Makerere University

WE BUILD FOR THE FUTURE

College of Engineering, Design, Art and Technology

Annual Report 2021

MAKERERE UNIVERSITY
Leveraging 100 years of Excellence
in Building a Transformed Society

19th January, 2022

Makerere University Vision

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

Makerere University Mission

To provide transformative and innovative teaching, learning, research and services responsive to dynamic national and global needs

Strategic focus areas of the University

University Strategic Objectives

1. To promote a flexible, appropriate and integrated learning environment that transforms students' experiences to respond to societal needs.
2. To strengthen research and innovations for sustainable development.
3. To sustain mutually beneficial engagements and partnerships nationally and internationally.
4. To streamline institutional governance and management processes.
5. To attract, recruit, and retain high-quality workforce.
6. To provide facilities that meet our evolving needs.
7. To broaden the University financial resource base.

Core Values

Excellence
Accountability
Professionalism
Integrity
Respect and Inclusivity

Acronyms and Abbreviations

ACE	-	Africa Center of Excellency
ADA	-	Austrian Development Agency
CEDAT	-	College of Engineering, Design, Art and Technology
CREEC	-	Centre for Research in Energy and Energy Conservation
COVID19	-	Corona Virus discovered in 2019
EACREEE	-	East Africa Center of Excellence for Renewable Energy and Energy Efficiency
GCRF	-	Global Challenges Research Fund
GIS	-	Geographical Information Systems
GoU	-	Government of Uganda
ISO	-	International Standards Organization
IUCEA	-	Inter University Council for East Africa
IHCR	-	Institute of Heritage Conservation and Restoration
Mak CHS	-	College of Health Sciences, Makerere University
MAPRONANO-		Materials, Product Development and Nanotechnology
MoU	-	Memorandum of Understanding
MTSIFA	-	Margaret Trowell School of Industrial and Fine Art
PGD	-	Post Graduate Diploma
PI	-	Principal Investigator.
PRESIDE	-	Presidential Initiative on Diseases and Epidemics
RIF	-	Research and Innovation Fund
RUFORUM	-	Regional Universities Forum
SEED	-	Sustainable Energy and Entrepreneurship Development
TUM	-	Technical University of Munich
UCC	-	Uganda Communication Commission
UIRI	-	Uganda Industrial Research Institute
UK	-	United Kingdom
UNIDO	-	United Nations Industrial Development Organization
USAMRIID	-	United States Military Research Institute on infectious Diseases
UVQF	-	Uganda Vocational Qualification Framework
WHO	-	World Health Organization

Contents

A word from The Principal

The College of Engineering, Design, Art and Technology (CEDAT) was formed following a merger of a number of Faculties that include, Faculty of Technology and the Margaret Trowell School of Industrial and Fine Arts (MTSIFA) and this took effect on the 13th December 2010. The former Faculty of Technology was founded in 1970 while the Margaret Trowell School of Industrial and Fine Arts (MTSIFA) opened doors to students in 1930s.

CEDAT is a college of Makerere University as provided in Section 29 of the Universities and Other Tertiary Institutions Act (2001) as amended.The college became operational on 1st February 2011 and has therefore been in existence for the last 11 years.

This report is about the activities carried out by the College in the Calendar Year 2021. A lot was achieved in the key mandate areas of the college, i.e teaching and learning, research and innovations and community outreach.

The performance could have been a lot better if it was not for the COVID19 pandemic that led to lockdown for sometime and also led to staggered physical appearance of students at campus. The scope of coverage of practical aspects was affected due to the closure. Most of the teaching was done online. In many cases, the students and staff were learning how to use the online systems for the first time. Even most of the exams for Semester I for continuing exams were done online and this presented a new approach altogether. We are happy to report that the College was able to navigate through the challenges.
The College would like to thank all students, staff, university management, Council, Government and all stakeholders for the commitment to deliver in 2021.

The College is committed to transformative innovative teaching, learning, research and services responsive to dynamic national, regional and global needs in its made of Engineering, Design, Art and Technology.

1.0 Introduction and background

1.1 Introduction

The College of Engineering, Design, Art and Technology (CEDAT) was formed following a merger of a number of Faculties that include, Faculty of Technology and the Margaret Trowell School of Industrial and Fine Arts (MTSIFA) and this took effect on the 13th December 2010. The college started operating on 1st February 2011 and has therefore been in existence for the last 11 years. CEDAT is a College of Makerere University as provided in Section 29 of the Universities and Other Tertiary Institutions Act (2001) as amended.

1.2 CEDAT Mandate

This falls within the overall mandate of Makerere University namely;

a) Provision of higher education through teaching and learning, research and knowledge transfer partnerships in Engineering, Design, Art and Technology;

b) Dissemination of knowledge and giving opportunity of acquiring higher education to all persons regardless of sex, race , color or whether one has a disability or not.

c) Provision of accessible physical facilities to the users of the Public University

1.3 CEDAT MISSION Statement

To provide transformative innovative teaching, learning, research and outreach services responsive to dynamic national, regional and global needs in Engineering, Design, Art and Technology.

1.4 CEDAT structure and administrative units

The College has an Academic Board as well as an Administrative Board at stipulated in the College Statute (2012). The College Academic Board is composed of the academic members of the College, student representatives and the College Registrar serves as the Secretary. This mainly handles academic matters. The College Administrative Board is Comprised of Top Management of the College and a student representative.

The Principal is the executive head of the Board and Professor Henry Alinaitwe is the current Principal, deputized by Dr. Venny Nakazibwe.

The Boards work closely with other organs such as the subcommittees and the Establishment and Appointments Committee as a way of ensuring that all issues that arise at the College are addressed.

1.4.1 Schools, Departments and administrative offices

CEDAT is made up of three (3) schools that are headed by Deans. They are charged with taking leadership in areas of programming, coordination and management of the respective units that are lined up according to the disciplines.

1.4.1.1 School of Engineering

Dr. Dorothy Kabagaju Okello is the Dean of the School of Engineering. The School comprisesof three departments namely Mechanical Engineering headed by Prof. John Baptist Kirabira, Electrical and Comouter engineering headed by Dr. Jonathan Serugunda (Acting) and Civil and Environmental Engineering headed by Dr. Robinah Nakawunde Kulabako.

1.4.1.2 School of the Built Environment

Prof. Moses Musinguzi is the Dean of the School that is made of three departments. Architecture and Physical Planning is headed by Dr. Amin Tamale Kiggundu, Geomatics and Land Management headed by Dr. Lydia Florence Mazzi Kayondo-Ndandiko, and Construction Economics and Management headed by Dr. Nathan Kibwami (Acting).

1.4.1.3 Margaret Trowell School of Industrial and Fine Art

Under the leadership of Assoc. Prof. Kizito Maria Kasule, the unit is comprised of the Department of Visual Communications headed by Dr. Amanda Tumusiime, The Department of Industrial and Applied Design headed by Mr. Mwesigwa Luyombya (Acting); and the Department of Fine Art headed by Assoc. Prof. Francis Ifee (Acting).

1.4.1.4 Institute and Centres

CEDAT has one (1) Institute and six (6) Centres. The Table below shows a summary of the activities, the target groups as well as the Principal Investigators for the various Institutes and Centers in the College.

Institute/Center	Area of focus	Target Group	Partners	Principal Investigator /Head
The Institute of Heritage Conservation and Restoration	Art University Gallery	Students and staff. General Population	Israel	Assoc. Prof. George Kyeyune
Centre for Research in Energy and Energy Conservation	Rural electrification. Energy for productive use/household use Renewable energy technologies	Students General population	GIZ GoU	Ms. Susan Abbo (External staff)
Centre for Research in Transportation Technologies	Green Transport Technologies	Students Business Community	GoU	Dr. Hilary Kasedde
Centre for Technology Development and Transfer	Solar Technology Incubation of student innovations	Students The community Industry	GoU Industries	Dr. Michael Lubwama.
Centre for Geographical Information Systems (GIS)	GIS research Short courses	Community GIS users Researchers	GoU	Dr Lydia M. F. Kayondo-Ndandiko.
The East African Center of Excellence in Renewable Energy and Energy Efficiency (EACREEE)	Renewable energy Energy Efficiency	East African Community member states	UNIDO, ADA and supported by the East African Community.	Can Goddy Muhumuza Muhanguzi
The Africa Center of Excellence for Materials, Product Development and NanoTechnology (MAPRONANO)	Nanotechnology Materials development Nano medicine	Students Policy makers Industry	World Bank IUCEA MakCHS USAMRIID	Prof. J B M Kirabira

2.0

Teaching and Learning

2.1 Programmes offered at CEDAT

The college currently offers twelve undergraduate programs and thirteen graduate programs. Of the graduate programs eleven are Masters while two are Post Graduate Diploma (PGD) programs. The College offers PhD on research only basis.

Programs offered in various Schools in CEDAT

	Undergraduate	Graduate	
Department		Masters	Ph.D
School of Built Environment			
Department of Architecture and Urban Planning	Bachelor of Architecture Bachelor of Urban and Regional Planning	Master of Architecture MSc. Urban Planning and Design Post Graduate Diploma in Urban Planning and Design	PhD
Department of Construction Economics and Management	BSc Construction Management BSc Land Economics BSc Quantity Surveying	MSc Construction Management Post Graduate Diploma in Construction Project Management	PhD
Department of Geomatics and Land Management	BSc Land Surveying and Geomatics	MSc Geo- Information Science and Technology	PhD
School of Engineering			
Department of Civil and Environmental Engineering	BSc Civil Engineering	MSc Civil Engineering	PhD
Department of Electrical and Computer Engineering	BSc Electrical Engineering BSc Computer Engineering BSc Telecommunication Engineering	MSc Power Systems Engineering MSc Telecommunications Engineering MSc Renewable Energy	PhD
Department of Mechanical Engineering	BSc Mechanical Engineering	MSc Mechanical Engineering MSc Technological Innovation and Industrial Development	PhD
Margaret Trowell School of Industrial and Fine Art			
	Bachelor of Industrial and Fine Art	Master of Arts in Fine Art	PhD

Note: All PhDs at CEDAT are by Research only

2.2 Programmes revised in 2021

During the year 2021, all programmes at CEDAT were reviewed and submitted to Senate. So far, a number have been approved and others still in the process. The under listed programmes were approved by the University Council in 2021 and will be forwarded to the National Council for Higher Education for accreditation.

School	Department	Programme approved by Council in 2021	Comment
School of Engineering	Mechanical Engineering	BSc Mechanical Engineering	
		MSc Mechanical Engineering	
		MSc Technology Innovation and Industrial Development	
		MSc Renewable Energy	Being transferred to the department
	Electrical and Computer Engineering	BSc Electrical Engineering	
		BSc Telecommunication Engineering	
	Civil and Environmental Engineering	BSc Civil Engineering	
		MSc Civil Engineering	
School of the Built Environment	Geomatics and Land Management	MSc in Geo-information Science and Technology	
		MSc Land Management	New programme
Margaret Trowell School of Industrial and Fine Art	Department of Industrial Art and Applied Design	Bachelor of Industrial Art and Applied Design	New programme
	Department of Fine Art	Bachelor on Fine Art	New programme
	Department of Visual Communication Design and Multimedia	Bachelor of Visual Communication Design and Multimedia	New programme

2.3 Teaching and Learning during 2021

Just like the rest of the University, the Semester I 2020/21 started on 6th February 2021 and was conducted both online and physically in a staggered manner for all students.

Exams for Finalists, Graduate students and those of Architecture were conducted physically in April – May 2021. However, exams for continuing students which had been planned for were disrupted due to the emergency of the COVID19 second wave when another lockdown was announced by Government on 5th May 2021. The exams were suspended and conducted later in September 2021.

Teaching and learning resumed online on 31st August 2021 for the Graduate students, Finalists and Architecture students and there was a period of physical interaction before physical exams which were held from 15th to 30th November 2021.

The online exams for continuing students for 1st Semester 2020/21 were conducted during September 2021. Staggered teaching and learning continued through October – December 2021. Then exams for the continuing students were held during January 2021.

2.4 Student numbers in 2020/21 academic year

All semester exams at CEDAT were conducted. The table below shows the number of students who sat for exams in the year 2021. There are provided by school and departments. The numbers for Semester I and those in Semester 2 are provided.

School of Engineering	*Year*	*No. students Sem1.*	*No. students Sem 2.*	**Comment**
School of Engineering				
Department/ Program				
Mechanical Engineering				
BSc. Mechanical Engineering	1	132	141	Includes also BSc. Bioprocess Eng. , BSc. Water and Irrigation Eng. & BSc Agricultural. Eng.
	2	119	171	Includes also BSc. Bioprocess Eng. , BSc. Water and Irrigation & BSc Agricultural. Eng.
	3	65	78	
	4	58	72	
MSc. Mechanical Engineering	1	16	21	
MSc Technological Innovation and Industrial Development	1	27	34	
Electrical and Computer Engineering				
BSc. Electrical Engineering	1	62	146	Combines BSc Electrical & BSc Telecom Eng. + Biomedical Eng.
	2	59	200	Combines BSc Electrical & BSc Telecom Eng. + Biomedical Eng.
	3	52	56	Combines BSc Electrical & BSc Telecom Eng.
	4	65	102	Combines BSc Electrical & BSc Telecom Eng.
BSc. In Computer Engineering	1	40	65	
	2	31	35	

	3	24		27
	4	32		
BSc. In Telecommunication Engineering	1	44	Combined with Electrical Eng.	
	2	44		
	3	30		
	4	45		
MSc. In Power System Engineering	1	12	17	
MSc Telecommunications Engineering	1	5	7	
Msc. In Renewable Energy	1	22	15	
Civil and Environmental Engineering				
BSc. In Civil Engineering	1	94	102	
	2	95	142	
	3	101	93	
	4	105	87	
MSc Civil Engineering	1	34	27	
Total for School of Engineering	Total	1413	1638	
School of the Built Environment				
Program	Year	No. students Sem1.	No. students Sem 2.	
Architecture and Physical Planning				
Bachelor of Urban and Regional Planning	1	26	28	
	2	33	35	
	3	18	18	
	4	39	34	
Bachelor of Architecture	1	29	27	
	2	29	28	
	3	23	26	

	4	27	31	
	5	24	26	
MSc. in Urban Planning and Design	1	13	13	
Master of Architecture	1	1	1	
PGD. In Urban Planning and Design	1	5	5	
Geomatics and Land Management				
BSc. Land Surveying and Geomatics	1	36	36	
	2	32	32	
	3	28	28	
	4	72	70	
MSc. Geo- Information Science and Technology	1	25	27	
	2	18	18	
Construction Economics and Management				
BSc. In Land Economics	1	54	54	
	2	58	57	
	3	34	30	
	4	46	47	
BSc. In Construction Management	1	45	47	
	2	56	58	
	3	47	44	
BSc. Quantity Surveying	1	38	37	
	2	52	51	
	3	44	44	
	4	50	51	
MSc. Construction Management.	1	13	13	
	2	20	20	
PGD Construction Management	1	13	13	
	Total	1048	1049	
Margaret Trowell School of Industrial and Fine Art				
Program	Year	No. students Sem1	No. students Sem 2.	

B.A in Fine Art	1	158	161	
	2	138	139	
	3	149	149	
Master of Arts in Fine Art	1	15	13	
	Total	**460**	**462**	
Summary				
School of Engineering		1413	1638	
School of the Built Environment		1048	1049	
MTSIFA		460	462	
Total		**2921**	**3149**	

Summary of students who sat for exams at CEDAT

Distribution of students	Semester I (May and September 2021)	Semester II (November and December 2021/Jan 2022)
Graduate students	198	134
Undergraduate finalists	682	552
Continuing students	2041	2463
TOTAL	**2921**	**3149**

NB:
(Only those who sat exams
Some minor inaccuracies could be there because of retakers
Numbers do not include Masters and PhD students who did not sit exams but had seminars and dissertations/thesis to defend).

2.5 Internship programme at CEDAT

Internships are some of the best practical learning exposure needed for students in the College Engineering, Design, Art and Technology. Most of the programs offered are practical in nature and therefore students need more and more encounters during Internships to improve on a number of skills. The period under review was affected by the COVID 19 pandemic and this equally affected the level of implementation of the internship program. The continuing students were advised to do the industrial training in different modalities.

2.6 Graduation Numbers for 2021

Makerere University held its 71st Graduation Ceremony on Friday 21st May 2021 at the Freedom Square. CEDAT presented 764 students that graduated in a number of fields. Of these 233 (30%) were female and 531 (70%) were male. 113 were graduate students while 651 were undergraduate students. Of the 651 undergraduate students, 1 graduated with a Diploma in Civil Engineering Surveying. Of the 113 graduate students, 2 graduated with PhD, 15 post graduate Diploma and 96 graduated with Masters.

School/Programme	Female	Male	Total
School of the Built Environment			
B Architecture	9	23	32
B Urban and Regional Planning	15	20	35
BSc Construction Management	14	20	34
BSc Land Economics	13	17	30
BSc Quantity Surveying	21	27	48
BSc Land Surveying and Geomatics	11	35	46
	83	**142**	**225**
School of Engineering			
BSc Computer Engineering	7	14	21
BSc Electrical Engineering	20	62	82
BSc Telecommunications Engineering	12	28	40
BSc Mechanical Engineering	10	49	59
BSc Civil Engineering	14	67	81
Undergraduate Diploma			
Diploma in Civil Engineering Surveying		1	1
	63	**221**	**284**
Margaret Trowell School of Industrial and Fine Arts			
BIFA	64	78	142
	64	**78**	**142**

Graduate Programmes			
M Architecture	1	1	2
MAFA	1	-	1
M Eng (Civil)	1	-	1
MSc Civil Engineering	-	1	1
MSc Construction Management	3	31	34
MSc Electrical Engineering	-	1	1
MSc Geo-Information Science and Technology	12	25	37
MSc Mechanical Engineering	-	1	1
MSc Power Systems Engineering	-	1	1
MSc TIID	2	5	7
MSc Telecommunications Engineering	1		1
MSc Urban Planning and Design	-	4	4
MSc Renewable Energy	1	4	5
Post Graduate Diploma			
Post Graduate Diploma in Construction Project Management	1	14	15
PhD		2	2
TOTAL	**23**	**90**	**113**
Grand Total	**233**	**531**	**764**

3.0 Research

3.1 Running Projects in CEDAT in 2021

The table below lists some of the ongoing projects in the College in the reporting period.

Project	P. I	Funder Country	Currency	Budget
Volkswagen Foundation Grant No.96659	Dr.Peter Wilberforce Olupot	Volkswagen Foundation Germany	USD	32,677.40
AFRIWATSAN Project	Dr.Kulabako Robinah	The Royal Society UK	USD	64,340
Higher Education Partnerships For Sub Sahara Africa	Prof.Henry Alinanitwe	Royal Academy Of Engineering	UKP	200,000
Ruforum Project	Dr. .Akol Roselyn	RUFORUM Project Uganda	USD	14,000
PBL Project	Dr. Venny Nakazibwe	Finland Alto University Finland	USD	902,500
Improving Tenure Security Of Small Holder Farmers In Uganda	Dr. Musinguzi Moses	UN Habitant Germany	USD	315,000
Volkswagen Foundation Grant No.96655	Dr. Lubwama Michael	Volkswagen Foundation Germany	USD	40,000
T-Group	Dr.Kulabako Nakawunde Robinah	Newcastle University UK	USD	299,706
Transfer of Delft Based MSc/GPDP/OLC/OCC Program On Non-Sewered Sanitation	Dr. Swaib Semiyaga	The Delft Foundation Netherlands	USD	343,000
CAWESDEA Project-Capacity Water Eng. Sustainable Development Goals In East Africa	Dr .Jotham Sempewo	Tanzania Water Partnership Tanzania	USD	27,538

RCMRD/GEMES & Africa Project-Global Monitoring For Environment & Security	Dr. Anthony Gidudu	European Union & European Space Agency Kenya-Nairobi	USD	85,227
Building Innovative Delivery Systems For Water, Sanitation & Energy In Urban Africa (Off Grid Project.)	Dr. Robinah Nakwunde Kulabako	Economic And Social Research Council (ESCRC) UK	GBP	307,397
Integrating REsilience and SUstainability in the pLanning for infrasTructure projectS in Uganda (RESULTS) - GCRF Africa Catalyst	Dr. Dorothy Okello	Royal Academy Of Engineering UK	GBP	100,000
TUM SEED Centre	Dr. Nabuuma Betty	Bayern Podewilsstr		69,323
Africa Center Of Excellence On Materials, Product Development And Nano Technology	Prof. J.B Kirabira	World Bank New York	USD	6,000,000
Bioplastics development from Agricultural Residues in Uganda	Dr. Michael Lubwama	Sida Swedish Research Links, Sweden	SEK	720,000
LEAP-RE, Long-Term Joint EU-AU Research and Innovation Partnership on Renewable Energy	Prof. J.B Kirabira	European Union	EURO	35,000
Building Innovative Delivery Systems For Water, Sanitation & Energy In Urban Africa (Off Grid Project.)	Dr. Robinah Nakawunde Kulabako	Economic And Social Research Council(ESCRC) UK	GBP	307,397
Africa Center Of Excellence On Materials, Product Development And Nano Technology	Prof. J.B Kirabira	World Bank New York	USD	6,000,000
Technology for application of activated carbons from rice husks in water treatment	Dr. Peter Olupot	RIF	UGX	160,000,000

Development of zeolite based nano-composite filters for drinking water treatment in Uganda.	Dr. Robinah Kulabako	RIF	UGX	166,000,000
Renewable Energies for Africa: Effective Valorization of Agri-Food Wastes (REFFECT-AFRICA). In response to: *Building a low-carbon, climate resilient future: Research and innovation in support of the*		European Green Deal. Horizon 2020	EUR.	6,962,820.76
Development of an Efficacious Patient Management System for Uganda using Machine Learning Techniques	Dr. Dorothy Okello	RIF	UGX	
Piloting A Rural Broadband Connectivity Model	Dr. Dorothy Okello	RIF	UGX	
Integration of on-grid and off-grid decentralized renewable energy systems in Uganda	Ms.Josephine Kakande Lutalo	*RIF*	UGX	
Manufacture of low cost de contamination equipment for masks	Dr. Cosmas Mwikirize	*RIF*	UGX	
Selfnosis for COVID19	Mr. Gerald Kisekka	*RIF*	UGX	
Design Review and manufacturing of the self disinfecting glove	Prof. J B Kirabira	*RIF*	UGX	
Development of a recyclable wash hand facility (ECO WASH)	Dr. Peter Olupot	*RF*	UGX	

Investigating the market for Ugandan entrepreneurs.	Ms. Gokyalya Waliya	*RIF*	UGX	
Harnessing geo spatial technologies for sustainable urban planning in the newly created cities in Uganda using Rapid Physical Planning Approach	Mr. Charles Nyakwebara	*RIF*	UGX	
Machine learning guided COVID19 guided screening using point of care Utrasound screening.	Dr. Jonathan Serugunda	*RIF*	UGX	
Using satellite Imagery to improve monitoring of floating plastic litter and optimal water quality of Lake Victoria Uganda.	Dr. Anthony Gidudu	*RIF*	UGX	
Green synthesis of Graphene from coffee husks and other agro – waste for energy storage applications	Dr. Norbert Mukasa	*RIF*	UGX	
Antibacterial and Antiviral nanocoated cloth mask to limit the spread of COVID19	Mr. Edmund Tumusiime	*RIF*	UGX	
GIS backed big data analytics for land value prediction for compensation and taxation purposes (case study of Wakiso district)	Mr. Nassir Mwanje	*RIF*	UGX	
Enhancement of Innovation among	Dr. Hillary Kasedde	*RIF*	UGX	

Enhancement of Innovation among Uganda's SMEs through the triple Helix approach post COVID19.	Dr. Hillary Kasedde	*RIF*	UGX	
The COVID19 crisis and implications on the sustainability of the water utilities in small towns in Uganda.	Dr. Jotham Ivan Ssempewo	*RIF*	UGX	
AI based contact tracing app for contagious epidemics	Dr. Lilian Mono Wabineno	*RIF*	UGX	

3.2 Research Collaborations

3.2.1 CEDAT Unveils state of the art scanning electron microscope

The Minister for Science, Technology and Innovation, represented by Dr. David Seruka, a Senior Research Associate at the Ministry on July 21, 2021 commissioned a state-of-the-art Scanning Electron Microscope recently installed at the College of Engineering, Design, Art and Technology.

The new equipment, procured by the government at Shs2.6 billion will help researchers undertake studies and investigations in Materials, Nanotechnology, drug analysis, forensics and biomedical Engineering, among other things. The grant to procure the equipment was won by Africa Center of Excellence in Materials Product Development and Nanotechnology (MAPRONANO ACE). The equipment was procured under the Presidential Initiative on Epidemics (PRESIDE) a platform set up by the President in march 2020 to fast track local research and development to develop epidemic response tools.

The head of the Africa Center of Excellence in Materials Product Development and Nanotechnology (MAPRONANO ACE), Professor John Baptist Kirabira, said the equipment can be used in analysis of materials for production of medicine, vaccines, forensic examinations from crime and accident scenes, gene analysis among many others.Prof. Kirabira said the equipment is special because it can

give images and analysis at a very high magnification which can not be done by ordinary microscopes. He said, many people were transporting samples to South Africa and Europe, which is costly. "Now researchers can save this money and instead do their tests at Makerere." He invited researchers from all other universities as well as the region to take advantage of this equipment.

Dr. Seruka said PRESIDE was to support research and Development efforts by focusing on priority areas of diagnostics, therapeutics, vaccines, pandemic materials like masks, and epidemiological data. He said the scanning electron microscope is the first of its kind in sub-Saharan Africa. He said, researchers and analysts will no longer travel out of the country to analyze specimen because this machine will be available at Makerere University

The Vice Chancellor of Makerere University, Prof. Barnabas Nawangwe, thanked the president for his continued support to research and innovation and promised that Makerere University would continue to undertake ground breaking research in health, biomedical engineering, Materials science and contribute to addressing the challenges of the country. He challenged researchers at the university to use this equipment to come up with different vaccines that will help our communities.He advised the college to charge a small fee to the users so as to ensure proper maintenance of the equipment.

The Principal of the college, Prof. Henry Alinaitwe, also thanked the government for its continued support to CEDAT and science, technology and Innovation at large. He called on staff of the university to make good use of the equipment and carry out research to solve community challenges.

3.2.2 Minister unveils locally made diesel engine

It was a show of innovations geared towards mechanisation of farming processes as the Minister for Science, Technology and Innovations, Dr. Monica Musenero, launched locally made engines on August 19, 2021.A team of researchers from the African Centre of Excellence for Material science and nanotechnology (MAPRONANO) partnered with artisans from Kevoton Engineering, to design and assemble a diesel engine, the first of its kind in Uganda.

It is a single cylinder 4 stroke engine with 13 horse power and consumes 1 litre of fuel per hour. The engine is a water-cooled and therefore does not heat up.The engines are able to run a generator and a water pump to facilitate irrigation on farms. The generator, is single phase and can therefore be used to power home appliances and small workshops.

According to Mr. Mubiru Rogers of Kevoton Engineering, work on the engines started in 2017, but they were not able to make much progress until 2019 when they partnered with MAPRONANO ACE. The centre of excellence was then able provide training and technical advice, designing and student attachments to the project.

The Minister commended the MAPRONANO team, led by Prof. John Baptist Kirabira, for various innovations that the team in churning out, which included a sanitizer made in Makerere, solar panel slasher, and a mini tractor. Dr. Musenero challenged researchers to have a mindset change and also change the pedagogy to reposition theory to practical works. "We need to teach the students knowing that they are going to design and develop an engine or a brake system," Dr. Musenero emphasized. She encouraged innovators to ensure their products do not stay on the selves, saying the biggest role of science and innovation is economical. The Minister said, for this reason, PRESIDE which she chairs focused on equipping laboratories in universities so as ensure that scientists receive the facilitation that they require. "Research is like a river which needs an outflow and the Ministry is here to provide that outflow," she said.

She advised the university to prioritize certain areas of

research when it comes to grants instead of awarding small grants to different projects which only end up being a drop in the ocean. Dr. Musenero thanked the President for his continued support and belief in science and technology.
The minister advised that the prototypes be refined so that they are engendered to allow women to be able to operate the generator and water pump.

The Vice Chancellor, Prof. Barnabas Nawangwe, called on the minister to support the introduction of an innovation park in Makerere University, saying the park would be able to spinoff companies. Giving an example of Istanbul University, the Vice Chancellor said the university has been able to produce 300 companies over the last one year, saying Makerere University should be supported to do the same. The Vice chancellor also called for a mindset change, saying that like the Koreans, we too will be able to build our car industry by contributing different components of the vehicle and as such contribute to the economic development of the country. Prof. Nawangwe told of Korea's journey to car manufacturing. He shared that the Korean had sought help from Japan but Japan had declined to help. They then embarked on building their own engines and today, Korea is one the biggest car manufacturers. With hope and pride, he said scientist in Uganda have the potential to industrialize this industry. He called on senior researchers to mentor the students in order to create sustainability.

Prof. Nawangwe thanked the Minister for government's continued support especially through PRESIDE. The College of Engineering, Design, Art and Technology recently received an electron microscope worth over Shs2 billion from PRESIDE. This equipment will go a long way in growing research and innovation in the country."Makerere University is ready to work with the government to change our economy and contribute to its development," he added.

The Vice Chancellor also thanked Prof. Kirabira for spearheading innovation at the college.Also present at the launch was the Director of Research and Graduate Training, Prof. Buyinza Mukadasi, The Deputy Principal of CEDAT, Dr. Venny Nakazibwe, The Dean of the School of Engineering, Dr. Dorothy Okello and the Principal of the College of Engineering, Design, Art and Technology, Prof. Henry Alinaitwe who thanked the Minister for her love and enthusiasm for science and technology. He too thanked her for the equipment that the college recently received under the PRESIDE project.
The Minister, in concluding remarks informed the public that the Ministry had changed its operations and had brought on board scientists to in think-tanks to help grow the Ministry's agenda.The National Engineering Think-tank, which is led by CEDAT's own Prof. John Baptist Kirabira.

She said these think tanks will put scientists at the centre of the Ministry of Science, Technology and Innovation. Dr. Musenero advised that for everything we set out to do, we must be purposeful, work together and forget competition among universities or individual. She called for Obuntu and have the right mindset and ideology.She tasked the Chairperson of the travel economy think-tank, Mr. Musasizi to draft a proposal on how the engine prototype can be improved and commercialized.

3.2.3 Other innovations exhibited

Solar Panel Slasher

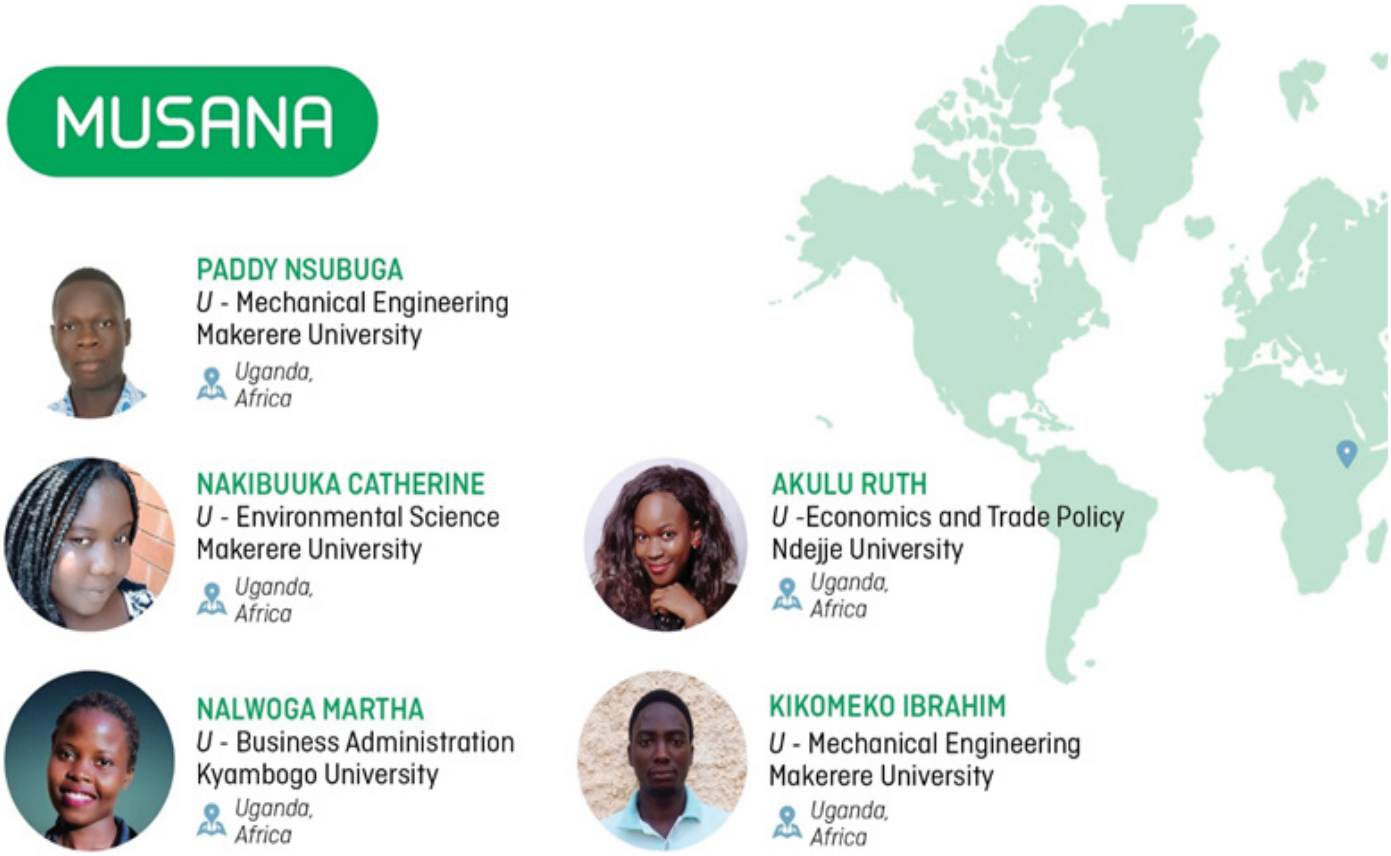
The slasher uses solar and has a rechargeable battery of 75 wats. It can be used by farmers to cut shrubs as well as domestic use in slashing compounds. Away from farming, it can be used to run small appliances and light up a house. Its portable machine and easy to maintain.

Mini Tractor

This was designed to make it easy for farmers that can not afford heavy duty tractors. It runs on petrol. One litre of petrol can run the tractor for 3 hours making it cheap to maintain. In its state, it has a plough and speed planter which can be attached to it.

The innovators plan to improve it to have other garden tools to it, such as spray pumps, and a weeder. The tractor will go a long way in mechanizing farming.

3.2.4 CEDAT Students take part in a Global Design Project



Students from the College of Engineering, Design, Art and Technology are part of a team that is now a FINALIST for Wege Prize 2021—a global design competition. The two students, Paddy Nsubuga and Kikomeko Ibrahim are both pursuing their degrees in Mechanical Engineering from the College. They belong to a team Musana, which created a stove using solar power and water to fuel cooking, eliminating the need for wood fuel and helping reduce deforestation in Uganda.In addition, their solution includes a model to buy or repair used stoves to reuse raw materials. The other members of the team include Nakibuuka Catherine, a student of Environmental Science at Makerere University, Nalwoga Martha, a student of Business Administration at Kyambogo University and Ruth Akulu who is persuing a Bachelor's in Economics at Ndejje University.We congratulate all the members of team Musana and wish them the best in the Wege Prize Final.

3.2.5 Collaboration between Mak and Strathmore University on renewable energy

Vice Chancellor Makerere University Prof. Barnabas Nawangwe while welcoming Strathmore University Vice Chancellor Prof. Izael Pereira Da Silva

Effort is on to enhance collaboration between Makerere University College of Engineering, Design, Art and Technology (CEDAT) and Strathmore University in the area of renewable energy.

During a meeting held between the College management and Prof Izael Pereira Da Silva from Strathmore University on Monday 13th December in the College Boardroom, the two institutions agreed on a way forward to champion the establishment of a center for renewable in Makerere University drawing from the experience from Strathmore University.

The Vice Chancellor Makerere University Prof. Barnabas Nawangwe while welcoming Prof. Izael Pereira Da Silva, observed that a number of organizations had contacted the University but the process did not get started for lack of a champion to propel the drive. He commended Prof. Izael Pereira Da Silva for coming back to Makerere where he served over ten years ago to share ideas that would not only see the University lead the process of greening the campus but also start on a journey that would lead to reduced energy costs in the running of the University. Dr. Dorothy Okello and her team in the School of Engineering were charged to take lead in the process with support from Prof. Da Silva. It was noted that the School of engineering was in the process of strengthening the programming and therefore in position to take the process ahead by starting on a small project.

According to Prof. Izael Pereira Da Silva of Strathmore University, there was a lot that Makerere could do towards realizing the needed partnerships in the area of renewable energy borrowing a leaf from his University which had realized a number of milestones in the use of renewable energy. He said Strathmore University had started a program of Bachelor of Science in Electrical Engineering and that there was a lot that they could learn from the College of Engineering, Design, Art and technology and hence the need for close collaboration.

The Principal, CEDAT, Prof. Henry Alinaitwe affirmed the College's commitment towards collaboration with Strathmore University and proposed that links be identified in the respective universities building on what the College had already done in some projects. He commended the Vice Chancellor for taking off time to come back to his mother unit to welcome Prof. Da Silva who came with the idea of collaboration, an opportunity that needed to be embraced fully. He said issues of renewable energy were cross cutting and that the college of Agriculture and Environmental Sciences was in attendance. He urged the members to concretize what was needed of them so that through such interventions, society can be moved.

Prof. Da Silva served Makerere University for thirteen years before he joined Strathmore University in 2011 where he is now championing the drive for renewable energy.

3.2.6 Students showcase innovations at HEPSSA workshop

Despite the challenges brought on by the COVID 19 pandemic, students and staff of CEDAT have continued to exhibit excellence in innovations to address different challenges. This was witnesses during a 2-day online workshop organized by the Higher Education Partnership for Sub Sahara Africa (HEPSSA) Project on July 15th -July 16th 2021. The project, funded by the Royal Academy of Engineering supports different activities including curriculum review and problem-based learning in institutions of higher learning. Also supported is registration of Intellectual Property, university-Industry staff exchanges, workshops, conferences and training in Engineering Education.

The project is being undertaken by different universities including Makerere University, Kyambogo University, Mbarara University of Science and Technology, Busitema University, Ndejje University, Moi University, Dar es Salaam University and University of Leeds in the UK. The HEPSSA project Aims at creating partnerships that will help in Enriching Engineering Education and contribute to engineering capacity development in the region. It also seeks to improve the quality and relevance of engineering education and research in SSA.

These Improvements should be made by catalyzing industry-academia partnerships in 'hub' universities and their partner institutions.It is envisioned that the project will ensure that the graduates are more practical and relevant in addressing challenges in society, Partnerships with industry for mutualbenefit, Increased collaboration among universities, Increased research and grants won, Ability to acquire intellectual property rights and commercialization of innovations.

3.2.7 Innovations that came out of the Problem Based Learning approach

Sanitary Pads made from Bamboo and paper

Many students in the rural areas are forced to leave school when they start their menstruation cycle. This is because they can not effort the sanitary towels/ pads on the market. To this end, students of CEDAT under the Problem Based Learning model have innovated sanitary pads made from bamboo. The aim of the research project is to supply healthy, hygienic re-usable pads to girls at a low price than the plastic sanitary towels sold in supermarkets.The bamboo is mixed with recycled paper to act as an absorbent.

Bamboo fabric is used on the exterior of the pads because of its naturally anti-bacterial and anti-fungal characteristics.Research has also shown that Bamboo fiber is 30% more absorbent than the finest cotton. The project code named G-Pads also aims at reducing on the plastic in the environment due to dumping of disposable sanitary towels made of plastic materials. The project is addressing some SDGs in relation to the environment. The research will help in reduction in plastics dumped in the environment and reduction in emission of greenhouse gases contributing to global warming. It is expected that if commercialized, the innovation will create employment for many people.

R-Husk Bioplastics

Another team of student is making food containers from rice husks and cassava.

The process involves the following steps:

1. Rice straw will be milled and sieved to ensure uniform size of <2mm.
2. Mixture of waste recycled paper and cassava starch will be blended together in presence of water.
3. The milled rice straw will then be added.
4. This mixture will then be thermoformed for about 4 min at about 180 C.
5. The starch will transform into thermoplastic starch creating a foamed material and silica present in the rice straw will impart its hydrophobic (water repelling) properties onto the composite formed.

The container is biodegradable and therefore environmentally friendly.

Medicine Delivery and Patient Monitoring System

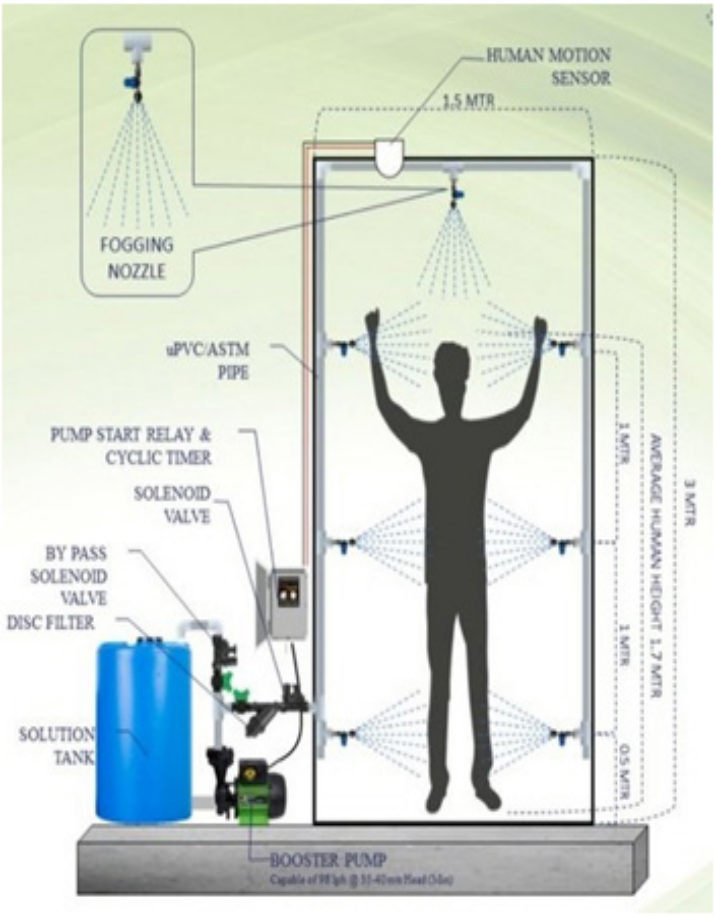
A team of medical students and Engineering students have teamed up to innovate a machine that dispenses medicine to patients. This has been done in the wake of increase of COVID 19 infections among health workers. This has called for a need to minimize physical contact between the patient and the health worke and yet continue to monitor the health of the patient.

This innovation addresses both issues.The machine has been designed to dispense medicine and also monitor the patient's vitals.The main objective of the research project was To develop a system that ensures timely medicine delivery and relays patient symptoms data to medical personnel. The students have designed a Prototype that achieves timely and accurate medicine delivery and relays patients' state to the health workers.

Solar powered sanitizer booth

1. Development and Evaluation of Nanobody-based Point of Care Diagnostic Kit for Detection Of Covid -19 in Saliva
2. Evaluation of nanoscale materials as candidate adjuvants and delivery systems for SARS CoV-2 sub unit vaccine in Humanized mice (Phase II)

Innovations in response to Covid-19 Pandemic



3. Green Synthesis and Functionalization of Paramagnetic Nanoparticles for Viral RNA extraction
4. MAPRONANO ACE in partnership MakCHS developed an affordable hand sanitizer as a prevention measure for COVID 19
5. Portable Mask Sterilizing Pod, RIF
6. Solar Powered Sanitizer Booth
7. Bioactive nanocoated masks with antimicrobial activity

3.2.8 Eawag partnership Programme (EPP)

From 01 September 2021 - 29 October 2021; Dr Charles Niwagaba was involved in the Eawag Partnership Program (EPP) as a Senior visiting scholar at the Swiss Federal Institute of Aquatic Science and Technology (Eawag) in the Department of Sanitation, Water and Solid Waste for Development (Sandec). During the stay, he was involved in numerous collaborative activities and planning of some projects. This has culminated in jointly writing a proposal for a postdoctoral research, which has since been awarded to Dr. Anne Nakagiri, our former PhD student at Makerere University. Besides, a four-year research project has been approved for funding starting from 01 August 2022 to 30th July 2026. A cooperation Agreement for this project has been signed between the Swiss Federal Institute of Aquatic Science and Technology (Eawag) and the College of Engineering, Design, Art and Technology (CEDAT).

Volaser, a distance-laser module and a probe mounted on a tripod-stand for measuring the volume of onsite sanitation containments and faecal sludge. This is relevant for planning and design of faecal sludge treatment plants, specifically in determining quantity of sludge available in containment systems. It was funded by the Swiss Federal Institute of Aquatic Science and Technology Euro 4,500.

A group photo on top of the ETH Main building, after participating in an online summer school challenge presentation by students of ETH and Kwame Nkrumah University of Science and Technology, 17th September 2021.

A photograph taken when Charles B. Niwagaba (Second from Right) was participating as a panelist at the 50th anniversary of the Swiss Center for Development and Cooperation (NADEL) at ETH (01st October 201).

3.2.9 Recyclable water based hand washing machine (Eco-wash)

On March 4, 2021, CEDAT held an event for the Dissemination of covid19-prototype: Recyclable water hand washing machine (Eco-Wash). The event that was both physical and virtual was held in the Conference Hall at CEDAT and was graced by the Vice Chancellor. Prof. Barnabas Nawangwe as chief Guest and it attracted the attention of both mainstream and social media.

CEDAT came up with a innovation to help Ugandans prevent contracting the deadly COVID-19 and maintain proper hygiene. Eco-Wash , a recyclable water hand washing facility that will soon be going on the market is an automated machine which has the ability to treat water and reuse, according to Dr. Peter The device to be solar-powered and timed with a sensor, in accordance with the 20-second hand-washing guidance issued by the World Health Organisation.

Vice Chancellor, Prof . Barnabas Nawangwe washing hands during the launch of the prototype Eco-Wash

"When the system detects a person, standing at most 30cm in front of the handw wash . The prototype is equipped with a water treatment system for treating waste generated from hand washing for subsequent recycling. The facility is also equipped with a solar unit for powering the control system, like water pumps, audio, sensors among others explained Dr. Peter Olupot at the Launch. He said the innovation was aimed at also addressing the challenge of water scarcity. "The wastewater generated from handwashing could be diverted from merely going down the drain and instead treated for subsequent recycling,".

The process includes washing station the clean water is turned on.This delivers the water and the audio playback instructs the user through WHOhand washing technique," Olupot says.The machine pours water, soap and allows one to scrub their hands for 20 seconds before it stops. It pours water again to allow the user to rinse their hands and this takes 10 seconds. A Paper towel dispenser is also placed nearby to allow users to dry their hands.

The innovation was funded by the government of Uganda under the Makerere Research and Innovation Fund. This is the second similar innovation following the launching of the Touchless Handwashing (Tw-20) Kit in August 2020.

3.2.11 Center for Research in Energy and Energy Conservation

Access to electricity in Sub-Saharan Africa is the lowest in the world. More specifically, Uganda meets more than 90% of its energy demand with biomass, 6% with fossil fuel combustion and only about 26% of the overall population has access to electricity with only 7% in rural areas. It is no wonder that the demand for firewood for cooking needs has exceeded natural reproduction leading to increased deforestation.

The Center for Research in Energy and Energy Conservation (CREEC) based at the College of Engineering Design Art and Technology is influencing change from traditional forms of energy to sustainable and clean forms of energy through actionable research, renewable energy product testing, trainings, innovations and implementation of impactful projects across the spectrum of renewable energy technologies. The dynamic center has been able to achieve many milestones in this area by giving methodological, technical and well researched approaches in the thematic areas of rural electrification, energy for productive use, energy efficiency, household energy, energy entrepreneurship and energy testing. With a mission to enhance access to modern types of energy, the centre for the last 20 years has worked with government organizations, donors, private sector, individuals and academia to provide innovative programs and technical expertise through capacity building activities providing business support, knowledge sharing and advisory.

Accreditations:

"CREEC is accredited as an assessment centre to conduct Competence Based Assessments in line with Uganda Vocational Qualification Framework (UVQF) to handle Worker's PAS, 1, II, III assessment level(s) through the Directorate of Training, Ministry of Education and Sports, Uganda."

Under the Energy Testing Services, CREEC has two state of the art laboratories for biomass products and solar PV products that are recognized under the Laboratory Recognition Scheme of the Uganda National Bureau of Standards (UNBS) in accordance with ISO IEC 17025: 2017 guidelines.

As indicated in SGD 17, a successful development agenda requires inclusive partnerships at the global, regional, national and local levels built upon principles and values, and a shared vision and goals that place people and the planet at the centre. CREEC has strongly cooperated with different stakeholders in the renewable energy spectrum not only to improve the available renewable energy products through her ISO 17025:2005 labs, but has improved the way people use and make decisions about renewable energy products. By the end of 2021, over 400 RE technology models had been tested using the ISO quality management system.

In 2021, CREEC partnered with GIZ to train over 50 solar technicians in Gulu district. This has bridged

the gap between solar installation expertise to match the demand for existing solar technologies without the extra cost of transporting experts from Kampala city. CREEC is accredited by the Ministry of Education and Sports. The centre is also making it possible to improve the health sector through her partnership with the University of Applied Science Karlsruhe. Through this partnership, the centre will enable Solar powered wastewater treatment and reuse for hospitals in Uganda using the example of Lubaga Hospital in Kampala. The aim of this project is to develop and pilot a robust and cost-effective technology that enables decentralised treatment of hospital wastewater with a high share of renewable energy. For this purpose, a combination of a membrane bioreactor (MBR) with an activated carbon treatment is to be used, which is to be operated to a high degree by solar PV energy. The particular challenge of the project is to design these technologies as simply and cost-effectively as possible, whereby as many plant components as possible should be available locally in Africa. The piloting is to be accompanied and supplemented by training courses for the future operators. The demonstration of the solution within the framework of a pilot project at Lubaga Hospital will serve as a model for wastewater treatment and reuse in hospitals in Uganda and other countries in East Africa (Kenya, Tanzania, etc.).

On the other hand, with the Global Green Growth Institute, CREEC is promoting Solar Powered Irrigation and Pumping in Uganda. The project will increase farmers' access to solar powered irrigation systems (SPIS), hence increasing agricultural productivity. One of the expected outcomes for this project is a strong national capacity to promote, design, finance and implement SPIS in the country through technical training and capacity building for various stakeholders including but not limited to distributors, government staff and farmers in irrigation technology and climate smart agriculture.

CREEC's partnership with Loughborough University is also extending research understand and transform people's beliefs and opinions around cooking with electricity under her project Modern Energy Cooking Services. The centre has presented evidence based research to renewable energy stakeholders on the effectiveness of electric pressure cookers while also demonstrating savings made from cooking with electricity in comparison to traditional forms of cooking like charcoal. By the end of 2021, the Electricity Regulatory Authority- ERA, had approved a new tariff plan that is aimed at reducing electricity bills significantly for industries and domestic cooking. According to the new tariff structure, homeowners using electricity for cooking will pay Shillings 412 per kilowatt-hour (unit) starting January 2022.The tariff structure review also targets to reduce the bills for institutions that use firewood and other biofuels for cooking as well as for large industries.

Furthermore, to encourage extra academic, interdisciplinary and international exchange, CREEC is partnering with TRAJECTS, a DAAD-funded project that will create and/or strengthen research and teaching capacities on Just Transitions in Energy, Climate and Sustainability, especially in the Global South. The centre will support short research stays and/or internships (2-4 months) for young researchers from, within and/or to the Global South.

The centre recognizes the importance of information for not only researchers, innovators but end users as well in the development and consumption of renewable energy technology. This inspired CREEC's partnership with Atonga Media, an award winning film Production Company to yield dissemination outputs which showcase the life changing impacts that will be derived from a number of interventions of the global partnership under the Clean Energy Research Alliance (CERA) funded by the RS DFID and UKAID. This not only ensures that information is curated in an entertaining but also educative format to fit audiences across the nation through different media channels such as tv series, movies, radio drama series, massive digitalised open online courses (MOOC) among others. Research shows that entertainment often leaves a mark on people and the centre anticipates that this will make messages around the use of renewable energy memorable and inspire quick and informed decisions. It is also important to note that the centre has also continued to document and disseminate her research through papers and journals and reports.

3.2.11 East Africa Center of Excellence for Renewable Energy and Energy Efficiency (ECREEE)

The East African Centre of Excellence for Renewable Energy and Efficiency (EACREEE) has been established to play a key role in promoting renewable energies (RE) and energy efficiency (EE) in the East African Community (EAC) region. EACREEE has been mandated by the EAC Council of Ministers responsible for energy to promote RE&EE in the EAC region. EACREEE´s goal is to facilitate the creation of an enabling environment for RE&EE markets and investments, to contribute to (a) Increased access of modern, affordable and reliable energy services, (b) Energy security and (c) Mitigation of negative effects (e.g. local pollution and Greenhouse Gas (GHG) emissions). EACREEE´s main areas of intervention include support in regional energy policy, capacity building and project development and execution, knowledge management, lobbying, advisory provision, and financing and investment facilitation. The Centre is registered with the legal name "East African Centre of Excellence for Renewable Energy and Efficiency Ltd" (EACREEE) – as a non-for-profit company limited by guarantee under the Ugandan Law. The Centre is hosted by the Government of Uganda, at CEDAT Makerere University in Kampala.

In line with its mandate to promote RE&EE in the EAC region, and deriving from the contextual analysis undertaken, EACREEE has identified and prioritized seven (7) strategic programmatic areas for the period 2020-2024. They include (i) Accelerating adoption of clean and sustainable cooking and heating; (ii) Improving energy efficiency in the built industrial environment; (iii) Promoting capacity building and investment in electrification via clean energy mini-grids and standalone solutions; (iv) Ensuring inclusive and sustainable energy access in situations of displacement; (v) Fostering a lighthouse of new technologies and solutions (storage, digitalization, innovative renewable energy technologies (RET), and circular economy), (vi) Promoting utility-scale and distributed grid-connect RE; and, (vii) Enhancing women and youth entrepreneurship and employment in sustainable energy businesses within the EA region.

Hosted at Makerere University, EACREEE has been partnering with the University in a number of activities to advance its positioning and regional added-value. Makerere has been very instrumental in providing space and extending labor services to the Centre. The College of Engineering, Design, Art and Technology (CEDAT), Legal and Gender Departments have been extending technical and management and experts to EACREEE, the Legal department. The centre continues to see big potential when it comes to arranging relevant joint-partnerships and collaborations with Makerere University in the East African region and beyond. For this, EACREEE remains keen to its continuous engagement with Makerere University while making an effort to reach and cooperate with new partners as it seeks to build added-value collaborations and long-term partnerships with Makerere University and other complementary regional institutions;

The current business plan aims at mainstreaming gender throughout all the prioritized strategic areas and build on existing regional and national gender expert institutions. EACREEE partnered with Makerere University to carry out a study and published a report on the status of status of gender involvement in energy sector in East African Community titled "Situation Analysis of Gender and Sustainable Energy in the East African Community." This report was prepared by Sustainable Energy Solutions for the Clean Energy Solutions Center for the benefit of EACREEE, and with generous support from Power Africa. It was reviewed by several experts including Makerere staffs in gender department. The report was presented at the first Sustainable Energy Forum for East Africa held in Kigali, Rwanda 19-21 March 2018.

EACREEE has been working in collaboration with Makerere University to mobilize funds for its activities from development partners, including bilateral and multilateral agencies and other international organizations as well as from the EAC and eventually in-kind support from the rest of EAC Partner States in

the mid long-term. The Centre is already enjoying the partnership with UNIDO and ADA, other development partners that have interest in EACREEE's activities. In efforts to enhance the Centre's sustainability, the Centre has been working with Makerere staffs to bid for a number of calls for funding.

Based on the initial aim provided under EACREEE Strategic documents, EACREEE will continue to work with Makerere University as well as forge collaborations with other academic partners within the East Africa and beyond to help advancing the prioritized program. With the Mandate given by the East African Community (EAC), EACREEE is well placed to collaborate with relevant actors and, as stated in the same Strategic document, to build on existing academic resources in order to support the progress of the prioritized strategic actions. Some actions would include capacity building in energy saving devices including improved cook stoves and other clean cooking devices (such as electric cooking, biogas or LPG), recent technological advances (e.g. Pay as you cook; bank digital services...) including relevant technical, financial (e.g. Energy Efficiency and cooking in rural and urban areas or market analysis), off-grid and grid-connected RE electricity solutions (e.g. green mini-grids), innovative technologies and solutions (e.g. electricity storage or waste to energy) and policy and regulatory aspects.

3.2.12 Partnership for sustainable solutions with sub Saharan Africa

Under the program of "Partnerships for sustainable solutions with sub-Saharan Africa", Makerere University was awarded funding for a period from June 2021 to May 2025 under a consortium amongst The Karlsruhe University of Applied Sciences (HKA) (Germany), Makerere University (MAK) (Kampala Uganda), University of Nairobi (UoN) (Nairobi Kenya) and Mekelle University (MU) (Mekelle Ethiopia) for the R&D project "Collaboration for Active Mobility in Africa CAMA". The project aims to better capture the requirements of the pedestrians and cyclists and to illustrate their needs using digital surveys and crowd mapping approaches. To facilitate the development and uptake of tailor-made solutions to promote active mobility, the project will utilise learning alliances (bringing together researchers, community representatives, decision makers and experts from the field) to prepare real-life experiments (living labs) and test innovative solutions on the ground.

The Project is funded by both the German Academic Exchange Service (DAAD) and Federal Ministry of Education and Research (BMBF). A total funding of EUR 97,336 over a period of 4 years was awarded to run project activities. The project will involve Data collection, development and uptake of tailor-made solutions to promote walking and cycling and real-life experiments which will focus on small, tangible and innovative solutions on community level.

The project successfully began in October 2021 instead of June 2021, the delay was due to COVID19. In order to achieve the objective of the project, Post Graduate Research Assistant (PGRA) who would support and also take on the administrative role on the project was recruited through a competitive process. The awarded student was required to register as a PhD student at the Department of Civil and Environmental Engineering focusing on Non-motorised Traffic Engineering which is in the pipeline. The project activities therefore commenced where we have had various preparational and progress stakeholder meetings carried at the end of each month with all the partners.

Also, a summer school was organised under the project theme of "Hands on Sustainable mobility" from 25th October 2021 to 5th November 2021 where 8 students (i.e., 3 Masters and 2 Bachelors students) from the School of Engineering and the School of Built Environment participated online (via zoom). The Summer school included students from Germany, Colombia, Ethiopia, The Philippines, Brazil, Canada, Kenya, Bangladesh and

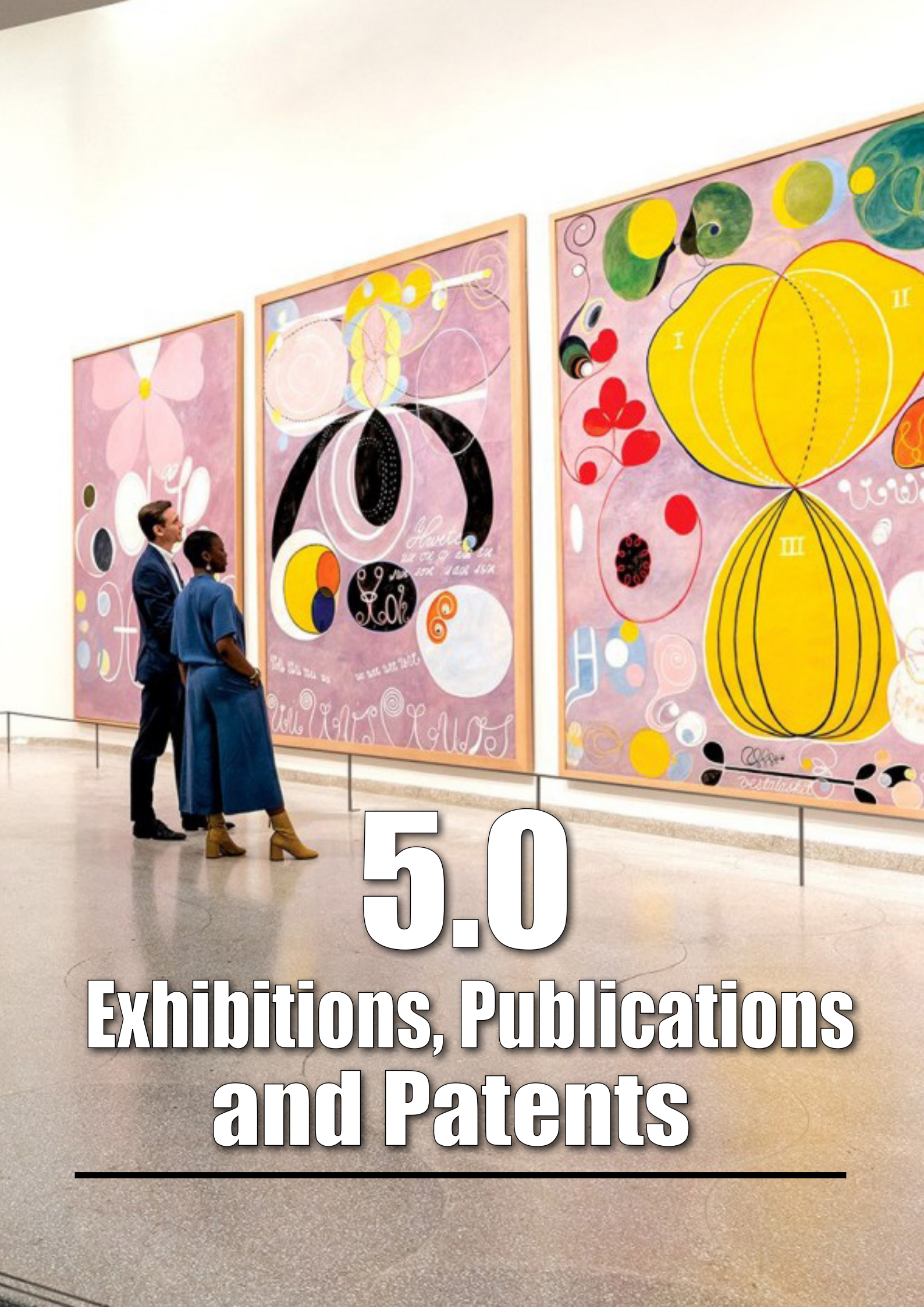
Canada. The lectures included; challenges in sustainable mobility, cyclist behaviour evaluation, improving pedestrian facilities, cycling safety and promoting equity amongst the users of Non-motorised Traffic. The students were awarded certificates of attendance at the end.

4.0

MoUs signed in 2021

No	Institution signed work	Period	Effective date
1	MOU between Uganda Communications Commission (UCC) and Makerere University	From effective date of signature (11/11/2021) until 30th June 2022.	11/11/2021
2.	Edg. Anstat fur Wasserversorgung. Abwassereingung und Gewasserschutz (Eawag)	From date of Signature 9th Dec. 2021 to for 4 years	2022 - 2025
3.	United Nations Human settlement programme between Makerere University School of Built Environment	From the date of signature for 15 months	Ending March 2023
4.	MOU between Siksha "O" Anusandhan University and Makerere.	From the date of Signature i.e 16/11/2021 for 5 years	Date of signature 16/11/2021
5.	MOU between Makerere University and African Planners Institute (API) ltd	From the date of signature i.e 27th September 2021 for 5 years	Date of signature 27th September 2021
6.	MOU between Makerere University and The limited, Crowthome, House, Nine Mile Ride Wokingham Berkshire, RG40 3GA, United Kingdom(the Sub-Awardee)	To sign agreements concurrently under a period of 50 years	Date of Signature is 8th June 2021
7.	MOU Between The Global Green Growth Institute and Makerere University Purpose: Green Growth Cooperation	Agreement will commence on the date the last party signs this agreement and it will close on the 31st of March 2023 or as otherwise mutually agreed between the Parties. i.e 13/01/2021	13/01/2021 – 31`st March 2023
8.	MOU between Makerere University and M/S UB Consulting Engineers limited in respect of Prof. Badru M. Kiggundu Memorial Scholarship Award	5 five academic years from 1st sem. 2021/2022 to 2nd sem. 2025/2026	5 (five years)

9.	MOU Between Technical University of Munich TUM SEED Centre and Makerere University	From 01/01/2020 to 31/12/2024	4 (fours years)
10.	MOU Karisruhe University of Applied Sciences and Makerere University	From 2/04/2021 to 24th March 2021	2021 to 2025
11.	MOU for Academic Collaboration between Ardhi University, Tanzania and Makerere University	5 (five years) from the date of signature i.e 12 April 2021	5 (five years)
12.	Supplementary Agreement of Cooperation between The University of Kassel, and Dr. Peter Olupot Makerere University CEDAT	18 months from 2020 August.	18 months
13.	MOU for Academic Collaboration between Ardhi University, Tanzania and Makerere University	5 (five years) from the date of signing i.e 12th April 2021	
14	MOU between Technische Universitat Dresden, Germany and Makerere University, Uganda	5 five years from the date of signature i.e 5th March 2021	5 five years
15.	MOU Intra-Africa Academic Mobility Scheme (MASTET)	Mou shall enter into force on the date the last party signs, but shall have retractive effect from the starting date of the eligibility period of the project laid down in the Grant Agreement.	VC signed on 3/02/2021
17	European Climate, Infrastructure and Environment Executive Agency (CINEA)	November 1, 2021	60 months
18	Swiss Federal Institute of Aquatic Science and Technology (Eawag) based in Switzerland; with the College of Engineering, Design, Art and Technology (CEDAT) at Makerere University	09th December 2021	Four Years (2022-2024)
19.	MOU Intra-Africa Academic Mobility Scheme (MIRET)	MoU shall enter into force on the date the last party signs, but shall have retractive effect from the starting date of the eligibility period of the project laid down in the Grant Agreement.	VC signed on 3/02/2021



5.0

Exhibitions, Publications and Patents

5.1 Exhibitions

Like many other units of Makerere University, echoes of the disruptive COVID 19 in 2021 returned to haunt the Institute of Heritage Conservation and Restoration. In 2021 nonetheless, we managed to accomplish some important tasks as follows:

A) PhD Dissemination by Robert Ssewanyana

Robert Ssewanyana is an assistant lecturer at MTSIFA in the Department of Fine Arts who is currently pursuing his PhD study at Durham University in the UK. He made a research presentation and Exhibition of his on-going work at Gallery. Robert is using furniture design to sensitise young people in Kisenyi – Kampala, about the menace of HIV/AIDS. His exhibition stretched from January to March 2021.

B) Collaborative Workshop on Barkcloth in Uganda.

This was an innovative Textile Workshop that was conducted on Zoom from, 26th/April to 3rd/ May 2021. The workshop involved Textile students from MTSIFA and those from the Textile Design Department at Shenkar College of Engineering and Design Tel Aviv. It was facilitated by CoCuDi centre and the African Studies Gallery. The Deputy Principal Dr. Venny Nakazibwe, CEDAT coordinated it.

C) The Collective Memories Curatorial Workshop.

Funded by New Castle University, the Collective Memories Curatorial Workshop was a collaborative workshop between Nommo Gallery and the IHCR. It was organized by the Uganda National Cultural Centre (UNCC). Assoc. Prof. Kyeyune was one of the facilitators. The Makerere Gallery Admn. Harrison Davis Watsala participated. More than half of it was conducted on Zoom and the workshop culminated in a virtual exhibition that started in August and closed in October.

D) The Art of Bronze Casting Exhibition.

The Dept. of Fine Art hosted an American Bronze Casting scholar Prof. Erik Blome, under the Fulbright Fellowship. His fellowship started in March and ended in September 2021 with an exhibition of his and students' work. The exhibition continued until mid October 2021.

E) Joan Nanfuka's PhD Research Presentation

Joan Nanfuka is a PhD student registered at Makerere University in the School of \industrial and Fine Arts. She is looking at the changing manifestations of Catholic Art in Buganda. She made a presentation of her on-going research project which was supported by visual material from the field. Her exhibition started from the beginning to the end of November 2021.

F) Fresh Dimensions in the New Normal

This was an exhibition of Paintings and one sculpture by Assoc. Prof George Kyeyune. The exhibition was not an overt display of SOPs, rather it deepened Dr. Kyeyune's search and exploration for subtleties of color and form within the constrained space of COVID 19. The show that started on 17th December 2021 will be concluded at the end of January 2022.

Pictorial on exhibitions

Exhibition on bronze

Exhibitors preparing

Cloth and Art

Deputy Principal with exhibitors

5.2 Publications

The List below shows some of the Publications by staff in the College;

List of Journal papers

1. Ahabwe G. Z., Batega D.W, Ssewaya, A., Niwagaba, B. C., 2021. Governance conundrum in pursuit of the human right to water and sanitation: tracking the progress of the leave-no-one-behind principle in Uganda. *Journal of Water and Climate Change* (Corrected Proof) doi: 10.2166/wcc.2021.079.
2. Avan de Vossenberg, J., Hoiting, Y., Kamara, A. K., Tetteh, M. K., Simaika, J. P., Lutterodt, G., ... & Foppen, J. W. (2021). Double-Stranded DNA Virus Assemblages in Groundwater in Three Informal Urban Settlements in Sub-Saharan Africa Differ from Each Other. *ACS ES&T Water*, *1*(9), 1992-2000.
3. Bahati, H. K., Ogenrwoth, A., & Sempewo, J. I. (2021). Quantifying the potential impacts of land-use and climate change on hydropower reliability of Muzizi hydropower plant, Uganda. Journal of Water and Climate Change. https://doi.org/10.2166/wcc.2021.273
4. Bamweyana, I., Musinguzi, M. and Kayondo, L. (2021) Evaluation of CHIRPS Satellite Gridded Dataset as an Alternative Rainfall Estimate for Localized Modelling over Uganda. *Atmospheric and Climate Sciences*, 11, 797-811. doi: 10.4236/acs.2021.114046.
5. Bartona, M. A., Simha, P., Magri, M. E., Dutta, S., Kabir, H., Selvakumar, A., Zhou, X., Lv, Y., Martin, T., Kizos, T., Triantafyllou, E., Kataki, R., Gerchman, Y., Ronit Herscu-Kluska, R., Alrousan, D., Dalahmeh, S., Goh, E. G., Elenciuc, D., G?owacka, A., Korculanin, L., Tzeng, R. T., Ray, S.S., Ganesapillai, M., Niwagaba, C., Prouty, C., Mihelcic, J. R., Vinnerås, B., 2021. Data Article Attitudes of food consumers at universities towards recycling human urine as crop fertiliser: A multinational survey dataset, *Data in Brief*, 35, 106794, 1-12.
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7. Beardsley, R., Cronk, R., Tracy, W., Fleming, L., Ng'ambi, M., Tidwell, J. B., & Manga, M. (2021). Factors associated with safe child feces disposal in Ethiopia, India, and Zambia. *International journal of hygiene and environmental health*, *237*, 113832.
8. Byakatonda, J., Openy, G., Sempewo, J. I., & Mucunguzi, D. B. (2021). Over century evidence of historical and recent dryness/wetness in sub?humid areas: A Uganda, East African case. Meteorological Applications, 28(5), e2028.
9. Chikafalimani, S. H., Kibwami, N., & Moyo, S. (2021). Perceptions of academics on real estate topics in Africa. *Real Estate Management and Valuation*, *29*(1), 30-40.
10. Chikafalimani, S. H., Kibwami, N., & Moyo, S. (2021). Management of Facilities at Public Universities in Africa: Current Challenges and the Way Forward. *Real Estate Management and Valuation*, *29*(1), 21-29
11. Gidudu, A., Letaru, L., & Kulabako, R. N. (2021). Empirical modeling of chlorophyll a from MODIS satellite imagery for trophic status monitoring of Lake Victoria in East Africa. *Journal of Great Lakes Research*.
12. Jjagwe, J. P. W. Olupot, E. Menya,H.M. Kalibbala. Synthesis and Application of Granular Activated Carbon from Biomass Waste Materials for Water Treatment: A Review. *Journal of Bioresources and Bioproducts (2021)*.https://doi.org/10.1016/j.jobab.2021.03.003
13. Kajjoba, D., H. Kasedde, P. W. Olupot, J. D. Lwanyaga. Evaluation of Thermal Comfort and Air Quality of Low-Income Housing in Kampala City, Uganda. *Energy and Built Environment (2021)*,https://doi.org/10.1016/j.enbenv.2021.05.007.

14. Kayiwa, R., Kasedde, H., Lubwama, M., Kirabira, J.B. (2021). Characterization and pre-leaching effect on the peels of predominant cassava varieties in Uganda for production of activated carbon. *Current Research in Green and Sustainable Chemistry*, 4, 100083

15. Kayiwa, R., Kasedde, H., Lubwama, M., Kirabira, J.B. (2021). The potential for commercial scale production and application of activated carbon from cassava peels in Africa: a review. *Bioresource Technology Reports*, 15, 100772

16. Kibwami, N., Wesonga, R., Manga, M., & Mukasa, T. (2021). Strategies for Improving Quantity Surveyors' Education Training in Uganda. *International Education Studies*, *14*(2), 33-43

17. Lubwama, M., Yiga, V. A., Ssempijja, I., & Lubwama, H. N. (2021). Thermal and mechanical characteristics of local firewood species and resulting charcoal produced by slow pyrolysis. *Biomass Conversion and Biorefinery*, 1-16.

18. Lubwama, M., Yiga, V. A., Wanambwa, S., Bbosa, D., & Lubwama, H. N. (2021). Pyrolysis kinetics and combustion characteristics of local firewood species and charcoal produced by slow pyrolysis. *Biomass Conversion and Biorefinery*, 1-10.

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24. Mukiibi, S., & Machyo, J. N. (2021). Housing Transformation in Kampala, Uganda: Causes and Opportunities. *East African Journal of Environment and Natural Resources*, *3*(1), 1 7. https://journals.eanso.org/index.php/eajenr/article/view/266.

25. Musaazi, I. G., Sempewo, J. I., Babu, M., & Kiggundu, N. (2021). Assessing the impact of working pressure on water meter registration. Journal of Water Supply: Research and Technology-Aqua. https://doi.org/10.2166/aqua.2021.123

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29. Nayebare, J. G., Owor, M. M., Kulabako, R., & Taylor, R. G. (2021). Faecal contamination pathways of shallow groundwater in low-income urban areas: implications for water resource planning and management. *Water Practice and Technology*,

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39. Sorensen, J. P., Nayebare, J., Carr, A. F., Lyness, R., Campos, L. C., Ciric, L., ... & Taylor, R. G. (2021). In-situ fluorescence spectroscopy is a more rapid and resilient indicator of faecal contamination risk in drinking water than faecal indicator organisms. *Water Research*, *206*, 117734. https://doi.org/10.1016/j.watres.2021.117734

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42. Tibesigwa, T., Olupot, P. W., & Kirabira, J. B. (2021). The critical techno-economic aspects for production of B10 biodiesel from second generation feedstocks: a review. *International Journal of Sustainable Energy*, 1-21.

43. Tutesigensi, A., Kibwami, N., & Matege, S. B. (2021). The Status of Value Management Practice on Construction Projects in Uganda and Strategies for Improvement. *Journal of Construction in Developing Countries*, *26*(2), 251-267

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45. two contrasting peri-urban areas in Uganda. *Environmental Monitoring and Assessment*, *193*(4), 1-25.

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50. Yiga V. A, M. Lubwama, S. Pagel, P. W. Olupot, J. Benz, C. Bonten. Optimization of tensile strength of PLA/clay/rice husk composites using Box− Behnken design. *Biomass Conversion and Biorefnery (2021)*.https://doi.org/10.1007/s13399-021-01971-3.

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56. Yiga, V. A., Lubwama, M., & Olupot, P. W. (2021). Characterization of Rice Husks as Potential Reinforcement for Polymer Composites. *Materials Circular Economy*, *3*(1), 1-8.

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Conference papers

1. Ngobi, T. G., Manga, M., Kibwami, N., & Tutesigensi, A. (2021, September). Construction occupational safety and health incident reporting, recording, monitoring and management in Uganda. In *Proceedings of the 37th Annual ARCOM Conference* (pp. 269-278). Association of Researchers in Construction Management.
2. Vianney Andrew Yiga, Michael Lubwama, Peter Wilberforce Olupot. "Investigation on char residues and mean reactivity of compression molded rice and coffee husks bio-char reinforced polypropylene". *5th Thermal and Fluids Engineering Conference (TFEC).* April 5th-8th (2020) Sheraton Hotel, New Orleans, Louisiana, USA.https://www.astfe.org/tfec2020/
3. Vianney Andrew Yiga, Michael Lubwama, Peter Wilberforce Olupot. "Characterization of rice husks as potential reinforcement for polylactic acid composites". *5th International Conference on natural fibers (ICNF).* May 17th-19th (2021) Funchal, Portugal.https://icnf2021.fibrenamics.com/
4. Vianney Andrew Yiga, Michael Lubwama, Peter Wilberforce Olupot. "Application of Response Surface Methodology for optimizing tensile strength of rice husk fiber-reinforced polylactic acid composites". 2nd*International Online Conference on Polymer Science (IOCPS) - Polymers and Nanotechnology for Industry 4.0.* November 1st-15th (2021) Online.https://iocps2021.sciforum.net/

Book chapters

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2. Okwel, M., Alinaitwe, H. and Kalumba, D. (2021)Health and safety performance in the Ugandan construction industry In Patrick Manu, Fedilis Emuze, Tarcisio Aberue Saurin, and Boneventura H W Hadikusumo (eds) Construction Health and Safety in developing countries. p 102 – 113, Routledge, London.
3. Arineitwe, F., Serugunda, J., & Okello, D. (2021, January). Development of the Protocol for Inter-Autonomous Systems Routing in Software Defined Networks. In *2021 IEEE 11th Annual Computing and Communication Workshop and Conference (CCWC)* (pp. 0414-0422). IEEE.
4. Byagaba, E., & Mukiibi, S. (2021). The Relationship between Public Transport and the Location of Shanty Settlements in Kampala City. *East African Journal of Business and Economics*, *3*(1), 130-146. https://doi.org/10.37284/eajbe.3.1.365
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6. Kayiwa, R., Kasedde, H., Lubwama, M., & Kirabira, J. B. (2021). Mesoporous activated carbon yielded from pre-leached cassava peels.
7. Kigozi, M., Koech, R. K., Orisekeh, K., Kali, R., Kamoga, O. L., Padya, B., … & Dzade, N. Y. (2021). Cobs Porous Carbon-Based Materials With High Energy And Excellent Cycle Stability For Supercapacitor Applications.
8. Lukanga, R., Ayebare, G. K., Najjuuko, C., Mugume, E., & Okello, D. (2021, May). Leveraging TV White Spaces for Rural Broadband Connectivity. In *2021 IST-Africa Conference (IST-Africa)* (pp. 1-8). IEEE.
9. Manga, M., Okeny, L. O., Ngobi, T. G., Pamela, A. O., Namakula, H., Kyaterekera, E., ... & Kibwami, N. (2021). Impacts of storage tanks under the indirect cold water supply system on household water quality: a case of Wakiso District, Uganda. *Water Supply*.

10. Mugala, S., Okello, D., & Serugunda, J. (2021, May). Coverage and Rate Analysis of a UAV Enabled Heterogeneous Network. In *2021 IST-Africa Conference (IST-Africa)* (pp. 1-10). IEEE.

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15. Ssekatawa, K., Byarugaba, D., Kato, C., Wampande, E., Ejobi, F., Nakavuma, J., … & Kirabira, J. (2021). Physiochemical properties and antibacterial activity of silver nanoparticles green synthesized by Camellia sinensis and Prunus africana extracts.

16. Yiga, V. A., Lubwama, M., & Olupot, P. W. (2020).0 investigation on char residues and mean reactivity of compression molded rice and coffee husks bio-char reinforced polypropylene. In *ASTFE Digital Library*. Begel House Inc.

5.3 Patents Registered

1. Dr Cosmas Mwikirize under WO 2021/058288 A1, WO 2020/036968 A9 and US 2019/0378293 A1.
2. P. W. Olupot, E. Menya, H. M. Kalibbala, S.M. Okodi, B. Nabuuma. J. Jjagwe, J. Wakatuntu, T. Kavuma, S. Kavuma, A. Wabwire.
   Uganda Provisional Patent UG/P/2021/00001: System for handwash wastewater treatment and recycling with ancilliary control units for disinfection and touchless handwashing operation.

Field of the Invention

This invention generally relates to an equipment, method, and system for handwashing with a touchless mechanism for dispensing water, soap and/or disinfectant, and with a wastewater treatment system for treating wastewater generated from handwashing for subsequent reuse for handwashing.

Background of the Invention

With the entire world battling with a global pandemic of COVID-19, washing hands correctly with soap and clean water has been widely recommended as one of the most effective ways to curb the spread of the disease. Most of the handwashing devices employed especially in the developing world are integrated with faucets and/or soap dispensers which provide a stream of liquid and soap, respectively. In some instances, instead of using a soap dispenser, a piece of bar soap is provided for common use. In the former option, during handwashing, an operator presses the soap dispenser to access the soap, while in the latter option, the user touches the bar soap, followed by opening of the faucet to allow the user access to a stream of water for cleaning and rinsing the hands.

However, extensive handling of the dispensing components and/or bar soap at different points by multiple users potentially leads to cross-contamination. This is because, depending on the frequency of use, it may be impossible to handle such devices without coming into contact with unwanted substances and microorganisms that reside in places where one must contact the dispersers before initiating the handwashing process. In such situations, water and soap can be excessively used by some users, leading to wastage.

The other challenge associated with these devices is the improper disposal of the generated wastewater to the environment. This practice not only wastes water but can also lead to the spread of waterborne diseases. The situation can be exacerbated by the fact that handwashing still remains limited among some communities in developing countries, due to water scarcity. For instance, in Uganda, about 51 and 82% of the citizens lack access to safe water and improved sanitation facilities, respectively[1].

This scenario disproportionately affects the poor, refugees, and/or displaced persons in crowded settlements, exposing them to high risks of spreading COVID-19, as well as other illnesses. Using wastewater treatment technologies, the handwashing wastewater can be treated, and subsequently recycled for similar purposes.

The present invention therefore addresses the problems mentioned above by providing touchless devices for dispensing soap, water, and/or disinfectant in pre-determined amounts and time during handwashing. In addition, the invention treats the wastewater generated from handwashing to levels permissible for recycling and reuse within the system. The use of solar power supply ensures that this invention can be used in off-grid locations as well.

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[1] Available athttps://water.org/our-impact/uganda/

6.0 Human Resources 2021

6.1 Staff Transfers

	NAME	GENDER	DESIGNATION	FROM	TO
1	Josephine Opolot Apolot	F	Principal Human Resource Officer	Directorate of Human Resources (SDWRB)	CEDAT
2	Atim Jane Rebecca	F	Records Assistant	Directorate of Human Resources, Records and Information Division	CEDAT
3	Musinguzi Harriet	F	Principal Communication Officer	School of Law	CEDAT
4	Namaganda Kanzira Agnes	F	Librarian 1	Main Library	CEDAT Library
5	Ms. Natukunda S	F	Library Assistant	Main Library	CEDAT Library
6	Natukunda Safra	F	Library Assistant	Main Library	CEDAT Library
7	Ssambwa Ronald	M	College Bursar	College of Education and External studies	CEDAT
8	Mbabazi Rosette	F	Accountant	Women and Gender studies	CEDAT
9	Isemaghendera Alex	M	Web Administrator	School of Law	CEDAT
10	Ikomo David	M	Assistant Procurement Officer		CEDAT
11	Tafabwire Emmanuel John	M	Records Assistant	Directorate of Human Resources, Records and Information Division	CEDAT
12	Racheal Irikiriza	F	Human Resources Officer	CEDAT	Directorate of Human Resources (SDWRB)
13	Betty Kyakuwa	F	Principal Communication Officer	CEDAT	COBAMS/CEES
14	Mark K. Rujumba	M	Web Administrator	CEDAT	COBAMS/CEES
15	Christine Ninsiima	F	Accountant	CEDAT	Main Office
16	Stephen Kayima	M	College Bursar	CEDAT	CEDAT /CEES
17	Proscovia Mukama	F	Librarian 1	CEDAT	CHS
18	Jimmy Ntambi	M	Security Guard	CEDAT	CAES

6.2 Staff who retired

	NAME	GENDER	DESIGNATION	DATE OF RETIREMENT
1	Nalubula Nuru	F	Cleaner	November 2021
2	Namakula S N Madiinah	F	Senior Administrative Assistant	July 2021
3	Tamare J N Fredrick	M	Head Cleaner	August 2021
4	Muwonge Kyazze Mathias	M	Assistant Lecturer	November 2021
5	Nanjonjo Dorothy	F	Cleaner	June 2021

6.3 Staff who died

	NAME	GENDER	DESIGNATION	DEPARTMENT	DATE OF DEATH
1	Dr. Godfrey Mesigye	M	Lecturer	Construction Economics and Mgt	June 2021
2	Dr. Kerali Anthony	M	Professor	Construction Economics and Mgt	February 2021
3	Mr. Jacob Odama	M	Lecturer	Fine Art	December 2021

6.4 Staff who were promoted

	NAME	GENDER	RANK PROMOTED TO	DEPARTMENT
1	Dr. Assumpta Nnagenda Musana	M	Senior Lecturer	Architecture and Physical Planning
2	Dr. Kenneth Ssemwogerere	M	Senior Lecturer	Architecture and Physical Planning
3	Dr. Namaganda Jane Kiyimba	F	Lecturer	Electrical and Computer Engineering
4	Dr. Andrew Katumba	M	Lecturer	Electrical and Computer Engineering
5	Dr. Miyingo Emmanuel Wokulira	M	Lecturer	Electrical and Computer Engineering
6	Dr. Abubaker Matovu Waswa	M	Lecturer	Electrical and Computer Engineering
7	Dr. Karungi Doreen	F	Lecturer	Architecture and Physical Planning
8	Dr. Evassy Amanda Tumusiime	F	Associate Professor	Visual Communication, Design and Multimedia

6.5 Newly recruited staff in the University service 2021

	NAME	GENDER	DESIGNATION	DEPARTMENT
1	Ms. Tumuhimbise Carolyne Nabweteme		Assistant Lecturer	Construction Economics and Management
2	Mr. Abala Nicholas	M	Assistant Lecturer	Construction Economics and Management
3	Mr. Francis Ssali	M	Assistant Lecturer	Construction Economics and Management
4	Mr. Safiki Ainomugisha	M	Assistant Lecturer	Construction Economics and Management
5	Mr. Ivan Bamweyana	M	Assistant Lecturer	Construction Economics and Management
6	Ms Winniefred Naluzze	M	Assistant Lecturer	Industrial and Applied Design

6.6 Staff offered post retirement contracts

	NAME	GENDER	DESIGNATION	DEPARTMENT
1	Okidi Peter Lating	M	Associate Prof	Electrical and Computer Engineering
2	Mukiibi Stephen	M	Associate Prof	Architecture and Physical Planning

6.7 Staff who resigned

	NAME	GENDER	DESIGNATION	DEPARTMENT
1	Prof. Philip Kwesiga	M	Professor	Visual Communication Design And Multimedia
2	Dr. Patrick Serunjogi	M	Lecturer	Visual Communication and Multimedia
3	Mr. Salverino Tusiime	M	Cleaner	Mechanical Engineering

6.8 Staff confirmed in University Service

	NAME	GENDER	DESIGNATION	DEPARTMENT
1	Mr. Sebbaale Derrick	M	Assistant Lecturer	Electrical and Computer Engineering
2	Dr. Musa Manga	M	Lecturer	Construction Economics and Management
3	Emilly Busingye	F	Messenger	Civil and Environment Engineering
4	Eva Babirye	F	Copy Typist	Architecture and Physical Planning
5	Mary Nalugwa Nakawesa	F	Cleaner	Principal's Office
6	Teddy Nabayego	F	Laboratory Attendant	Mechanical Engineering

7	Charles Oigu	M	Laboratory Attendant	Principal's Office
8	Margaret Kabahuma	F	Stenographer	Mechanical Engineering
9	Salverino Tusiime	M	Cleaner	Mechanical Engineering
10	Richard Ssemujju	M	Technical Assistant	Architecture and Physical Planning

6.9 Staff appointed on stop gap measure

NO.	NAME	GENDER	DESIGNATION	UNIT/DEPARTMENT
1.	Kigozi Hadadi	M	Systems Administrator	Principal's Office
2.	Julius Ssemukasa	M	Comp. Lab Technician	Dean's Office MITSFA
3.	Harrison Watsala	M	Gallery Assistant Administrator	Dean's Office MITSFA
4.	David Mutamba	M	Laboratory Technician	Principal's Office
5.	Peter Kiyaga	M	Driver	Principal's Office
6.	Patrick Hashamunda	M	Security Guard	Principal's Office
7.	Robert Adowa	M	Security Guard	Principal's Office
8.	Titus Bakara	M	Security Guard	Principal's Office
9.	Deus Byomuhangi	M	Security Guard	Principal's Office
10.	David Aliga	M	Security Guard	Principal's Office
11.	Hannington Mbazira	M	Model	Dean's Office MTSIFA
12.	Prossy Najjingo	F	Model	Dean's Office MTSIFA
13.	Beatrice Akudo	F	Model	Dean's Office MTSIFA
14.	Oliver Naggayi	F	Model	Dean's Office MTSIFA
15.	Janet Namboga	F	Model	Dean's Office MTSIFA
16.	Hadija Nankya	F	Model	Dean's Office MTSIFA

6.10 Project staff

NO.	NAME	GENDER	DESIGNATION	PROJECT
1.	Mr. Brian Mujuni	M	Project Coordinator	MAPRONANO ACE
2.	Mr. Byamugisha Sabiiti	M	Monitoring and Evaluation Officer	MAPRONANO ACE
3.	Mr. Bosco Karubanga	M	Assistant Accountant	MAPRONANO ACE

6.11 Staff appointed on part time basis

NO	NAME	GENDER	DEPARTMENT
1	Ms Margaret Nakiwala	F	Construction Economics and Management
2	Ms. Sophie Balunywa	F	Construction Economics and Management
3	Mr Kego Kris Solomon	M	Construction Economics and Management
4	Ms Barbara Namakula	F	Construction Economics and Management
5	Ms Sylvia Nakintu	F	Construction Economics and Management
6	Ms. Gwokyalya Waliya	F	Construction Economics and Management
7	Ms. Sarah Chemonges	F	Construction Economics and Management
8	Mr Jamal Bachou	M	Construction Economics and Management
9	Mr Tom Mukasa	M	Construction Economics and Management
10	Ms Hakiri Julian	F	Construction Economics and Management
11	Andrew Bwambale	M	Construction Economics and Management
12	Mr. Akanga Arthur	M	Geomatics and Land Management
13	Ms. Angwech Judith	F	Geomatics and Land Management
14	Kito L. Silas	M	Civil and Environmental Engineering

15	Mubiru Kenneth	M	Civil and Environmental Engineering
16	Yiga Vianney	M	Mechanical Engineering
17	Kayiwa Ronald	M	Mechanical Engineering
18	Lwanyaga Ddumba Joseph	M	Mechanical Engineering
19	Dr. Adam Mohammed Sebbit	M	Electrical and Computer Engineering
20	Mr. Patrick Mugwanya	M	Electrical and Computer Engineering
21	Mr. Joseph Olwa	M	Electrical and Computer Engineering
22	Ms. Eleanor Sanyu Kajuba	F	Electrical and Computer Engineering
23	Dr. John B Barugahare	M	Architecture and Physical Planning
24	Eng Hans W Mwesigwa	M	Architecture and Physical Planning
25	Mr. Joy Mike Yiga	M	Architecture and Physical Planning
26	Nassanga Faridah Muhammad	M	Industrial and Applied Design
27	Babirye Angella Birabwa	F	Industrial and Applied Design

6.12 Staff appointed on voluntary terms

	NAME	GENDER	DESIGNATION	UNIT
1	Betty Namaloba	F	Sanitary Cleaner	Principal's Office
2	Kyagulanyi Ivan	M	Sanitary Cleaner	Principal's Office
3	Wambeti Stephen	M	Sanitary Cleaner	Principal's Office
4	Betty Namaloba	F	Sanitary Cleaner	Principal's Office

6.13 College Headship and Heads of Units/Departments

NO	NAME	GENDER	RANK	SCHOOL/DEPARTMENT/UNIT
1	Prof. Henry Alinaitwe	M	Principal	CEDAT
2	Dr. Venny Nakazibwe	F	Deputy Principal	CEDAT
3	Assoc. Prof. Kizito Maria Kasule	M	Dean	MTSIFA
4	Assoc. Prof. Moses Musinguzi	M	Dean	The Built Environment
5	Eng. Dorothy Okello	F	Dean	Engineering
6	Dr. Kiggundu Amin Tamale	M	Head of Department	Architecture and Physical Planning
7	Dr. Nathan Kibwami	M	Head of Department (Acting)	Construction Economics and Mgt
8	Dr. Lydia Mazzi Kayondo	F	Head of Department	Geomatics and Land Management
9	Assoc. Prof. Ifee Francis Xavier	M	Head of Department (Acting)	Fine Art
10	Assoc. Prof. Amanda Tumusiime	F	Head of Department	Visual Communication and Multimedia

11	Mr. Mwesigwa Stephen Luyombya	M	Head of Department (Acting)	Industrial Art and Applied Design
12	Dr. Robinah Nakawunde Kulabako	F	Head of Department	Civil And Environmental Engineering
13	Prof. Kirabira, John Baptist	M	Head of Department	Mechanical Engineering
14	Dr. Jonathan Serugunda	M	Head of Department (Acting)	Electrical and Computer Engineering
15	Josephine Opolot Apolot	F	Principal Human Resource Officer	Human Resource Office
16	Musinguzi Harriet	F	Principal Communication Officer	Communication Office
17	Alfred Tingo	M	Senior Assistant Registrar	College Registrar Office
18	Namaganda Kanzira Agnes	F	Librarian 1	College Library
19	Ssambwa Ronald	M	College Bursar	Accounts Office
20	Ikomo David	M	Assistant Procurement Officer	Procurement Office

6.14 Staff on PhD study programmes

	NAME	GENDER	DEPARTMENT	PROGRAM	INSTITUTION/UNIVERSITY	DATES		COMMENTS
						Start Date	End Date	
1	Ssembatya Martin	M	Mechanical Engineering	PhD	Texas A & M-USA	10-Aug-18	10-Aug-22	On study Leave
2	Ssewanyana Robert	M	Industrial Arts & Applied Design	PhD	Durham University	01-Feb-19	31-Jan-22	On study Leave
3	Junior Patrick	M	Construction Economics & Management	PhD	University of Queensland, Australia	14-Apr-18	31-Mar-22	On study Leave
4	Ariho Gordon	M	Electrical & Computer Engineering	PhD	Institute of International Education	31-Jul-17	31-Jul-22	On study Leave
5	Nanyonga Margaret	F	Electrical & Computer Engineering	PhD	Durham University Dublin	01-Apr-20	31-Mar-24	On study Leave

6	Mujuni Francis	M	Mechanical Engineering	PhD	Loughbrough University-UK	01-Oct-19	30-Sep-22	On study Leave
7	Nankunda Charity	F	Construction Economics & Management	PhD	University of Birmingham-UK	01-May-21	30-Apr-24	On study Leave
8	Nakato Josephine Kakande Lutalo	F	Electrical & Computer Engineering	PhD	University of Paderborn-Germany	01-Jan-21	31-Jul-23	On study Leave
9	Namujju Lilian Donna	F	Electrical & Computer Engineering	PhD	University of Paderborn-Germany	01-Jan-21	31-Jul-23	On study Leave
11	Dativa Kagobora Tizikara	F	Electrical & Computer Engineering	PhD	University Of Manchester-UK	26-Sep-21	31-Jul-24	On study Leave
12	Abeho Diana Rose	F	Geomatics & Land Management	PhD	University of Cape Town	01-May-21	30-Apr-24	On study Leave
13	Muyonjo Geoffrey Mukiibi	M	Civil and Environmental Engineering	PhD	Ardhi University, Dar es Salaam	01-Aug-20	31-Jul-23	On Study leave
14	Namutebi Dorah Kasozi	F	Industrial Arts & Applied Design	PhD	Makerere University	01-Jul-21	31-Dec-24	On study Leave
					Doing PhD but not on study leave			
14	Kaconco James	M	Mechanical Engineering	PhD	Makerere University		02-Nov-20	Not on Study leave
17	Nakimbugwe Annette Sebba	F	Visual communication, design & multimedia	PhD	Makerere University	12-Nov-15	09-Feb-21	Not on Study leave
18	Nanfuka Joan	F	Fine Art	PhD	Makerere University	2020	2024	Not on study leave

19	Nakisanze Sarah Muyingo	F	Industrial art and applied design	PhD	Makerere University	12-Jun-17	13-Jun-20	Not on Study leave
20	Ndagire Esther	F	Industrial art and applied design	PhD	Makerere University	22-Oct-15	07-Feb-21	Not on Study leave
21	Nsereko Joseph Raymond	M	Visual communication, design & multimedia	PhD	Makerere University	03-Nov-20	04-Nov-23	Not on Study leave
22	Okodi Allan	M	Civil and Environmental Engineering	PhD	University of Alberta, USA	01-Jan-17	30-Mar-21	Study leave expired, not on ground.
23	Tumusiime Edmund	M	Mechanical engineering	PhD	Makerere University	05-Jan-16	28-Sep-21	Not on study leave
24	WERE Andrew Gilbert	M	Architecture and Physical Planning	PhD	Makerere University	17-Oct-17	17-Oct-20	Not on study leave
25	Kyosimire Doreen	F	Architecture & Physical Planning	PhD	Makerere University	01-Jan-17	31-Dec-20	Not on study leave
26	Makabayi Brian	M	Geomatics & Land Management	PhD	Makerere University	2016/2017	2019/2020	Not on study leave
27	Mazimwe Allan	M	Geomatics & Land Management	PhD	Makerere University	14-Aug-17	15-Aug-20	Not on study leave
28	Semanda Julius	M	Construction Economics and Management	PhD	Makerere University/Kwazulu Natal	2018	2022	Not on study leave
29	Ssali Francis	M	Construction Economics and Management	PhD	Makerere University/Kwazulu Natal	2018	2022	Not on study leave

6.15 Staff on sabbatical leave

	NAME	GENDER	DEPARTMENT	PROGRAM	INSTITUTION/UNIVERSITY	DATES		COMMENTS
1	Rose Namubiru Kirumira	F	Fine Art	Sabbatical leave	Stallenbouch University	01-Mar-2021	28-Feb-2022	On sabbatical leave

6.16 Staff who obtained new qualifications

	NAME	GENDER	DEPARTMENT	QUALIFICATION	INSTITUTION/UNIVERSITY
1	Maximus Byamukama	M	Electrical and Computer Engineering	PhD	Makerere University
2	John Barugahare	M	Architecture and Physical Planning (part time)	PhD	Makerere University

Summary of CEDAT Establishment as at 31st December 2021

School of The Built Environment

Department of Architecture and Physical Planning (DAPP)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	1	3	25.0
Associate Professor	4	1	3	25.0
Senior Lecturer	6	4	2	66.7
Lecturer	8	6	2	75.0
Assistant Lecturer	6	11		
Total	**28**	**23**	**10**	**82.1**

Department of Construction Economics and Management (DCEM)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	3	0	3	0.0
Associate Professor	3	0	3	0.0
Senior Lecturer	6	0	6	0.0
Lecturer	12	4	8	33.3
Assistant Lecturer	18	19		
Total	**42**	**23**	**20**	**8.3**

Department of Geomatics and Land Management (DGLM)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	2	0	2	0.0
Associate Professor	2	2	0	100.0
Senior Lecturer	4	2	2	50.0
Lecturer	8	3	5	37.5
Assistant Lecturer	4	4	0	100.0
Total	**20**	**11**	**9**	**55**

School of Engineering

Department of Civil and Environmental Engineering (DCEE)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	0	4	0.0
Associate Professor	4	2	2	50.0
Senior Lecturer	9	1	8	11.1
Lecturer	12	15		
Assistant Lecturer	15	8	7	53.3
Total	**44**	**26**	**21**	**59.1**

Department of Mechanical Engineering (DME)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	1	3	25.0
Associate Professor	4	1	3	25.0
Senior Lecturer	8	2	6	25.0
Lecturer	9	4	5	44.4
Assistant Lecturer	12	7	5	58.3
Total	**37**	**15**	**22**	**40.5**

Department of Electrical and Computer Engineering (DECE)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	6	0	6	0.0
Associate Professor	4	1	3	25.0
Senior Lecturer	10	1	9	10.0
Lecturer	15	12	3	80.0
Assistant Lecturer	16	16	0	100.0
Total	**51**	**30**	**21**	**58.8**

Margaret Trowel School Of Industrial And Fine Art (MTSIFA)

Department of Fine Art (DFA)

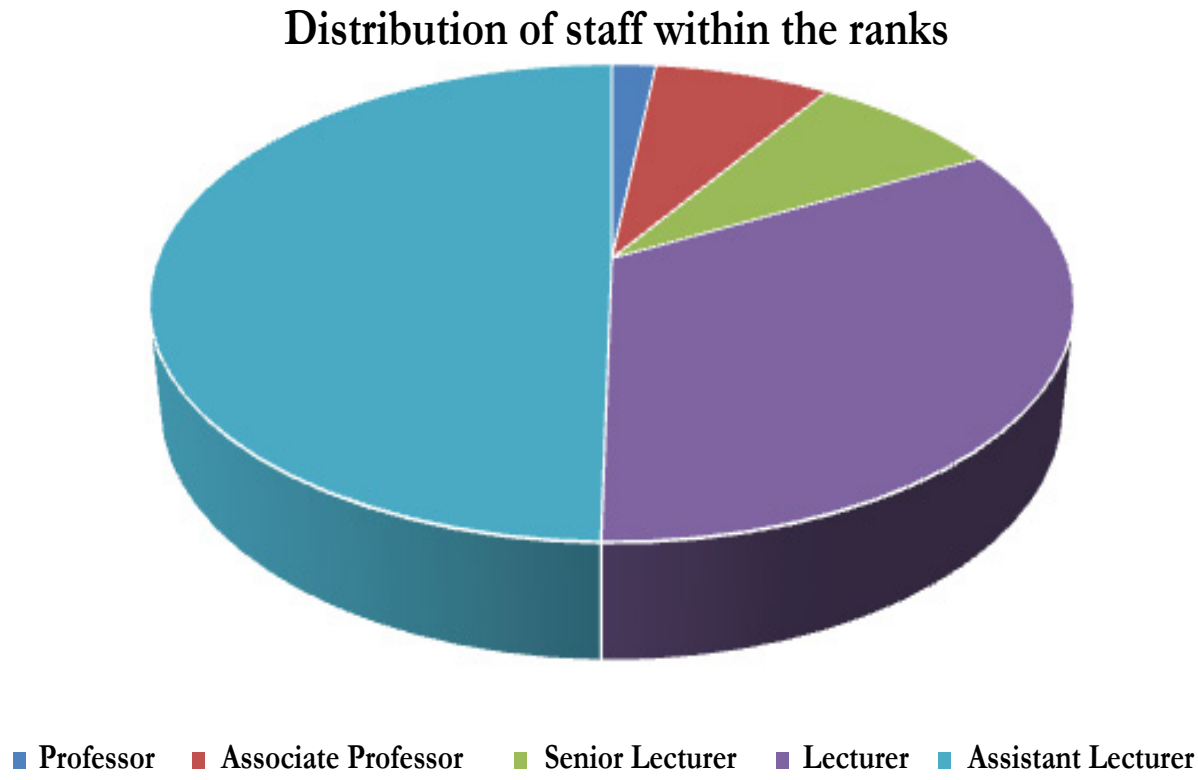
Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	0	4	0.0
Associate Professor	4	2	2	50.0
Senior Lecturer	6	2	4	33.3
Lecturer	6	2	4	33.3
Assistant Lecturer	5	5	0	100.0
Total	**25**	**11**	**14**	**44.0**

Department of Industrial Art and Applied Design (DIAD)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	0	4	
Associate Professor	4	2	2	50.0
Senior Lecturer	6	1	5	16.7
Lecturer	6	4	2	66.7
Assistant Lecturer	4	7		
Total	**24**	**14**	**13**	**58.3**

Department of Visual Communication and Multimedia (DVCM)

Rank	Established Positions	Filled	Vacant	% Filled
Professor	4	None	4	None
Associate Professor	4	1	3	None
Senior Lecturer	6	0	6	0.0
Lecturer	6	4	2	66.7
Assistant Lecturer	4	4	0	100.0
Total	**24**	**9**	**15**	**37.5**



Note:

Depart of Architecture and Physical Planning, Construction Economics and Management and Industrial Art and Design have more staff at the level of Assistant Lecturer than the established positions.

6.17 Key Administrative and support staff in 2021

	Position	Name of Office Holder
1.	Principal	Prof. Henry Alinaitwe
2.	Deputy Principal	Dr. Venny Nakazibwe
3.	College Registrar	Dr. Alfred Tingo
4.	Registrar, School of Engineering	Ms. Esther Kyomukama
5.	Registrar MTSIFA	Ms. Anne Auma Namoah
6.	Registrar, School of the Built Environment	Mr. Moses Kasujja
7.	College Bursar	Mr. Ronald Ssambwa
8.	Accountant	Mr Joram Tugumisirize
9.		Ms. Rosette Mbabazi
10.	Principal Human Resources Office	Ms. Josephine Apolot Opolot
11.	Procurement Office	Mr. David Ikoma
12.	Principal Communications Officer	Ms. Harriet Musinguzi

13.	Web Administrator	Mr. Alex Isamaghedera
14.	System Administrator	Mr. Hadadi Kigozi
15.	Senior Administrative Assistant	Ms. Madinah Namakula
16.	Custodian	Mr. Yorokamu Muhangi
17.		Ms. Juliet Oundo
18.	Administrative Secretary	Ms. Ruth Namusisi

Accomplishments

- The administrative function of the college was adequately staffed and functional.
- Issues identified and addressed timely for instance in the area of systems administration, financial transactions as well as the general security and wellbeing the College.

Challenges

a) The College did not have a Grants Officer and this affected the performance of the college in grants and proposal writing.
b) The Institute of Heritage Conservation and Restoration lacks staff.
c) The college lacks records clerks to manage records and archives.
d) The college student's archive is in a sorry state and needs lots of money to be re organized and kept safe.

Recommendations

a) The University should deploy a Grants Officer at CEDAT just like it was done for some other colleges.
b) The University should appoint staff for the Institute of Heritage Conservation and Restoration.
c) The university should deploy at least two record clerks to handle students' records.

7.0
CEDAT Procurement in 2021

7.0 CEDAT Procurements in 2021

7.1 January – June 2021

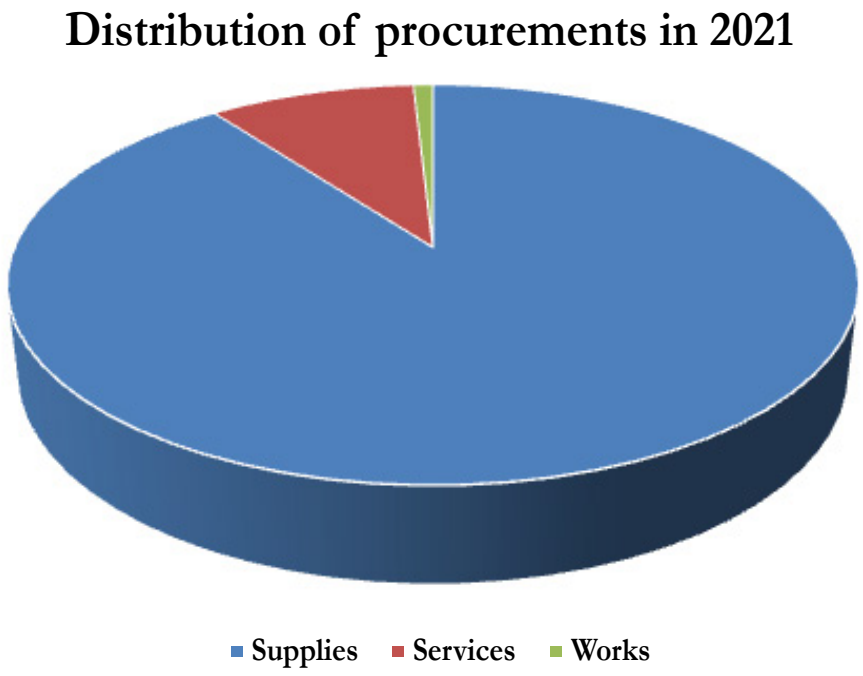
	Month	Supplies	Services	Works
1	January,2021	7,200,000	-	-
2	February , 2021	-	-	-
3	March , 2021	72,661,892	*37,761,000*	-
4	April , 2021	-	-	-
5	May, 2021	592,655,021	7,398,600	-
6	June, 2021	*4,840,841*	-	-
	TOTAL	***677,357,754***	**45,159,600**	**Nil**

7.2 July– December 2021

	Month	Supplies	Services	Works
1	July ,2021	-	-	-
2	August, 2021	-	-	-
3	September , 2021	82,533,943	3,481,000	3,186,000
4	October , 2021	3,900,000	11,780,000	-
5	November, 2021	7,279,980	-	4,790,800
6	December, 2021	36,339,246	23,942,280	-
	TOTAL	**130,053,169**	**39,203,280**	**7,976,800**

JANUARY –DECEMBER, 2021

		Supplies	Services	Works
	TOTALS	**807,410,923**	**84,362,880**	**7,976,800**



Total amount spent on procurement activities, UGX: 899,750,603

Achievement s made

1. Procurement plan put in place for F/Y 2020-2021
2. Procurements done in accordance with the College Procurementplan
3. Timely delivery of assorted teaching materials for user units
4. Improved relationship with stakeholders
5. Timely payment of service providers.
6. Quality delivery of materials with zero defects.
7. Reduced procurement audit queries for the College.

Achievement s made

1. Procurement plan put in place for F/Y 2020-2021
2. Procurements done in accordance with the College Procurementplan
3. Timely delivery of assorted teaching materials for user units
4. Improved relationship with stakeholders
5. Timely payment of service providers.
6. Quality delivery of materials with zero defects.
7. Reduced procurement audit queries for the College.

Impediments / Challenges during the year in achieving stated goals and objectives:

- Some departments need constant reminders to submit procurement requisitions
- Un- realistic market surveys prices submitted on Procurement form
- Poor statement of requirements (Specifications and Terms of references)
- Poor planning by the user departments- users do not want to follow the procurement plans for the College.
- Increase in prices for the procurable items due to COVID -19 effects and taxes yet our budget does not increase. This leads to the procurement of few items which can fit within our college budget.
- Delays on warranting of funds on IFMS to enable user Departments to know the available funds to start procurement Process.
- Project investigators fail to submit procurement plans to be incorporated into the college procurement plan

Challenges have been handled by:

- Liaising with departmental heads, reduce material quantities to fit within planned budgets
- Advising and guiding user units to properly prescribe the requirements or develop clear specifications
- Principal investigators to be advised to submit procurement plans for incorporation into the College procurement plan.
- Improve the knowledge of user departments concerning the procurement process.

Suggestions on way forward:

- All requisitions for procurement of teaching materials must be submitted in the second week of the beginning of the semester to avoid delays and failure to achieve intended objectives!
- All ICT related requirement MUST be in line with the University directive of liaising with the Technical arm- DICTS! To help in development of proper specifications
- Use of framework contract prices posted on the University Intra-net for most commonly used item and ICT equipment's
- Improve engagements with various stakeholders to iron out communication gaps on procurement related matters.

Users to submit their requisitions to College Procurement and Disposal Unit to carry out market research to obtain prices before filling Form 5 for approval by the Accounting Officer.

8.0 The Finance Function at CEDAT

8.0 The Finance Function at CEDAT

8.1 January – June 2021

Line Item	AMOUNT
Part time teaching /Extra load	356,236,318
Workshops and Seminars	16,732,720
Staff training	22,600,000
Newspapers,Books and Periodical	11,818,056
Computer Supplies/Consumables	18,386,288
Welfare Entertainment(Office tea,Lunch,refreshments during presentations,Examinations,marking)	131,118,627
Printing Stationery Photcopy & Binding	26,794,637
Telecommunications(Airtime/Data)	45,279,544
Cleaning and sanitation materials	22,095,976
Travel Inland(Students and staff field trips	17,749,680
Fuel Oil and Lubricants	54,660,704
Scholarships and related costs(Teaching materials,Examinations, External Examiners,Recess,Internship etc.)	1,111,476,820
Research	20,000,000
Incapacity death and benefits & funeral expenses	6,880,000
Subscriptions to affiliation Bodies	4,075,000
Maintenance Civil	23,556,354
Maintenance Vehicles	14,385,000
Maintenance Machinery-Equipment-Furniture	42,567,930
Maintenance Others	1,286,342
TOTAL	**1,947,699,996**

8.2 January – June 2021

Line Item	Amount (UGX)
Allowances	27,983,528
Incapacity death and benefits & funeral expenses	1,500,000
NewsPapers	410,000
Computer Supplies	17,920,003
Welfare Entertainment	35,296,580
Printing Stationery Photcopy & Binding	25,663,052
Subscriptions	5,000,000
Telecommunications	15,000,000
Cleaning and sanitation	23,318,500
Licences	320,000
Fuel Oil and Lubricants	27,601,288
Maintenance Civil	17,409,800
Maintenance Vehicles	7,144,304
Maintenance Machinery-Equipments-Furniture	8,315,100
Maintenance Others	10,006,900
Scholarships and related costs	242,496,618
SUB-TOTAL	**465,385,673**

Notes

i) College was able to pay all the part time lecturers who taught and submitted results.

ii) The College procured and paid for teaching materials, internship materials, Recess term materials, Examination materials.

iii) We paid for Airtime and Data to enable online teaching as a new normal caused by the COVID-19 Pandemic.

iv) The College procured and paid for the COVID-19 requirements to ensure safety of staff and students at the college.

v) We were able to carry out minor repairs to the offices, lecture rooms, student chairs, students and staff toilets to improve on the learning and working environment for students and staff.

vi) The College procured and paid for cleaning materials to ensure that the teaching and working environment is clean.

i) We paid for assorted stationery and Fuel to enable the college administration offices operate smoothly.
ii) The College catered for staff welfare by providing break tea to all staff, Eats and refreshments during meetings, vivas, PhD defense etc.

Challenges

1. The budget for the financial year 2021/2022 was cut by 40%.This is affecting all the planned activities for the year.
2. Insufficient budget ceiling given to the College.
3. Delays in releasing of funds which affect the college plan.
4. The college has many part-time lecturers who consume a bigger percentage of the budget because we need their services.
5. The College being a science based, it has many Laboratories which need a lot of maintenance yet funds are not enough.

Recommendations:

1. University management should try to engage Ministry of Finance planning and economic development to waive the 40% budget cut.
2. University Management should consider to increase on the Budget ceilings for Science based Colleges.
3. Funds should always be released as per the work plan.
4. University Management should consider to recruit permanent staff.

9.0
The CEDAT ICT Report 2021

9.1 Status of the LAN Network Infrastructure

- Internet ISP, DICTS at a rate 25000Mbps.
- About 50 cisco switches are clustered to interlink the various units at the College through optical fiber Cable splicing and short reach FTP Cables(CAT5,6) extending internet resources from the Old building to new building.
- The model of the Clustered LAN switches range from Cisco catalyst 2950, with the upper link (gigabit interface) capacity 1000Mbs and downlink capacity 100Mbs with long-reaching internet cables connecting End-user devices in various Units.
- Internet speed delay on downloads between 100-1500Mbs is experienced and this is attributed to capacity of the absolute Clustered Cisco switch and network media.
- Broken internet ports extensions to end-users in class rooms and designated administrative offices require routine replacements and repairs.
- WIFI(MAKAIR AND CEDAT-AIR) the extension of signals is connected from the same LAN, reliably on although during peak times of semesters we experience connection failures

9.2 Status of the Administrative Computers

- Most computing devices that are supporting majority of the administrative office have served beyond life time (10 years), and most of them are not able to support official work effectively.
- We are planning to procure 10 desktop computer,2 Printer, 2scanner, 10UPS and 100 UPS batteries to replace absolute administrative devices was put forth though held because of finance constraints

9.3 Status of the computer labs

The College is running to 8 designated computer labs including;

1. **Main-computer (3034) Lab**

- With a total of 65 machines (20 standalone and 40 N-computing);
- The 20 stand-alone machines obtained from ADB Hest Project, installed Oct/2019 and all still in good condition.
- The Lab also host 40 Ncomputing gadgets, installed but as of now they are off because the hosting server experienced technical issues during lockdown. We're trouble shooting to rectify for restoration of the Ncomputing gadgets.

2. **E-lab old building;**

- Designated at room 240, with 55 Desktops computer, in running condition.

3. **Main-lab Old building**

- Designated at room 245, with 50 Desktops, 30 in running condition and 20 PCS await installation and software updates.
- Most of these computer have been used for

4. **MTSIFA Computer Lab:**

- Mtsifa Computer lab currently has 20 desktop computers including 3 IMAC, with 12 UPS.

- Currently computers at the Lab are all out dated (Manufactured in July 26 th , 2006 and discontinued in June 8th , 2012) in terms of software or hardware installations and upgrades.
- These are of model OptiPlex 360, Processor; Pentium(R) Dual-core CPU. They have no capacity and therefore can hardly be used by the students on 3-Dimesion and motion or animation Design projects.

1. **GIS Comp Lab:**

- State of art Computer Lab for with 38 power workstations all in good condition.

2. **Architecture Lab:**

- The Lab is Located on level-one of the new building, administered by Mr. Kapasa
- Set to enable architectural learners to practice dynamic studio software
- The Lab comprises of 15 stand-alone Computers and 10 APC-750 UPS running.
- However, in this lab there is a need to acquire PCs that are capable of running memory intensive architectural studio software and Graphics.

3. **Graduates Computer Lab;**

- The Lab was formed after a merge of two computer labs (Mechanical and Civil Lab).
- The lab has 9 desktop computers, 6 in running condition.
- The Lab serves graduate students, has capacity to host 30 stand-alone PCs and 50 mobile device connections on Buy Your Own Desktop (BYOD) basis.
- Total PCs at the college are about 250 PCs in all the 8 designated computer labs.
- The College has capacity to host about 500 PCs which can reduce a ratio of learner to computer ratio during practical dynamic skill exchange also including; internet access, research, teaching and learning.

9.4 Information system updates

Muele.mak.ac.ug;

- COVID-19 guidelines prompted learner at Makerere to fully engage the e-learning platform.
- Integrating learner's top domain email accounts to Muele required validity with the processes in migration. Lecturers and students with difficulties were supported for the progress of online exams and access of online lectures on Muele.

AIMS to ACMIS transition supported at College level,

- rectifying and resolving user authentication errors, on escalating to DICTS incase
- Supporting integration of old student's data in old information system (ITS) to ACMIS on authorization from the College registrar.

Webmail.mak.ac.ug;

- University collaborative platform(emailing system)
- Migration of staff and students' accounts supported where automation failed through working with DICTS
- Moderation of mails on cedat@lists.mak.ac.ug

Online Lectures

Access to zoom accounts, meetings and Lectures for users was supported

9.5 Status of the College Projectors

NO.	ROOM NO.	BRAND	MODEL	SERIAL NO.	LAMP HRS	STATUS
1	163	EPSON	EB-95	P9GF230043L	529	Signal cable needed
2	161	EPSON	EB-95	P9GF230046L	915	Signal cable, mini trucking 16x16mm replacement needed.
3	160	EPSON	EB-95	P9GF230087L	1027	Working
4	158	EPSON	EB-95	P9GF230086L	1501	Projector screen replaced
5	149	EPSON	EB-95	P9GF23005/6L	1448	Signal Cable needed
6	142A	EPSON	EB-95	P9GF230042L	417	Signal cable replaced
7	141	EPSON	EB-95	P9GF230048L	1705	Signal cable and trucking is needed
8	MEC3	INFOCUS	IN126a	BNDT40300210		Signal replaced
9	MEC4	OPTOMA		Q8WR541AAA AAC0192		Projector mounted and signal cable replaced
10	M4	EPSON	EB-95	P9GF230083L	605	Signal cable needed
11	M1	EPSON	EB-95	P9GF230094L	902	Signal cable needed
12	M2	EPSON	EB-96	P9GF230047L	930	Signal cable needed
13	Studio 2	EPSON	EB-485Wi	QUFY2X0211L	495	Signal cable replaced
14	Studio 4	EPSON	EB-475Wi	QUFF2X0219L	475	Signal cable replaced
15	Studio 5	EPSON	EB-485Wi	QTVF2Y1000L		Projector mounted
16	NEW BOARD ROOM	EPSON	EB-X31	WE8K6Z02738	691	Signal cable replaced
17	CONFERENCE HALL	EPSON	EB-S41	X4HJ7X03648XF	290	Signal cable replaced second projected not mounted
18	MAIN LAB	DELL	1210S	42305M1		Using mobile projector
19	LAB 3034	EPSON	EB-			Working

Rooms without overhead projectors,
Newbuilding; 4033, 4034, 4035, 3033, 3003, 3004, 3005, Studio 1, Studio 3
Old-building; 142B, 168, 169, 105
· 10 Signal cables are needed to replace the faulty ones in all lecture rooms as mentioned in the table above.
· 12 not working projectors, with various technical issues, some beyond repairs are in ICT store Room 3035

Air Conditioning Status;

- Maintenance and repairs to ACs requires annual servicing of a contract with the service provider

Maintenance and Repairs

- Student e-notice board restored although, there are still some challenges, better powering mechanism and daily maintenance is required to reliably run the screen
- Daily End-user technical support to all users administrative, academic staff and students
- The downtimes contained during the two fiber damages to MTSIFA network backbone cable.

Challenges

- Inadequate financial support to College ICT activities
- Under staffed, a system administrator and 2 lab technician under College ICT administrative duties and running 8 designated computer labs.
- COVID -19 pandemic led to a lockdown, some of the ICT facilities were antagonized during the lockdown period. The college E-noticeboard got stolen during this period and other devices like UPS breakfast when are not put to use.

1.0 CEDAT Library 2021

10.1 Information Section

S/N of output	Strategic Objective	Strategic Activity	Strategic output	Strategic Indicator	Input (Job description) /Work load allocation	Reporting item	Appendices (filled data tools/forms)	Timeframe	Comments
1.	**Objective 1:** To increase and sustain library information resources by the end of 2018/2019	Processing of orders and procurement	Delivered books to the Book Banks	Number of titles and copies of books delivered to Book Banks	1. Identify and agitate for a vote on departmental budget for procurement of books 2. Initiate and follow up book procurement process 3. Receive delivered books through the procurement process 4. Identify new books by authors within department **5.** Approach authors for ossibility of donation of copies to the library	Book Bank orders not made for the year 2021 because previous book orders are still pending.		Jan-Dec 2021	
2.		Identifying and selecting other information materials	Acquired Library materials other than book bank including online databases, electronic books and journals, print materials, maps, music, multimedia	Number of titles and copies of materials acquired	1. Identify and agitate for a vote on departmental budget for procurement of journals and other materials (E-books) 2. Initiate and follow up journal and other materials procurement process 3. Receive delivered journals through the procurement process 4. Identify and receive new dissertations by students within department & other donations (E-books)	a) Received 83 undergraduate dissertations b) 9 MA dissertations c) 1 PHD thesis d) Purchased 6 (22 copies) of books for CEDAT library using college funds worth 11.5 m.	1. Updated lists of dissertations 2. Lists of books for purchase for the college given to book bank for processing. 3. Proforma invoice and receipts sent by Mallory and International Periodical publishers. 4. Delivery notes from publishers	Jan. – Dec 2021	

3.		Binding and repairing of worn out materials	Library materials bound and repaired	Number of titles and copies of materials bound and repaired	1. Developing a sorting and selection criteria 2. Identifying items for repair 3. Sorting and selecting materials for repair 4. Transferring materials to bindery	a) Not done because of shortage of funds.		Jan. – Dec 2021	
4.		Prevent loss and damage of library resource	Available Library resources in open and closed access	Number of available materials in open and closed access (Total No. of materials acquired, borrowed, overdue books, lost, lost and paid for, students/staff list of defaulters)	1. Mobilise and prepare resources (human & financial) for stocktaking 2. Develop & update work schedule & work flow for stocktaking 3. Develop and update data collection tools 4. Analyze stocktaking data	Stocktaking was done. Total no. of books on the reserve is 286 titles, 665 copies of books. Open shelves size: 2,453 titles, 8,062 copies 164,352 books were weeded.	List of books from previous stocktaking updated and bound for use in the library.l Defaulters lists updated for students and staff'. Template for weeded books updated.	4th Jan – 22nd Feb. 2021	The stocktaking supposed to be done in 2020 was done in 2021 because of COVID Break.
5.	**Strategic Objective 2:** To ensure optimal utilization of library resources by the end of 2018/2019	Process library materials & Populate databases eg Card Master, AIM, MakIR, Virtua, MaKUD, etc	Populated library databases	Number of titles and copies of library information materials entered into the library databases	1. Accessioning, stamping and registering 2. Processing (Cataloguing and classification, scanning) 3. Labeling & Shelving, other storage 4. Data entry & Uploading 5. Editing & Approval	a) 11 books and 66 added entries entered in virtua. b) All new books stamped. c) 1859 undergraduate students were given submission rights. d) 1746 dissertations edited in MAK UD. e) 44 MA students were given submission rights in MAK IR. f) 44 MA theses were edited in MAK IR.	1. Virtua statistics 2. MAKIR & MAKUD statistics 3. Submission rights register	Jan. – Dec 2021	

8.		Training library staff in emerging technologies and other library functions for optimal utilization of library resource	Knowledgeable library staff in emerging technologies and other library functions for optimal utilization of library resource	Number of Library staff trained in emerging technologies and other Library functions	1. Identify a relevant training opportunity or CPD 2. Attain appropriate recommendation/clearance 3. Attain acceptance or invitation for CPD 4. Participate in the CPD or training programme 5. Prepare a training report 6. Transfer new knowledge to other staff	a) 2 library staff participated in refresher training workshops offered in the main library from 12/4/2021-16/4/2021 for professional staff and from 19/4/2021-23/4/2021 for support staff. b) 1 new staff trained in using the online catalogue to find books for students.	Training registers Virtua statistics MakUD and MakIR statistics	Jan. – Dec 2021	
9.		Information literacy Training of library users (including LUWDs)	Knowledgeable and skilled library users optimally using library resource	Number of Library users trained in using library resources	1. Generate a list of staff and students to be trained 2. Set up a training timetable 3. Send out invitations for trainings (e-lists, social media, Notice boards) 4. Prepare and update training materials 5. Prepare training venue 6. Conduct trainings	a) 55 students trained.	1. Training register 2. Emails – Invites 3. Announcements at College freshers orientation. 4. Notice boards,	Jan. – Dec 2021	
10.		Publicizing library and information services eg exhibition, electronic lists, CAS, notice boards	Library and information services known by potential library users	Number of publicity activities	1. Update stock of library services 2. Identify potential users 3. Identify appropriate awareness medium 4. Receive user queries or requests 5. Attend to user queries, circulation and EDDS	a) 466 finalists students were offered library clearance. b) DDS,CAS, SDI. c) An email was formed to enable staff handle students queries: Cedatlib3@gmail.com.	1. Final student clearance register 2. Emails	Jan. – Dec 2021	

10.2 Summary for the library report

1. Book bank orders not made for the year 2021 because previous book bank orders are still pending.
2. New books received.

   83 undergraduate dissertations

   9 MA theses

   1 PhD thesis.

   Purchased 6 (22 copies) of books for CEDAT library using college funds worth 11.5 m.
3. Binding of books not done because of shortage of funds.
4. Stock taking was done.

   Size of reserve 286 titles (665 copies)

   Size of open shelves 2,453 titles (8,062 copies)

   164,352 books were weeded.
5. Data entry in Virtua: 11 books and 66 added entries.

   1,859 undergraduate students were given submission rights in MAK UD.

   1746 undergraduate dissertations were edited in MAK UD.

   44 MA students were given submission rights in MAK IR.

   44 MA theses were edited in MAK IR.

8. Training library staff

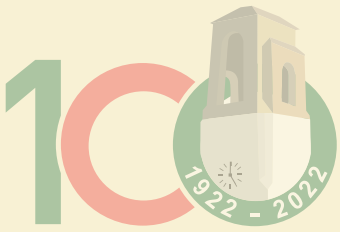
   2 library staff attended refresher training workshops organized by Makerere University library. These are Mukama Proscovia and Kyakyo Edith.

   1 new staff trained in using the online catalogue to find books for students. This was Natukunda Shafrah.
9. 55 first year students were given library user education.
10. 466 finalist students were offered library clearance

    DDS, CAS, SDI was done.

    An email was formed to enable staff handle students queries: cedatlib3@gmail.co

MAKERERE UNIVERSITY



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