



CEDAT

Newsletter

Jul—Dec 2020

Experts call for integration of Land use and transport planning for Kampala



A picture of the Old Taxi Park in Kampala (2019)

Researchers from Makerere University and officials from the Ministry of Lands, Housing and Urban Development have called on the government to integrate land use and transport planning if we are to develop the urban centres around the city.

Speaking at a public dialogue, researchers noted that there was need to decongest the city and also demarcate Kampala City boundaries. “The city is expanding yet the planning is stagnating,” Prof. Henry Alinaitwe, the Principal of the College of Engineering, Design, Art and Technology said.

Dr Wilson Kayom, an official from the Ministry of Lands, Housing and Urban Development said there was need to be concerned about the unprecedented

population growth of the Greater Kampala Metropolitan Area.

Other challenges affecting the Greater Kampala Metropolitan Area (GKMA) include the development of slum cells, congestions on the roads and building and unplanned development.

Lack of proper transport system affecting health of the population, the ecological system, and an acceptable urban environment for the residents of Kampala.

Traffic congestions has for years been a big problem in Kampala. A typical urban road in Kampala is a single carriageway, about 4 meters wide, designed as a two-way road with each side carrying traffic in opposite direction.

The city, Dr Kayom said is affected by the

unregulated taxi operations, the many Taxi parks/stages in the CBD, lack of separated walkways for pedestrians, lack of organized pedestrian crossings, Illegal parking along the main streets and Lack of enough traffic signals.

According to research, traffic jam costs Uganda over US\$800m (over sh2.8trillion) in lost GDP annually. The country also loses 10 people per day in road accidents, according the traffic report, the highest in East Africa.

The panel discussants called for an integration of politics, economics with land use and transport planning. This is because for success to happen, there must be political will.

The experts called for a mitigation of the effects of urbanization, because this has to

happen whether we like it or not.

The Mayor of Jinja, Mr Majid Batambuze, called for integrated planning of Kampala City with the neighboring cities of Mukono, Wakiso, Kira and Gayaza among others.

The experts called for drafting of the national Transport Policy which will offer holistic planning for the country.

Mr Batambuze called for creation of satellite cities in different areas such as Jinja, Gulu, Nakasongola, among others so that people do not find the need to travel to Kampala. These cities would require infrastructure development such as

schools, hospitals, roads, markets, water and airports among other social services.

The Mayor decried the resource allocation model used by the government. He said Jinja Town had industries that contribute greatly to the government tax revenue; however, the city gets only a small fraction of this money, which is not sufficient for service delivery to the people of Jinja.

Dr Ian SSenkatuka called for planned housing in the city, saying that it has to be high density and high rise. Dr SSenkatuka noted that water transport had been ignored by the planning authorities. "Uganda and her neighboring countries of Tanzania and Kenya need to plan for water

transport especially for cargo. This will reduce the load on the roads as well as decrease the cost of trade," he said.

He said there was need to work with big land owners to develop the city. These include the Buganda government, which owns big chunks of land.

Ms Geraldine Kabami, an official of Friedrich Ebert Stiftung, called on the government not only to plan for the people but rather to plan with the people. She also called for integrating of land use planning and transport planning to avoid scenarios where we build roads and later break them too put water pipes.

6th NCC Conference: Call for Papers

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he College of Engineering, Design, Art and Technology (CEDAT), Makerere University and Uganda Communications Commission (UCC) are organizing the 6th National Conference on Communications #NCC2020 to be held on 21st to the 22nd January 2021. #NCC2020 will host keynote speeches and technical paper sessions on topical issues in Uganda's Communications sector.

The NCC provides an opportunity to build capacity and strengthen the

academic and industry communities in communications particularly in the research of locally relevant solutions. The NCC provides students, researchers, developers, and practitioners with a platform to address new research challenges, share solutions and discuss issues relevant to the communications sector of Uganda.

Call for Papers

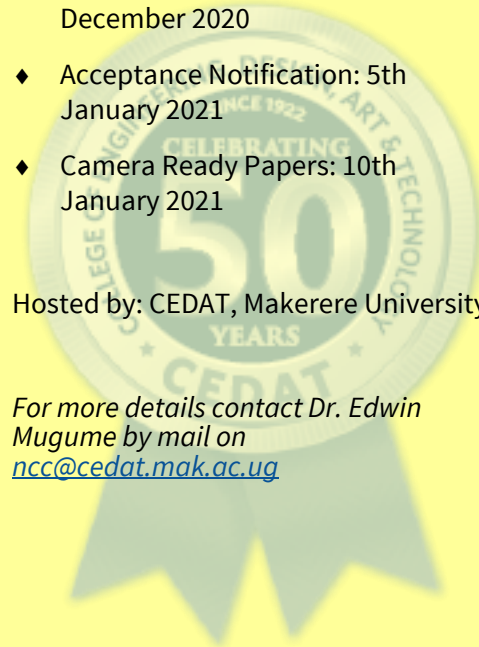
Prepare your technical papers in all relevant areas of communication engineering and ICT's. Papers should not exceed 7 pages. Submission details will be provided later.

Important Dates

- ◆ Technical Papers Due: 15th December 2020
- ◆ Acceptance Notification: 5th January 2021
- ◆ Camera Ready Papers: 10th January 2021

Hosted by: CEDAT, Makerere University

For more details contact Dr. Edwin Mugume by mail on ncc@cedat.mak.ac.ug



MAK TEAMS WIN GOLD & SILVER AT EFFICIENCY FOR ACCESS DESIGN CHALLENGE



Two teams of students from Makerere University's College of Engineering, Design, Art and Technology (CEDAT) have won Gold and Silver at the Efficiency for Access Design Challenge for their projects entitled 'Standalone solar load management system' and 'Solar energy efficient fish dryer' respectively. The Grand Final event held on Monday 29th June 2020 saw UK teams from the University College London and University of Strathclyde win Gold and Silver respectively alongside the aforementioned CEDAT teams

The team that won Gold was made up of Mr. Sibbo Derrick, Mr. Weredwong Innocent, Mr. Obeti Silvio and Mr. Mukasa Peter, all Fourth Year students of the Bachelor of Science in Electrical Engineering. The Silver award winning team was made up of Mr. Ivan Musingo, Mr. Fred Wanjala, Mr. Reagan Masembe and Mr. Evarest Ampaire, all Fourth Year students of the Bachelor of Science in Mechanical Engineering. The Bronze award was jointly won by Strathmore University (Kenya) and University of Bath (UK).

According to the press release published on the Efficiency for Access website, the Design Challenge is a global, multi-disciplinary competition that empowers teams of university students to help accelerate clean energy access. It is funded by UK aid and the IKEA Foundation.

Mr. Wanjala, a member of the Silver award winning team shared that challenge started in September 2019 with a total of 20 teams from nine universities competing. "Out of the 20, only 14 teams managed to reach the Grand Final where Mak took both gold and

silver. Funds to prototype these projects will be sent."

It is worth noting that three other teams from Makerere University made it to the Grand Final. These presented projects on; 'Design of a solar powered evaporative cooler', 'Design of a solar powered clay refrigerator' and 'Design and Implementation of a Solar Powered Smart Irrigation System'.

Please click the link below to view the full Press Release

<https://efficiencyforaccess.org/updates/efficiency-for-access-design-challenge-celebrates-university-students-promoting-clean-energy-access-in-emerging-economies>

The full reports of Mak Teams that made it to the Grand Final can be accessed by clicking the links below

- Team 001: Standalone solar load management system
- Team 002: Solar energy efficient fish dryer
- Team 004: Design of a solar powered evaporative cooler
- Team 005: Design of a solar powered clay refrigerator
- Team 011: Design and Implementation of a Solar Powered Smart Irrigation System

We congratulate the teams from CEDAT for flying Makerere University's flag high on the global stage.

Amanda Ngabirano Sworn in as Chair of the National Physical Planning Board

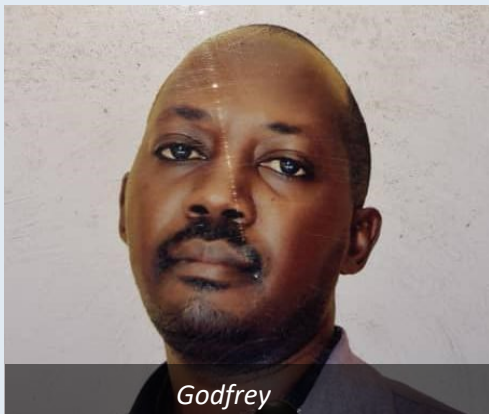
The Acting Chief Justice Alphonse Owiny-Dollo on July 14th 2020 swore in the new National Physical Planning Board (NPPB). The event was held at the High Court premises in Kampala.

The new 10-member Board is led by Makerere University's Mrs Amanda Ngabirano who was handed the instruments of power by the outgoing Chairperson.

The event was attended by the Lands Minister Honourable Betie Kamyia, State Minister for Urban Development Honourable Isaac Musumba, Minister for Local Government Honourable Raphael Magyezi among other top officials from the Judiciary and the Ministry of Lands, Housing and Urban Development.



Obituaries



On 4th December 2020, we received the sad news of the passing of Mr. Godfrey Mwesige, an Assistant Lecturer and one of the long serving members of staff in the Department of Geomatics and Land Management. He passed away in Mengo Hospital and was buried on Sunday 6th December 2020 his ancestral home in Hoi-ma. Our deepest condolences to his family, friends, colleagues and students.



On December 10th 2020, John Michael Kiryowa, a year 5 student of Architecture at CEDAT passed away in a motorcycle accident along the Kampala Northern Bypass. Our deepest condolences to his family, classmates and all staff and students in the department of Architecture and Physical planning.



On 9th December 2020, we learnt of the untimely death of our former student, Mr. Barnabas Tukamwesiga. Barnabas graduated with a Bsc. Urban and Regional Planning and was practicing privately. Condolences to his family, colleagues and to the Department of Architecture and Physical Planning.

Land Tenure System: A Challenge for Urban Development and Service Delivery in GKMA



Group photo of participants at the workshop

The opening remarks were given by Dr Lydia Mazzi Kayondo who represented Professor Moses Musinguzi, the Dean School of the Built Environment, Makerere University. Dr Lydia Mazzi Kayondo is the Chair, Department of Geomatics and Land Management, a senior lecturer and a Geographical Information System (GIS) specialist. She welcomed the participants and appreciated them for making it for the dialogue. In her opening remarks, the emphasis was put on the impact of the land tenure system in the Great Kampala Metropolitan Area (GKMA). Dr Kayondo also acknowledged her department's influence in training and churning out planners to both private and government organisations. 60% of the urban development in Kampala is informal and land tenure is one of the key factors in it. "Tenure of land

defines the relationship of how rights are accessed and how to influence development," Dr Kayondo said.

"It is important that the key stakeholders are engaged to share experience on various issues and ideas"

Ms. Amanda Ngabirano, the acting chair National Physical Planning Board and also a senior lecturer at Makerere University was the guest speaker at the public dialogue. In her presentation she referred to the land tenure system as a 'white elephant'. "We are stuck with it" she emphasized. She said that land

tenure system is the reason why planners are not delivering. Ms Ngabirano also added that urban development is not only glamorous but is about balanced growth, that is to say equity and distribution of services and amenities.

Ms Ngabirano emphasised the fact that land tenure is bigger than we can imagine. She called upon the participants to identify and open discussion with people on the land, and also to identify areas with partnerships and opportunities and be able to work with them. Other issues raised by Ms Ngabirano said funding and compensation were also affecting development. She, however, pointed out that the land tenure system may not be the only thing affecting development. She challenged participants to identify all the factors and find solutions to them.



Participants at the workshop

To further digest the theme, the panel comprised of urban development experts, specialists and researchers such as Mrs Rehema Nanvuma an urban planner currently working with the Buganda Land Board, Mr Samuel Mabala, a representative from Cities Alliance and a senior urban development expert, Ms Anitah Kusiima, a physical planner working with KCCA and Dr Fredrick Omolo Okalebo, an urban planner and researcher at Makerere University.

The issues tackled by the panellists included the following; gender concerns regarding the complex tenure system and physical planning, good land ownership practices for urban development, steps taken to improve physical planning in GKMA and the forms of tenure and its effects on service delivery in GKMA.

Ms Kusiima focused on the good practices of landownership such as transparency and access, need for legal frameworks and a better face lift following policies such as the UN Habitat i.e. the fit for purpose social tenure domain model. She called upon the Ministry of Lands to also focus on the development of rural areas as well. “We need to understand what is in it for each and everyone’s share of land at the end of it all,” she emphasised.

She also addressed the issue of differentiating between land tenure and land use, she said that without formalised tenure situation, land use planning is hindered. In Kampala only 10% of land owners have land titles, the land is developed.

There was consensus that there are other problems that needed to be considered apart from the land

tenure problem. There other factors that need to be looked at include; government’s failure to buy land and develop it, and the good will of the policy makers to have problems solved.

Mr Samuel Mabala emphasised the need for a Betterment levy as a legal framework. He said that this would make sure the owners own but at a cost. According to him, the betterment levy would be the best legal framework especially when dealing with compensation. Dr Okalebo pointed out the influence of the emergence of the real estate developers; he termed it as the ‘new craze.’ They do not care about certain issues such as narrow roads.

Kule Yosiah, a participant showed his discomfort with the discussion being focused at Kampala alone instead of the great metropolitan area. “We would be working on pieces if we focused on Kampala alone,” he noted. In his closing remarks, Dr Amin Kiggundu, the Head Department of Architecture and Physical Planning, College of Engineering, Design, Art, and Technology, Makerere University applauded the significance of the dialogue and called for more future dialogues and engagements with the stakeholders. “It is important that the key stakeholders are engaged to share experience on various issues and ideas,” he emphasised. He further noted how the college is focusing on research to address issues such as the ones continuously raised in dialogues.

MAPRONANO ACE's innovative technologies to fight COVID-19



The MAPRONANO ACE saliva diagnostic kit

Saliva diagnostic kit for detection of Covid-19 in saliva

Saliva is a comfortable and quick mass sampling option [Wang et al, 2004] with demonstrated high accuracy for COVID - 19 diagnosis. MAPRONANO ACE is developing a COVID-19 diagnostic rapid test kit for detection of the virus in saliva in partnership with Makerere University College of Health Sciences and Uganda Virus Research Institute. The test kit will be cheap, safe, and non-invasive, with rapid turnaround time for detection of active Covid-19. It will be user-friendly allowing for individual self-collection of the sample. The intervention will minimise transmission risk faced by health care practitioners and facilitate effective diagnosis, efficient contact tracing and community surveillance.

Low cost alcohol based hand sanitizers

MAPRONANO ACE in partnership with Makerere University College of Health Sciences (MakCHS) have developed low cost hand sanitizer for use in resource-

limited settings and in institutions and communities for effective hygiene and infection control. This is an alcohol hand sanitizer with 99.9% alcohol and is made from locally available materials and effective to kill the pathogens such as fungi, bacteria and viruses. The manufacture and preparation processes are done in the college of health sciences in partnership with Ryatumwa Ltd, a marketing company. The instant hand sanitizers are packaged in the following quantities (100mls, 60mls, 500mls, 1000mls/1Liters, 5 Liters and 20 Liters).

Portable mask sterilizing pod

The mask sterilization technique utilizes a pod with heat sources powered by electricity from the onboard batteries. The rechargeable Lithium ion batteries provide the DC current needed by the heating element to raise the pod temperatures up to 100 degrees Celsius enough to kill the Coronavirus.

Solar powered sanitizer booth

MAPRONANO ACE in partnership with CODEK ENGINEERING CO LTD, a private

company, have jointly developed a walk-through solar powered sanitization booth to enable instant sanitization as people walk through it. The booth is designed with entrance proximity sensors which detect a person and release fog or atomized disinfectant. The heating element has a built-in thermostat to control its temperature and prevent self-destruction under extreme heat. The booth is also built with a temperature sensor that records a person's temperature.

Re-usable self-sanitizing mask

The product was developed for medical workers in high risk environments. The mask is designed with instant self-sanitization capability and allows the user to sanitize in real time. The mask is designed with a transparent glass face to prevent sneezed or coughed sputter from directly landing onto a medical



workers' face and a built-in nose and mouth protection device to prevent breathing contaminated air. The mask has a built-in sanitizer container and spray to enable the user to sanitize their garments, hands and body frequently. The re-usable mask can be used indefinitely and is ideal for resource stressed settings.