Waste-Pumice and KOH, for Adsorption Heat Pumps, Jeju, South Korea, April 21-24, 2024.

3. **Dr Godwin Anywar**

   i) Attended the World Academy the American Association for the advancement of science in developing countries (TWAS – AAAS) Science Diplomacy course in Trieste, Italy.

   ii) Attended the 2024 World Science Forum (WSF) between 20-23 November 2024 in Budapest, Hungary. The WSF is a joint effort UNESCO, the International Science Council (ISC), the American Association for the Advancement of Science (AAAS), the InterAcademy Partnership (IAP), the World Academy of Sciences (TWAS), the European Academies Science Advisory Council (EASAC), the Global Young Academy (GYA) and the Hungarian Academy of Sciences (MTA) as the host. The theme of the event was ***"The Science and Policy Interface at the Time of Global Transformations"***, He participated in the side event "Trust in Science" – a workshop for Early- Career Researchers organised by the Global Young Academy (GYA) and the InterAcademy Partnership (IAP) at Pesti Vigadó (Budapest).

   iii) Presented work titled ***"Promoting Science Diplomacy for sustainable development in Africa***" as one the co-leads of the Science Diplomacy in Africa working group of the Global Young Academy (GYA) at the twentieth Annual Meeting of the African Science Academies

(AMASA 2024) and the General Assembly of the Network of African Academies of Sciences (NASAC), in Algiers, Algeria, from November 26-28th 2024, at the International Convention Center (CIC). It was hosted by the Algerian Academy of Science and Technology (AAST), under the theme "Resources, Science and Technology for Development in Africa," I was supported by the Algerian Academy of Sciences and the GYA.

iv) Attended the joint meeting of the 23rd International Congress of the International Society for Ethnopharmacology & the 2nd International Congress of the African Phytomedicine Scientific Society (ISE-APSS 2024) at the Cape Town International Convention Centre, Cape Town, South Africa from the 23-26 October 2024, under the theme ***"The Footprint of Ethnopharmacology in Drug Discovery".*** He gave one key note address to early career researchers titled ***"How to become a successful early career scientist through the highs and lows".*** And presented two scientific papers with support from the Swiss National Science Foundation the ISE, and APSS.

v) Attended the African Science Leadership Programme at the Future Africa Campus, at the University of Pretoria from the 20-22 October 2024.

vi) Attended and facilitated at the EU funded Erasmus mobility programme from October 7-11, 2024 at the National and Kapodistrian University of Athens, in Greece. He taught graduate students in the Blended Intensive Programme (BIP), titled "Application of formulation technologies on natural products". He specifically handled a unit titled "Ethnopharmacological data collection from knowledge-holders -Bioprospecting in Drug Discovery. https://civis.eu/en/learn/civis-courses/natural-products-applications-formulations

vii) Attended the Global Young Academy AGM in and International Conference of Young Scientists of the Global Young Academy in Washington DC themed ***"Transformative and Inclusive Science for a Sustainable Future"*** at the United States National Academies of Science, Engineering, and Medicine (NASEM) from May 7-10, 2024.

viii) Moderated a session for region 2 (Africa and Europe) during the Global Indigenous Youth Summit on Climate Change (GIYSCC) on August 9th. He also delivered a paper titled ***"Indigenous knowledge at the nexus between climate change and emerging Infectious Diseases in Africa"***. The GIYSCC is a "virtual dialogue by, for and among Indigenous youth with global inclusion," circling the Earth with the Sun across three 8-hour time zones in 24 hours (00:00-24:00 GMT) on the international day of the world's indigenous peoples. The GIYSCC-2024 was by Future Earth with Science Diplomacy Center™ coordination.

ix) Attended the 2024 CARTA Graduate Grant Writing ToT Workshop, October 28 - November 2, 2024, in Nairobi, Kenya through the Consortium for Advanced Research Training in Africa (CARTA) for prospective organizers and facilitators of the Graduate Grant Writing workshop (GGWW at the Safari Park Hotel in Nairobi, Kenya from October 28 - November 2, 2024, in Nairobi, Kenya.

x) Grant writing Master-class by the Uganda National Council for Science and Technology (UNCST) with support from the Africa Centre for Technology Studies (ACTS) under the Phase II+ of the Science Granting Councils Initiative (SGCI). February 29, 2024.

xi) Member of the organising committee of the NAPRECA-UGANDA CHAPTER annual symposium held on 12 December 2024 at Busitema University under the theme. ***"Mining Natural Products for sustainable Development".*** He presented a key note titled ***"The role of Academia in Sustainable Development of The Natural Products Industry"*** and presented a paper on Medicinal plant species used for the prevention and treatment of malaria in West Nile, Uganda.

xii) Delivered a lecture titled ***"Herbal Remedies for the treatment of HIV/AIDS"*** at the College of Pharmaceutical Sciences & Drug Manufacturing - Misr University for Science & Technology (MUST) 10th Online Workshop to celebrate the World Aids Day. 2/Dec/2024.

xiii) Presented a paper titled ***"Ethnoveterinary medicines used in Uganda: A review of the traditional practices and medicinal plants used, their phytochemistry and bioactivity"*** at The Second Joint International conference of the Society for Ethnobotany (SEB-K) & the Natural Products Network for East & Central Africa (NAPRECA-Kenya) Theme ***"Transforming Natural Products Through Innovation, Sustainability & Commercialization"***.

Department of Mathematics

4. Dr Patrick Ssebugere

i) 5th Commonwealth Chemistry Posters. Theme: "Building Networks to Address Goals". Held 11-12 September 2024 (virtually).

ii) North-South chemistry workshop. Theme "Networking as a key driver to scientific innovation". Held 5 June 2024, at Jomo Kenyatta University of Agriculture and Technology.

Outreach activities –Department of Plant Sciences, Microbiology, and Biotechnology

i) Conducted training of women and youth from different divisions of Mbarara City in production of biogas from foodwastes. Advocated for the use of biogas as an alternative source of cooking energy to curb the increasing rate of deforestation and climate change. Some photos for the training are attached.

ii) Established linkages with private partners (Rwanjeru Agro-tourism Farm in Mbarara and Cielo Ecofarm and Agribusiness skilling centre) in biogas production for further skilling of youth and women to encourage uptake of biogas production and utilisation at household level.

AWARDS AND RECOGNITIONS

6.1 Dr Tugume Patience Wins OWSD Early Career Fellowship

Dr Tugume Patience, a Lecturer in the Department of Plant Sciences, Microbiology and Biotechnology at the College of Natural Sciences (CoNAS), Makerere University is one of the 28 women who have been granted the 2023 OWSD Early Career Fellowship. These scientists will receive up to USD50,000 to lead research projects and establish research groups at their home institutions in 16 countries in the developing world, to maintain an international standard of research and attract scholars from all over the world to collaborate. Funding for the fellowships is generously provided by Canada's International Development Research Centre (IDRC). During the 3-year fellowship, fellows will receive specific training to build on their leadership and management skills and develop connections with a variety of public and private sector partners to potentially convert their research into marketable products or guarantee its impact on a broader scale. By improving their communication and outreach skills, fellows will also learn to effectively present their research to various audiences, thus attracting new collaborators and potential funders to ensure the sustainability of the research project.

Dr Tugume's Project – Biological Systems and Organisms

This project will use various forms of bio-wastes from households and urban centres in Uganda as raw materials for production of biogas, as well as an eco-friendly bio-fertilizer and bio-pesticide.

6.2 Prof. Esezah Kakudidi honoured with UWESO Award

Prof. Esezah Kakudidi from the Department of Plant Sciences, Microbiology and Biotechnology received a UWESO Founders award from the first Lady of Uganda, also founder and patron. Prof. Kakudidi has served on the NEC of the organization for some time.

6.3 CARTA Fellow Dr Godwin Anywar Appointed Member of BMC Editorial Board

Dr Godwin Anywar, Lecturer in the Department of Plant Sciences, Microbiology, and Biotechnology was appointed a Member of the Editorial Board of BMC Complementary Medicine and Therapies on June 18, 2024. The appointment is on a rolling basis, renewable after every two years. He was also appointed as an executive of the African Research Network on Medicinal Plants and Natural Products Research by the Society for Medicinal Plant and Natural Product Research (GA), and member of the Editorial Board, Discover Molecules - Springer Nature 5th August 2024

Awards

1. Young Scientist Award in the category of Phytochemicals & Medicinal Plants, -2024 by the Society for Plant Research (SPR), in India
2. Post-doctoral Travel Grants for the International Congress on Natural Products Research in Kraków, Poland July, 2024

6.4 Ms. Juliet Zake honoured with Long Service Award

Ms. Zake served Makerere University as secretary in different Units for 36 years, 17th/11/1988.27th/10/2024. The Award was presented to her by the Vice Chancellor, Prof. Barnabas Nawangwe.

6.5 Prof. Winston Tumps Ireeta appointed Chair 2024 Materials Research Society (MRS) Fall Meeting and Exhibit

The 2024 MRS Fall Meeting & Exhibit was held at the Hynes Convention Center and the Sheraton Boston Hotel in Boston, Massachusetts, December 1 – 6, 2024. The MRS Fall Meeting delivers a combination of interdisciplinary cutting-edge research, innovative technologies, and collaborative networking with the field's leading minds, which leads to new discoveries in areas ranging from quantum materials to energy and sustainability. This cluster (MRS 2024) features two symposia. The first focuses on broadening the impact of materials research through the democratization of artificial intelligence and the second focuses on highlighting early career faculty in materials research.

6.6 Prof. Eric Sande appointed Co-Director of MUBFS

Makerere University Council appointed Prof. Eric Sande, a member of staff in the Department of Zoology, Entomology, and Fisheries Sciences, Co-Director of the Makerere University Biological Field Station (MUBFS), Kibaale. The University Management also set up an interim Committee comprising of staff from CoNAS and CAES to manage MUBFS. MUBFS is one of Africa's leading research and training centers established in 1970 as Kibale Forest Project-KFP by Dr. Thomas Struhsaker, a renowned primatologist and scholar from Duke University, USA. It (MUBFS) is a year-round field research station accommodating up to 85 researchers and trainees and upholding the objectives of Research, Education, and Conservation which KFP set out to achieve.

HUMAN RESOURCES

7.1 Department Heads handover ceremonies

i) Zoology, Entomology, and Fisheries Sciences

Makerere University Council in December 2023 appointed Dr Godfrey Kawooya Kubiriza as Head, Department of Zoology, Entomology, and Fisheries Sciences at the College of Natural Sciences (CoNAS). Dr Kubiriza will serve in the position for a period of four years effective March 2024. He took on from Dr Eric Sande who held the position since 2016. Dr Sande handed over office on 4th March 2024

ii) Mathematics

Makerere University Council at its 722nd meeting held on 12th December 2023 appointed Dr Geoffrey Ismail Mirumbe as Head, Department of Mathematics for the next four years effective March 2024. Dr Mirumbe took on from Prof. Godwin Kakuba who served in the position for four years starting March 2020. Prof. Kakuba officially handed over office on 1st March 2024.

iii) Chemistry

At its 722 meeting held on 12th December 2023, Makerere University Council appointed Dr Emmanuel Tebandeke as the next Head, Department of Chemistry at the College of Natural Sciences (CoNAS). Dr Tebandeke will head the Department for the next four years effective March 2024. He took on from Dr John Wasswa who served in the position for eight years starting 2016. The official handover ceremony was held on 1st March 2024 at the Department premises.

7.2 Table 8: Appointments, Promotions, Confirmations, & Resignations

Promotions			
NO	**NAME**	**DEPARTMENT**	**RANK**
1.	Prof. James Kalema	Plant Sciences, Microbiology & Biotechnology	Professor
2.	Dr Alex Okello	Physics	Lecturer
3.	Dr Nathan Muyinda	Mathematics	Lecturer
4.	Dr Ivan Mukiibi Ssewannyaga	Geology and Petroleum Studies	Lecturer
Confirmations			
1.	Dr Hebert Kasozi	Zoology, Entomology and Fisheries Sciences	Lecturer
2.	Ms. Medron Balengesya	Chemistry	Technical Assistant
3.	Mr. Benson Openy	Chemistry	Technical Assistant
4.	Ms. Robinah Kyomukama	Biochemistry and Sports Science	Sanitary Cleaner
5.	Mr. Fred Sekandi	Plant Sciences, Microbiology and Biotechnology	Nursery Man
Contract appointments			
1.	Mr. Will Kasule	Geology and Petroleum Studies	Assistant Technician
2.	Mr. Patrick Mulindwa	Chemistry	Assistant Lecturer
3.	Mr. Drake Ssempijja	Zoology, Entomology and Fisheries Sciences	Assistant Lecturer
Resignations			
1.	Dr. Moses Chemurot	Zoology, Entomology, Fisheries Sciences	Lecturer
2.	Dr. Willy Okullo	Physics	Senior Lecturer
Deceased			
1.	Dr Paul Ssegawa	Plant Sciences, Microbiology and Biotechnology	Herbarium Curator

2024 PUBLICATIONS

Department of Chemistry

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STAFF
ESTABLISHMENT

College of Natural Sciences		Principal – Prof. Winston Tumps Ireeta Deputy Principal – Prof. Juma Kasozi
S/N	**Name of Staff**	**Position**
	Mathematics Department **School of Physical Sciences** **Head of Department: Dr. Geoffrey Ismail Mirumbe**	
1.	Prof. Joseph Y. T. Mugisha	Professor
2.	Prof. John Magero Mango	Associate Professor
3.	Prof. Juma Kasozi	Associate Professor *(Deputy Principal)*
4.	Prof. David Ssevviiri	Associate Professor
5.	Prof. Betty Kivumbi Nannyonga	Associate Professor
6.	Prof. Godwin Kakuba	Associate Professor
7.	Dr. Saul Hannington Nsubuga	Lecturer
8.	Dr. Ismail Geoffrey Mirumbe	Senior Lecturer/ HoD
9.	Dr. Joseph Ssebuliba	Senior Lecturer
10.	Dr. Hassan Ddumba	Lecturer
11.	Dr. Henry Kasumba	Lecturer
12.	Dr. Alex S. Bamunoba	Senior Lecturer
13.	Dr. Fred Mayambala	Lecturer
14.	Dr. Alex Behakanira Tumwesigye	Lecturer
15.	Dr. Onesfole Kurama	Lecturer
16.	Dr. Mahad Ddamulira	Lecturer
17.	Dr. Juliet Nakakawa Nsumba	Lecturer
18.	Dr. Denis Wokiyi	Lecturer
19.	Mr. Wilber Grace Naigambi	Lecturer
20.	Mr. Yasin Kikabi	Assistant Lecturer
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22.	Dr. Hassan Wasswa Kayondo	Lecturer
23.	Mr. David Ddumba Walakira	Assistant Lecturer
24.	Dr. Nathan Muyinda	Assistant Lecturer
25.	Dr. Innocent Ndikubwayo	Lecturer
SUPPORT STAFF		
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27.	Habarurema Andrew	Cleaner/Messenger
28.	Namembwa Agnes	Cleaner/Messenger
29.	Kabanda Fredrick	Messenger
30.	Abel Wandera	Book bank Librarian
	Chemistry Department **School of Physical Sciences** **Head of Department: Dr. Emmanuel Tebandeke**	
31.	Prof. Robert Byamukama	Professor

32.	Prof. Muhammad Ntale	Professor
33.	Dr. George William Nyakairu	Assoc. Professor
34.	Dr. John Wasswa	Senior Lecturer
35.	Dr. Gabriel Kasozi	Senior Lecturer
36.	Dr. Betty B. Naziriwo	Senior Lecturer
37.	Dr. Emmanuel Tebandeke	Senior Lecturer (HoD)
38.	Dr. Patrick Ssebugere	Senior Lecturer
39.	Dr. Jane Namukobe	Senior Lecturer
40.	Mr. James Sekamatte	Lecturer
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SUPPORT STAFF

56.	Mr. Bonny Balikuddembe	Principal Technician
57.	Ms. Patience Natumanya	Senior Technician
58.	Mr. Ibrahim Nalukuba	Senior Technician
59.	Mr. Jjagwe Nkalubo Geoffrey	Senior Technician
60.	Mr. Tindyebwa Sam	Technician I
61.	Mr. Brian Kusiima	Technician
62.	Mr. Benson Openy	Technician
63.	Mr. Kavuma Peter	Technician II
64.	Mr. Ssensamba Dan	Technician II
65.	Mr. Barasa Godfrey Mussitwa	Laboratory Assistant
66.	Ms. Nabachwa Margaret	Copy Typist
67.	Mr. Kasozi John	Laboratory Assistant
68.	Mr. Amanya Jackson	Laboratory Assistant
69.	Mr. Mukasa Edward	Technical Assistant
70.	Ms. Medron Balengesya	Technical Assistant
71.	Mr. Mutenyo M.	Laboratory Attendant

Geology and Petroleum Studies Department
School of Physical Sciences
Head of Department: Dr. Arthur Batte

72.	Dr. Michael Owor	Assoc. Prof./Dean(SPS)
73.	Dr. Betty Nagudi	Senior Lecturer
74.	Dr. Arthur Batte	Senior Lecturer/ HoD
75.	Dr. John Mary Kiberu	Lecturer
76.	Dr. Kevin Aanyu	Lecturer
77.	Dr. Simon Echegu	Lecturer
78.	Ms. Peggy Kalegga Kulyanyingi	Lecturer
79.	Mr. Lauben Twinomujini	Assistant Lecturer
80.	Mr. Wycliff Kawule	Assistant Lecturer
81.	Mr. Ivan Mukiibi Ssewannyaga	Assistant Lecturer
82.	Ms. Stella Joanita Atugonza	Assistant Lecturer
83.	Ms. Joan Nakajigo	Assistant Lecturer
84.	Mr. Denis Mutebi	Assistant Lecturer
85.	Mr. Hillary Mwongyera	Assistant Lecturer
86.	Ms. Susan Kigozi	Chief Technician
87.	Mr. Moses Kasaka	Principal Technician

SUPPORT STAFF

88.	Ms. Jeninah Tumwebaze	Senior Copy Typist
89.	Ms. Grace Ssekamanya	Laboratory Attendant
90.	Mr. Enock Emodock	Laboratory Attendant

Physics Department
School of Physical Sciences
Head of Department: Dr. Denis Okello

91.	Winston Tumps Ireeta	Associate Professor/Principal
92.	Taddeo Ssenyonga	Associate Professor
93.	Denis Okello	Senior Lecturer
94.	Ssebiyonga Nicolausi	Senior Lecturer
95.	Oruru Bosco	Senior Lecturer
96.	Mukiibi Daniel	Senior Lecturer
97.	Karidewa Nyeinga	Senior Lecturer
98.	Zawedde Annet Eva	Lecturer
99.	Eneku John Paul	Lecturer
100.	Ayugi Gertrude	Lecturer
101.	Kwarikunda Nicholas	Lecturer
102.	Okello Alex	Lecturer
103.	Elizabeth Naluminsa	Lecturer
104.	Nelson Ndugu	Lecturer

105.	Muyimbwa Dennis	Lecturer
106.	Twinamasiko Benon Fred	Assistant Lecturer
107.	Sembito Alex	Assistant Lecturer
108.	Tusiime Swaleh	Assistant Lecturer
109.	Nayibinga Mercline	Principal Technician
110.	Nteziyaremye Ronald	Senior Technician
111.	Kibingo Bridget	Technical Assistant
112.	Ronald Bwambale	Technical Assistant
113.	Kawumba Moses	Laboratory Assistant
114.	Nannungi Eva	Administrative Secretary III
115.	Asasira Abias	Chief Custodian
116.	Kobusingye Stella	Cleaner

Biochemistry and Systems Biology Department
School of Biosciences
AG. Head of Department: Dr. Agnes Nandutu Masawi

117.	KYAMBADDE Joseph	Senior Lecturer
118.	HAWUMBA Joseph Fuuna	Associate Professor
119.	ALIBU Pius Vincent	Senior Lecturer
120.	MASAWI Agnes Nandutu	Senior Lecturer/HoD
121.	KASOZI Denis Matovu	Senior Lecturer
122.	ISABIRYE Dan	Lecturer
123.	BAINGANA Rhona	Senior Lecturer
124.	ISANGA Joel	Lecturer
125.	BALYEIDHUSA Apollo Simon Peter	Lecturer
126.	RUTARO Karlmax	Lecturer
127.	NERIMA Barbara	Lecturer
128.	MULINDWA Julius	Senior Lecturer
129.	GUMISIRIZA Robert	Lecturer
130.	BUTUNGI Hellen	Assistant Lecturer
131.	AGUTTU Clare	Assistant Lecturer
132.	OKOL Moses	Assistant Lecturer
133.	OMARA John	Assistant Lecturer
134.	MUKISA Ambrose	Chief Technician
135.	NIWAGABA Stuart	Principal Technician
136.	MUGENYI Godfrey	Senior Technician
137.	MUKAMA William	Technician

SUPPORT STAFF

138.	NAMANDE Prossy	Laboratory Assistant
139.	KALEERA George	Cleaner
140.	KHAINZA Beatrice Shillah	Cleaner

141.	SSEMUJU Francis	Laboratory Attendant

Exercise and Sports Science Department
School of Biosciences
AG. Head of Department: Dr. Bernadette Nakabazzi

142.	KASOMA Sandra Sarah	Senior Lecturer
143.	WANDERA Besweri	Assistant Lecturer
144.	BAMWEYANA Deogratious	Assistant Lecturer
145.	OOLA Stephen Kidega	Assistant Lecturer
146.	MUGISHA Lillian	Assistant Lecturer
147.	NAKAZIBWE Winifred	Assistant Lecturer
148.	NAKABAZZI Bernadette	Lecturer

SUPPORT STAFF

149.	KYOMUKAMA Robinah	Cleaner

Zoology, Entomology and Fisheries Sciences Department School of Biosciences
Head of Department: Dr. Godfrey Kawooya Kubiriza

150.	Prof. Muyodi Fredrick Jones	Professor
151.	Dr. Anne Margaret AKOL	Associate Professor
152.	Dr. Charles Masembe	Associate Professor
153.	Dr. Efitre Jackson	Senior Lecturer
154.	Dr. Bwanika Gladys Namuswe	Senior Lecturer
155.	Dr. Sande Eric	Assoc. Professor
156.	Dr. Kisakye John Joseph Mbago	Lecturer
157.	Dr. Akoll Peter	Senior Lecturer
158.	Dr. Ronald Semyalo	Lecturer
159.	Dr. Robinson Odong	Lecturer
160.	Dr. Perpetra Akite	Lecturer
161.	Dr. Nalwanga Rosemary	Lecturer
162.	Dr. Godfrey Kawooya Kubiriza	Senior Lecturer (HoD)
163.	Dr. Nattabi Juliet Kigongo	Lecturer
164.	Dr. Herbert Kasozi	Lecturer
165.	Mr. Drake Ssempijja	Assistant Lecturer
166.	Matovu Bernard	Assistant Lecturer
167.	Ndagire Noeline	Chief Technician
168.	Niyonzima Eustace	Principal Technician
169.	Namagala Virginia	Senior Technician
170.	Sseddyabane Nsubuga David	Lab. Assistant
171.	Walyelo Alex	Technician
172.	Muchunguzi Joshua	Lab. Assistant
173.	Odur Luka	Technical Assistant

SUPPORT STAFF

174.	Catherine Akello	Administrative Sec. III
175	Nakayiza Mary	S/Cleaner
176.	Atwijukire Mercy	Messenger

Plant Sciences, Microbiology and Biotechnology Department School of Biosciences
Head of Department: Dr. Jamilu Edirisa Ssenku

177	Arthur Kajungu Tugume	Assoc. Professor (Dean, SBS)
178.	James Kalema	Professor
179.	Esther Katuura Mwebesa	Senior Lecturer
180.	Shahasi Yusuf Athman	Lecturer
181.	Jamilu Edirisa Ssenku	Senior Lecturer (HoD)
182.	Esther Nakamatte	Lecturer
183.	Patience Tugume	Lecturer
184.	Collins Edward Bulafu	Lecturer
185.	Anthony Mutebi Nsubuga	Lecturer
186.	Dorothy Ndagire	Lecturer
187.	Alice Nabatanzi	Lecturer
188.	Byarugaba Savina Asiimwe	Lecturer
189.	Alfred Ozimati	Lecturer
190.	Mary Namaganda	PA Herbarium Curator
191.	Godwin Anywar	Lecturer
192.	Abubaker Sadik Mustafa	Assistant Lecturer
193.	Teddy Mary Asiimwe Tindyebwa	Assistant Lecturer
194.	Lydia Nabyonga	Assistant Lecturer
195.	Margaret Atim	Assistant Lecturer
196.	Cyprian Osinde	Assistant Lecturer
197.	Samuel Ojelel	Assistant Lecturer
198.	Moses Zziwa	Principal Technician
199.	David Muhereza Begumya	Senior Technician
200.	Christian Abba	Technical Assistant I
201.	Stanley Ofwono	Laboratory Assistant
202.	Geofrey Ssegendo	Technician

SUPPORT STAFF

203.	Grace Wandera	Copy Typist
204.	Robert Kiruge	Grounds man
205.	Fred Ssekandi	Grounds man
206.	Richard Mfitumukiza	Cleaner

Principal's Office

207	Ms. Joyce Nyiramahoro	Senior Assistant Registrar
208.	Ms. Hasifa Mukyala	Administrative Assistant
209.	Ms. Eleanor Nandutu	Senior Assistant Registrar
210.	Ms. Shivon Atwine	College Procurement Officer
211.	Ms. Sarah Nakayima	College Librarian
212.	Ms. Hasifa Kabejja	College Communication Officer
213.	Mr. David Kisitu	College IT Officer
214.	Ms. Claire Birungi	College Bursar
215.	Ms. Kevin Nabiryo Mikwano	College Human Resource Officer
216.	Ms. Loyce Amoding	Administrative Secretary I
217.	Mr. Moses Kasagga	Computer Technician

SUPPORT STAFF

218.	Ms. Emily Namatovu	Secretary/ Dep. Principal
219.	Ms. Lovinah Atuhaire	Admin. Secretary I /Dean SPS
220.	Mr. Epaphra Barenga	Accounts Clerk
221.	Ms. Brenda Akwel	Library Assistant
222.	Mr. Samuel Omaset	Library Assistant
223.	Mr. James Sserwada	Technician II
224.	Mr. Phillip Kagoro Mujwisa	Driver
225.	Mr. Timothy Katuramu	Clerical Officer
226.	Mr. Charles Kiyingi	Machine Operator
227.	Mr. Charles Munyamasoko	Cleaner
228.	Ms. Allen Ssanyu Nalyazi	Cleaner
229.	Ms. Margaret Namwase	Cleaner
230.	Ms. Anne Nakintu	Sanitary Cleaner
231.	Mr. Stephen Mugisa	Cleaner
232.	Ms. Regina Nakabuye	Cleaner
233.	Mr. Yazid Lubanga	Cleaner
234.	Ms. Asina Tibesigwa	Cleaner
235.	Mr. Anthony Kawongolo	Cleaner
236.	Mr. Siraki Igulu	Cleaner
237.	Mr. Davis Amanya	Cleaner
238.	Ms. Joyce Nakafeero Nakato	Cleaner
239.	Mr. Nobert Bagaba	Cleaner
240.	Ms. Mary Nakato	Cleaner
241.	Ms. Naswiba Nakasolo	Cleaner
242.	Mr. Isma Kalinaki	Cleaner
243.	Ms. Ruth Nansubuga	Cleaner
244.	Mr. Stephen Egaru	Cleaner

245.	Mr. Onesmus Ndamurira	Cleaner
246.	Ms. Peninah Nassozi	Cleaner
247.	Ms. Gorret Kagoya	Cleaner
248.	Mr. Junior Francis	Cleaner
249.	Mr. Abusorom Gumisiriza	Cleaner
250.	Ms. Josephine Joyce Nakyajja	Security Guard
251.	Mr. Girisomu Ndaada	Security Guard
252.	Mr. Bosco Okema	Security Guard

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