

KAMPALA

CLIMATE

CHANGE

ACTION



# **KAMPALA CLIMATE CHANGE ACTION STRATEGY**

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# PARTNERS



# COMMITMENT

**We support** the **Kampala Climate Change Action** strategy

**We act** with our own action plan for mitigation and adaptation

**We share** our best practices, new ideas and learn from one another

**We develop** our knowledge about climate change and energy issues

**We raise awareness** in our organization about climate change and energy issues

**We assess** our water and energy consumptions, GhG emissions and air quality impacts

**We report** annually our achievements to the Stakeholders' Forum

**We will prioritize**

- Energy efficiency
- Waste and waste water
- Mobility
- Buildings and Land use
- Renewable energies
- Biodiversity
- Green Procurement and Investment
- Research and Innovation
- Communication and Participation
- Financing and Project support



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## Message from the Minister

Climate change poses a serious threat to humanity and the environment and the impacts of the global challenge are here with us. The country is experiencing longer droughts and erratic rains. This is threatening lives of millions of Ugandans.

Equally threatened are our cities and municipalities which are attracting large numbers of immigrants and expanding rapidly. As our cities and municipalities, grow they will consume massive amounts of resources such as energy, food, fuel, materials etc. At the same time they will be significant sources of emissions.

As climate change continues to impact the country side, the cities and municipalities will be strained for resources. The rapid expansion of cities is also threatening our environment through unsustainable settlement patterns, inefficient resource use and unsustainable transport modes. Our cities are therefore part of the problem and also part of the solution. Indeed Kampala city has a key role to play by taking a lead in planning, guiding and managing emissions reduction. Kampala should lead in sustainable and innovative solutions for adaptation and enhanced resilience that can be replicated in other municipalities. I therefore commend KCCA for developing the **Kampala Climate Change Action Strategy** that will help to mainstream climate change response in all the City services.

At the national level, government has committed to addressing climate change as outlined in then NDP II, the national climate change policy and strategy, second national communication and INDC. Uganda also signed the Paris Agreement joining other countries to commit to fighting climate change. The **Kampala Climate Change Action strategy** is therefore a welcome initiative that will help not only Kampala City but also Uganda to achieve its targets and make a contribution to the global phenomenon. The strategy demonstrates the benefits that can be realized when governments at all levels (national and subnational) work together on a common goal. The participatory approach in which the strategy was developed and the responsibility for action at all levels is also a commendable innovation in implementing inclusive public policies. A sustainable and resilient Kampala is key to the attainment of Uganda's aspirations in the Vision 2040 and with this climate change action plan, Kampala is positioned to lead this transformation.

I call upon all of us to play our part at individual, community, institutional, business and government levels in order to realize the ambitions we have set for ourselves and make Kampala a truly vibrant, attractive and sustainable city.

*Betty Kamya, Minister for Kampala*



## Message from the Executive Director

Today Kampala City and its Metropolitan area is home to 3.5 million people. This population is projected to grow to between 8-10 million people over the next 3 decades. The explosion in our city population, if well managed, can be turned into an economic dividend. It will have significant impacts on resources, particularly for climate and environment. Today the world is facing one of the greatest challenges of our generation - **Climate Change!**

The impacts of climate change are here with us manifesting in various hazards like floods and heat waves. Our rainfall patterns have become erratic and more intense, near surface temperatures are estimated to have increased by 1.5°C between 1950 and 2005 and are projected to further increase by between 1.5°C and 3°C by the end of the century. This situation will be compounded by the urban heat island effect as the built up area increases. The way we build, move around, prepare our food and manage our waste is inefficient, generating lots of greenhouse gas emissions which are not sustainable and affect our health. As the city expands rapidly, these hazards will become severe impacting many more city dwellers particularly the vulnerable urban poor. The costs of coping with the hazards will increase significantly threatening the city's future economic viability, livability and ability to create opportunities for our people to prosper. The message from our children at the Kampala City Festival of 2015 was loud and clear “***we don't have planet B, but we have plan B.***”

Indeed we have a chance to choose a different path and not repeat the mistakes of the past. And this is the vision of our transformation: *to make Kampala a vibrant, attractive and sustainable city*. The **Kampala Climate Change Action (KCCA)** Strategy is our flagship programme to achieve our sustainability ambition. The strategy has been developed through a consultative and participatory approach and provides a transversal framework for mainstreaming climate response in all our services. It provides shared ambition and responsibility for taking action at all levels as well as giving us the opportunity to take the lead. For Kampala, the strategy addresses three issues: **(i)** the short and long-term adaptation of the city to climate change impacts, **(ii)** charting a low emissions development path for the city and **(iii)** transforming the threat of climate change into an opportunity for Kampala residents. Our ambition is to reduce emissions by 22% from the “business as usual scenario,” reduce the future cost of adaptation and the number of vulnerable communities.

Many actions are being undertaken locally to manage waste, energy efficiency, increase renewable energy and reduce GhG emissions. This will not only help us save money but also hold the potential to create a wide range of business opportunities, health and other quality of life benefits. The actions have been designed to attract new green businesses, create local green jobs, make our businesses more competitive and help communities to thrive. The **Kampala Climate Change Action** strategy cannot be a document that sits on the shelf. KCCA is committed to act and lead by example but we cannot do it alone. I call upon all Kampala residents, businesses and communities to join us in taking action to make Kampala a great city today and for the future generations.

*Jennifer Semakula Musisi, Executive Director, KCCA*

## Message from the Lord Mayor

Our city is growing and expanding rapidly as we continue to attract and host people from within and outside the country. While this rapid expansion is a clear indication of the attractiveness and opportunities that the city offers, it is coming with significant social, economic and environmental challenges that are threatening our sustainability as a city. As the world is confronted with increased climate challenges, we will not be spared either.

Although our contribution to the cause of global warming and climate change is negligible, we are more vulnerable. And as we grow, we will require more resources like water & energy for our homes and businesses, more energy for our transport systems and industries, more food and other materials for our daily lives. This will make us more exposed to supply and price shocks.

On the other hand as we produce and consume more we will generate significant amounts of waste and emissions. This will increase our carbon footprint. But we can choose a different path. We have the opportunity to learn from the mistakes of our peers and make smarter choices at our different levels. This **Kampala Climate Change Action** Strategy gives us this opportunity. Therefore we must act now when it is not too late! Building the resilience of our communities is a key priority as we also act on those areas that increase our levels of emissions. We are all affected and we can be part of the solution by changing our daily behaviors for resource use and waste disposal, our choice of transport mode, building practices, and water and energy consumptions patterns. We all have a responsibility to take action.

I call upon my fellow leaders at all levels to support this strategy and lead by example. By acting now we will not only make Kampala a great city to live for ourselves but also for the future generations.

*Erias Lukwago, Lord Mayor, Kampala*



# KAMPALA

Kampala is situated on the edge of Lake Victoria and is home to around 1.5 million residents with a daily influx of around 2 million people for business, transit and other activities. Current high rates of urbanization have meant that Kampala, originally built on 7 hills, has expanded to cover the Greater Kampala metropolitan area of 189 square miles, extending to Entebbe, Wakiso and Mukono.

KAMPALA



Industrialization has increased over the years placing demand for land with over 50% of industry located in Kampala. Pollution and waste water control have added pressure on the local natural ecosystems causing environmental degradation and a reduction in air quality. Water drainage during heavy rains through the natural swamp filtering system has been affected by construction practices in wetlands and bad waste disposal habits. Uganda, including Kampala, is blessed with abundant natural resources but the ever increasing urban population places a burden on their protection, conservation and usage.

The rise in urban rural migration trends causes stress as people come to the city in search of economic opportunities. Many of these are disadvantaged rural populations who join

existing slum dwellers predominantly settled in risk prone areas. Economic activity is dominated by small business and trade based with very few medium and large firms.

The city acts as a distribution center for goods within the country and neighboring countries like Democratic Republic of Congo, Rwanda and South Sudan.

As a landlocked country all commodity distribution passes through the city which is a major transit hub for import and export trade both locally and regionally.

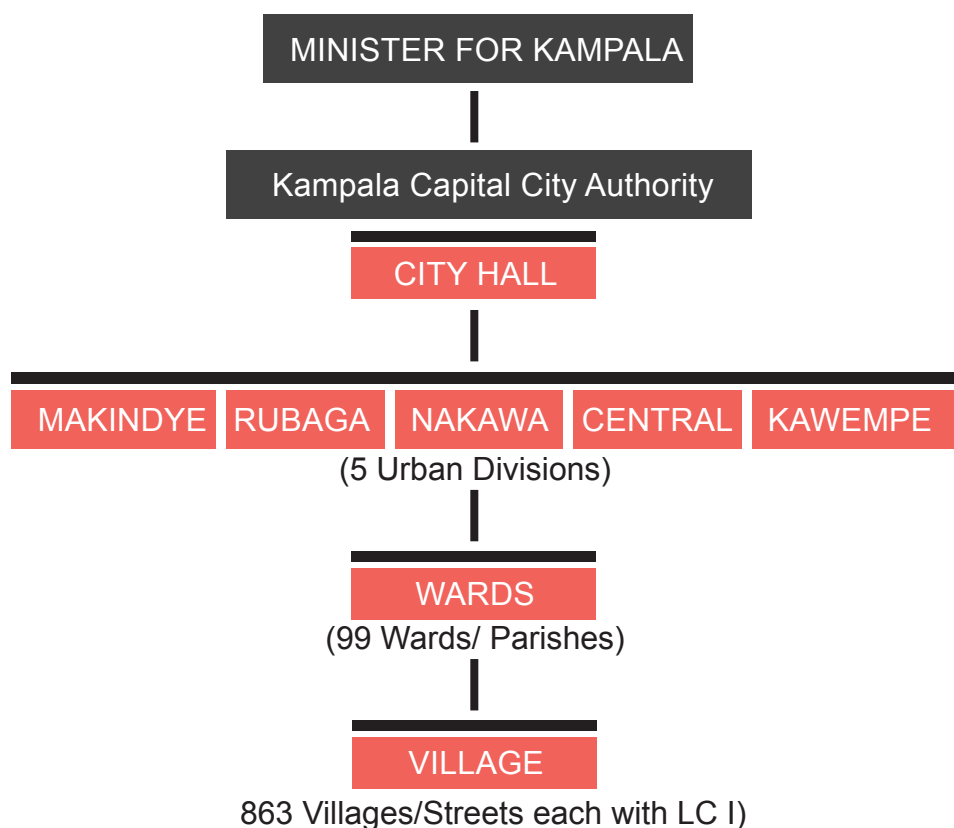
As the capital city most Government and statutory bodies have their administrative base within the city.





# WHO is responsible for Kampala?

**KCCA- Kampala Capital City Authority** has statutory responsibility for managing the city and is organized as follows:



Kampala is administered by the Kampala Capital City Authority on behalf of the central government. It is divided into five urban divisions, ninety nine wards and eight hundred and sixty three villages.

The Greater Kampala Metropolitan area includes KCCA, Entebbe municipality, parts of Wakiso and Mukono districts.

Other **Statutory Providers** of key urban services include:



**NEMA** for environmental protection and regulation



**NWSC** for distribution of water and sewage treatment







Electricity regulation, transmission and distribution





Like in all cities in the world, other **stakeholders** are involved in providing services and contributing to development in Kampala.

			
<b>PRIVATE SECTOR</b>	<b>DEVELOPMENT</b>	<b>CIVIL SOCIETY</b>	<b>ACADEMIA</b>
Businesses Service Providers Associations Finance	GoU Agencies Diplomatic Missions Development Agencies NGOs	Community Spiritual / Cultural Leaders Professional Associations Networks	Schools Universities, Colleges Training Institutions Research Centers

## WHAT is Kampala Climate Change Action strategy?

KAMPALA



The **Kampala Climate Change Action** strategy is a plan aimed at mainstreaming climate change response in all the city services in order to put the city on a low carbon development path. The Kampala Climate Change Action strategy is KCCA's flagship programme for the city to achieve its sustainability ambitions.


The strategy addresses three issues:

- the short and long-term adaptation of the city to climate change impacts
- charting a low emissions development path for the city
- transforming the threat of climate change into an opportunity for residents.

The strategy has been developed through a transversal and participatory approach involving all stakeholders. The guiding principle is that of shared responsibility which ensures that climate change is fully integrated in all development policies and service delivery at all levels whilst supporting citizens to take action.

The **Kampala Climate Change Action** Strategy is aligned to the KCCA 5 year Strategic Plan ([www.kcca.go.ug/uploads/KCCA\\_STRATEGIC\\_PLAN\\_2015-2019.pdf](http://www.kcca.go.ug/uploads/KCCA_STRATEGIC_PLAN_2015-2019.pdf)) whose vision is to transform Kampala into a vibrant, attractive and Sustainable City.

The strategy is also contributing to the goals of the Uganda Vision 2040, the National Development Plan II, the National Climate Change Policy & Strategy and the 2nd National Communication (INDC) and Uganda's commitment to the Paris Agreement.

 [climatechange@kcca.go.ug](mailto:climatechange@kcca.go.ug)

 [www.kcca.go.ug/climatechange](http://www.kcca.go.ug/climatechange)

 <http://www.kcca.go.ug/?jsp=ccvideo>  Kampala Capital City Authority - KCCA



- ▶ INTERNATIONAL:
  - ▶ Adaptation of the “United Nations Framework Convention on Climate Change” (UNFCCC)
  - ▶ Paris Agreement 2015



- ▶ REGIONAL:
  - ▶ East African Community (EAC) climate change policy
  - ▶ EAC climate change strategy and master plan



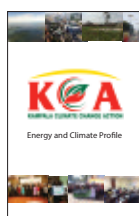
- ▶ NATIONAL:
  - ▶ Uganda signed the United Nations Framework Convention on Climate Change on 13th of June 1992 and ratified it on 8th of September 1993
  - ▶ Uganda National Adaptation Programmes of Action (2007)
  - ▶ National Climate Change Policy, 2013
  - ▶ National Strategy and Action Plan to strengthen human resources and skills to advance green, low emission and climate resilient development in Uganda 2013 - 2022
  - ▶ Uganda's Intended Nationally Determined Contribution, UNFCCC 2015



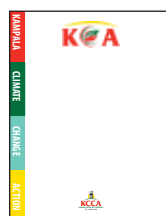
- ▶ LOCAL:
  - ▶ KCCA Strategic Plan 2014 - 2019
  - ▶ Kampala Climate Change Action Strategy

The Strategy is a 5 year roadmap outlining the current stakes, the vision to be achieved and required actions to be undertaken. The elaboration of the strategy (see map below) started in February 2015 and has already achieved some milestones like:

- ▣ engaging stakeholders
- ▣ adoption of climate smart policies
- ▣ conducting pilot actions
- ▣ Kampala Energy and Climate profile

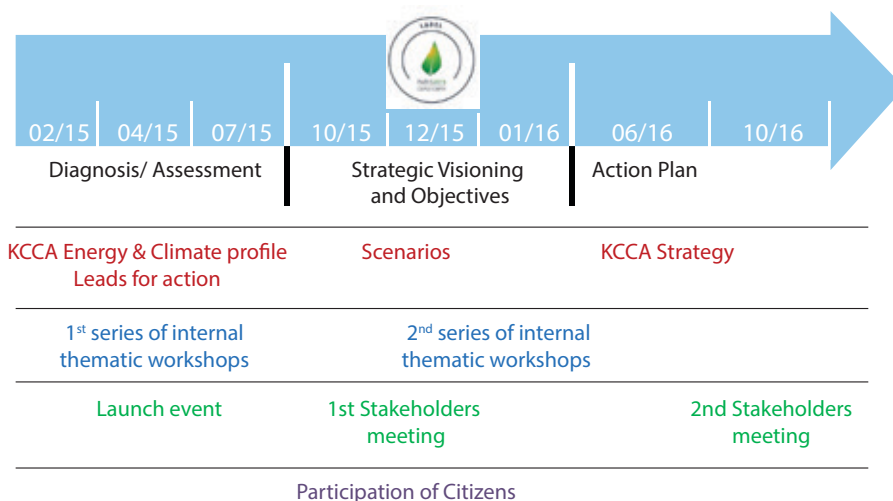


**Kampala  
Energy and  
Climate  
Profile (2015)**



**Kampala  
Climate  
Change  
Action**

Elaboration Process



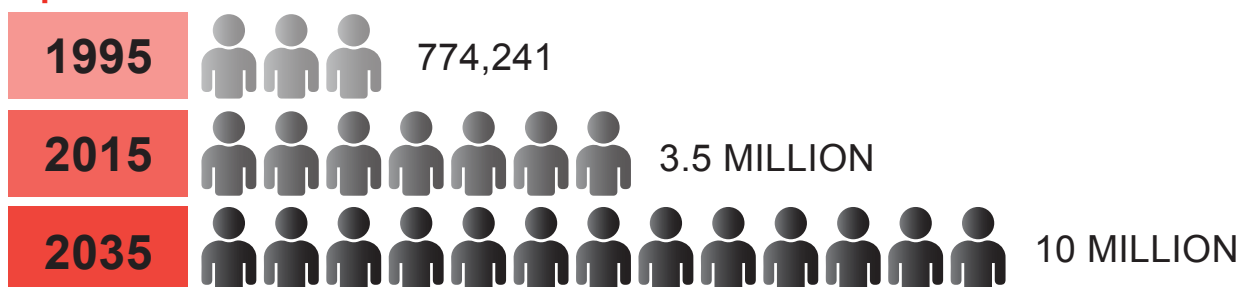


## Greater Kampala Metropolitan Area



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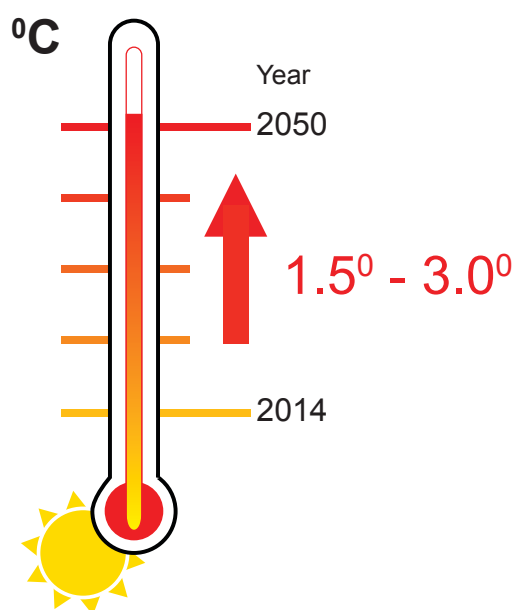
### Population GKMA



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## WHAT is the problem?

Kampala, like the rest of the world, is experiencing climate changes mostly with increased temperatures and more intense rainy seasons which are less predictable and more erratic leading to flooding and food insecurity. Recorded temperature has increased by  $1.5^{\circ}$  over the last 50 years. Although the precipitation levels have not changed significantly, the patterns have become more erratic.



Average Annual Rainfall 2000mm

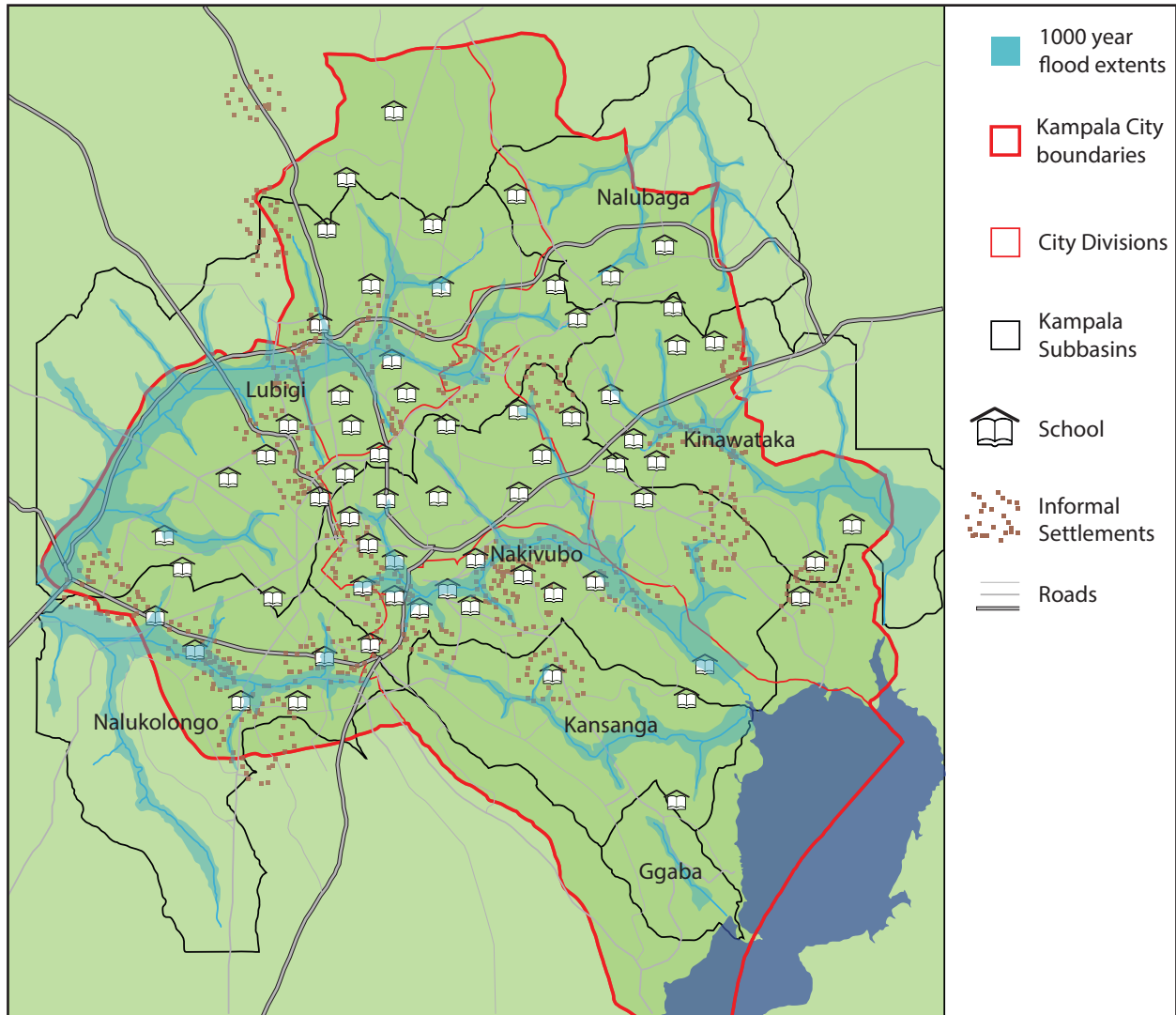
### Vulnerabilities

The consequences of climate change mean the city is more exposed to certain risks and disasters such as floods and heat hotspots as temperatures rise. Without control and protection mechanisms for land use and built environment, the problems will worsen. The city will be exposed to severe climate change shocks and stresses that will impact on its functioning and the livelihoods of residents, particularly the vulnerable urban poor.

The flood map opposite shows how services and communities will be affected by increased water surface runoff from climate change if no action is taken.

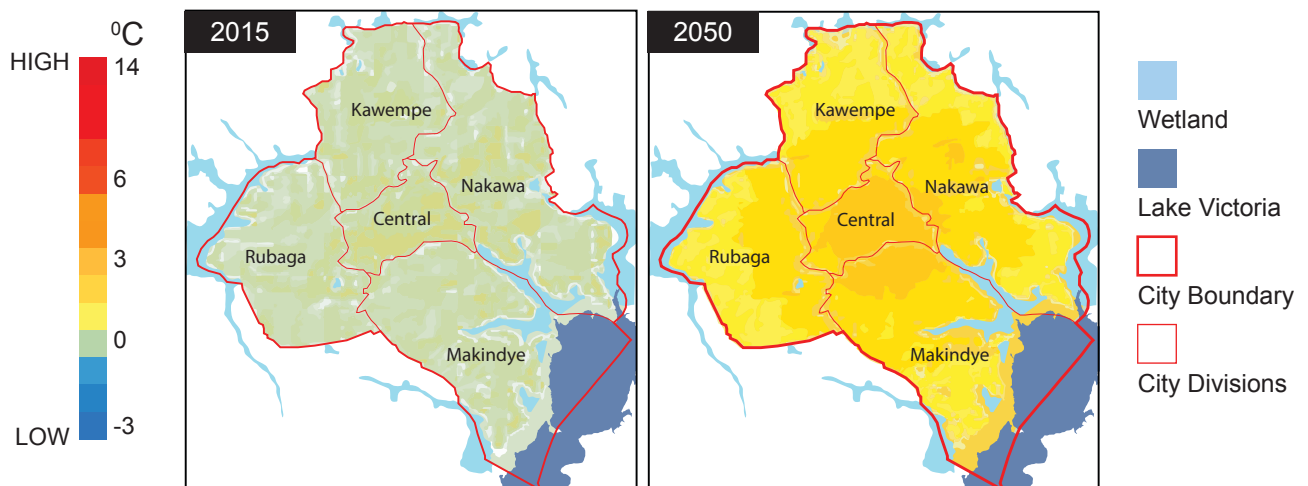
The heat map opposite shows how Kampala will be affected by increased construction and reduction of green spaces thereby increasing the temperature further.

## Kampala 1000 Year Modeled Flood Extents



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## Kampala Urban Heat Island Estimation



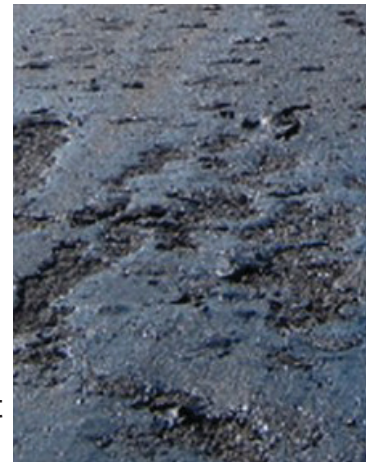


### Drivers of vulnerability to heavy rains and flooding

- Land use:
  - Housing on hill tops
  - Settlements in wetlands – leaves no room for rainwater to drain
- Insufficient, poorly designed and poorly maintained drainage channels
- Poor solid waste management practices
- Limited rainwater harvesting

### Drivers of vulnerability to heatwaves

- Heavy reliance on Lake Victoria for water supply
- Electricity supply from hydro sources located in areas outside the city which are exposed to droughts
- Poor building practices:
  - Energy inefficient buildings
  - Limited environmental consideration in building designs
  - Limited green cover – inadequate green spaces
  - Impervious surfaces that magnify urban heat island effect



### Other drivers of vulnerability

- Heavy reliance on charcoal & firewood for cooking which has significantly reduced tree cover countrywide
- Heavy reliance on imported petroleum products for transportation which is susceptible to price & supply shocks
- Reliance on grid electricity which is susceptible to damages on transmission lines resulting from severe storms
- High levels of unemployment which limits the ability of individuals and communities to cope with the impacts of climate change

### Consequences and Impacts

- Loss of property and lives
- Exposure of infrastructure, housing & livelihoods to destruction & damage
- Loss of money
- Lost opportunities

## WHAT is the Energy and GhG Profile?

An energy and GhG profile is a quantitative as well as qualitative assessment/inventory of the current energy production & consumptions and the current levels of emissions of greenhouse gasses for the city. The objective of the GhG balance is to identify the different sources of GhG emissions in order to characterize the main stakes, the trends and potential mitigation measures. Because they are related, the GhG balance includes an energy balance that is why it is common to talk about “energy and GhG” balance. The energy balance provides a snapshot of the current as well as the projected sources and uses of energy. On the other hand the GhG balance shows the level and sources of greenhouse gas emissions.

The GhG balance is the first such exercise for Kampala. Until now the GhG balance was only conducted at national level in the context of the ratification of the UNFCCC and the Paris agreement. The Kampala GhG balance exercise is a voluntary and proactive commitment by KCCA to bring local solutions to a global problem working together with the Government.

This first exercise allows KCCA to start the construction of its own inventory system consistent with the national framework. KCCA will improve year after year the elaboration process but also the precision of the assumptions and data. For the current balance, efforts have been made to find the most recent data and to take into account the existing literature. The balances will be updated on a regular basis to assess progress. The emissions were computed using the global protocol for community (GPC) scale GHG emission inventories 2014, consistent with the methodology used at the national level. The default emission factors from the IPCC tables were used. Both direct and indirect emissions were taken into account. The emissions were computed at three levels:

1. **KCCA** - administrative assets, facilities and services
2. **Kampala City** - geographical boundaries of KCCA
3. **Greater Kampala Metropolitan area** - suburbs reaching Mukono and Wakiso districts

To be effective, the **Kampala Climate Change Action** Strategy should address the whole territory of Kampala and Greater Kampala Metropolitan Area. Therefore the action plan first targets the functioning of the administration, the management of its energy/GhG emissions, the efficiency of its public buildings, car fleet and assets, public procurement etc. Then working with all stakeholders and sister administrations of Entebbe, Mukono and Wakiso address the stakes of the GKMA territory.



## WHY is Energy so important?

Energy needs affect all sectors and as demand increases this will be the major player in both systems' efficiency and use of renewable sources. Population growth which has doubled over the last 20 years indicates the need to focus attention in this area to both change human behaviour and create sustainable alternatives.

Likewise transport needs will increase yet infrastructure plans cannot support this rapid growth so alternative responses need to be sought. Waste management is already seeking to maximize efficiency by generating energy and industry regulation will require cost as well as energy efficiency. Industrial growth and development will need to adopt renewable energies to meet the demands. Green energy incentives need to be developed to promote green investment.

### The Energy and GhG balance of KCCA

KCCA represents only 0.28% of the GhG emitted in Kampala and 0.39% of the energy consumed in Kampala which is very low compared to other stakeholders living and working in the city. The GhG emissions per capita reach 2.4tCO<sub>2</sub>e/resident in Kampala and 1.75tCO<sub>2</sub>e/resident at Greater Kampala level, compared to 1.4tCO<sub>2</sub>e/resident at national level - meaning that the city and metropolitan area are the main contributors.

The results present the energy productions, consumptions and GhG emissions associated with the functioning and activities of KCCA. The global volume of GhG emissions for KCCA increased by 9% between 2012 and 2014. It is characterized by a very high proportion of GhG emissions from fuel consumption by the car fleet which represents about 92% of the total energy consumed (50% of fuel consumption is related to waste collection & 24% to road construction activities). The emissions associated with energy consumed by the buildings and street lighting is low thanks to the energy efficiency measures being undertaken by KCCA and use of photovoltaic energy for street lighting. The low use of air conditioning by KCCA has a positive impact on the balance. This is due to the preference by KCCA to use alternative ways such as natural ventilation, renovation and construction of buildings following standards that avoid systematizing AC. For the coming years it is recommended to keep on that path and to formalize this approach in a specific standard guideline for all KCCA buildings.

It is important to note that a significant volume of GhG emissions on the territory is induced by the decisions taken by KCCA for example in the fields of physical planning, management of public transport, mobility planning or waste management. Addressing these services would therefore help to significantly reduce the emissions of the territory.

## Energy mix of KCCA



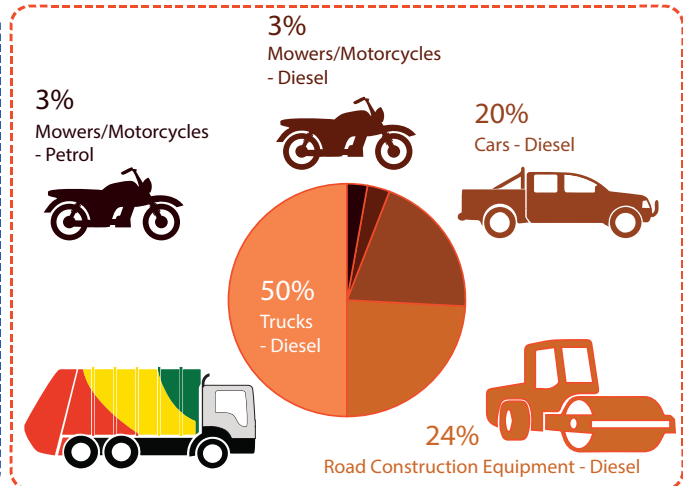
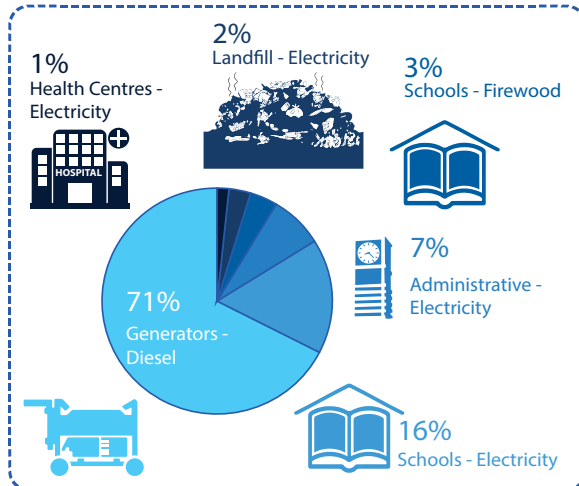
Firewood  
3%

Electricity from the grid  
25%

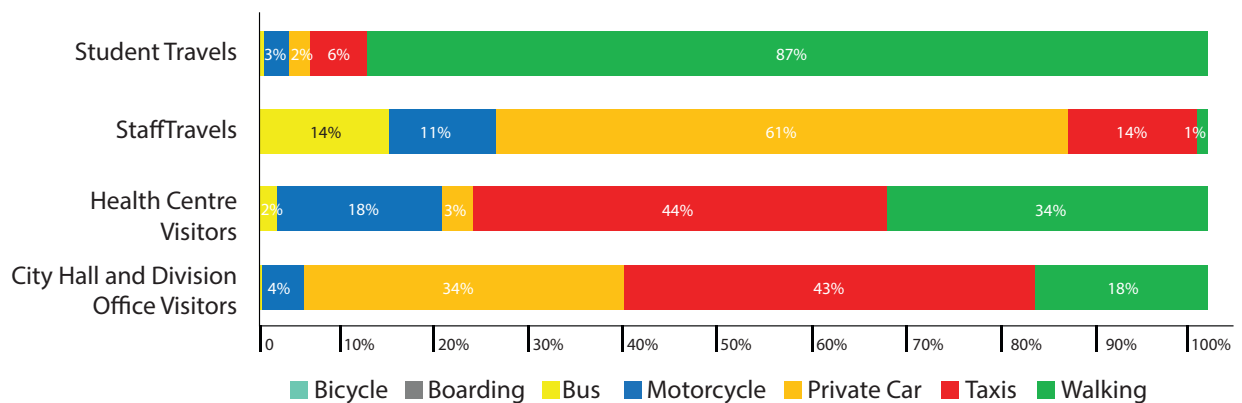
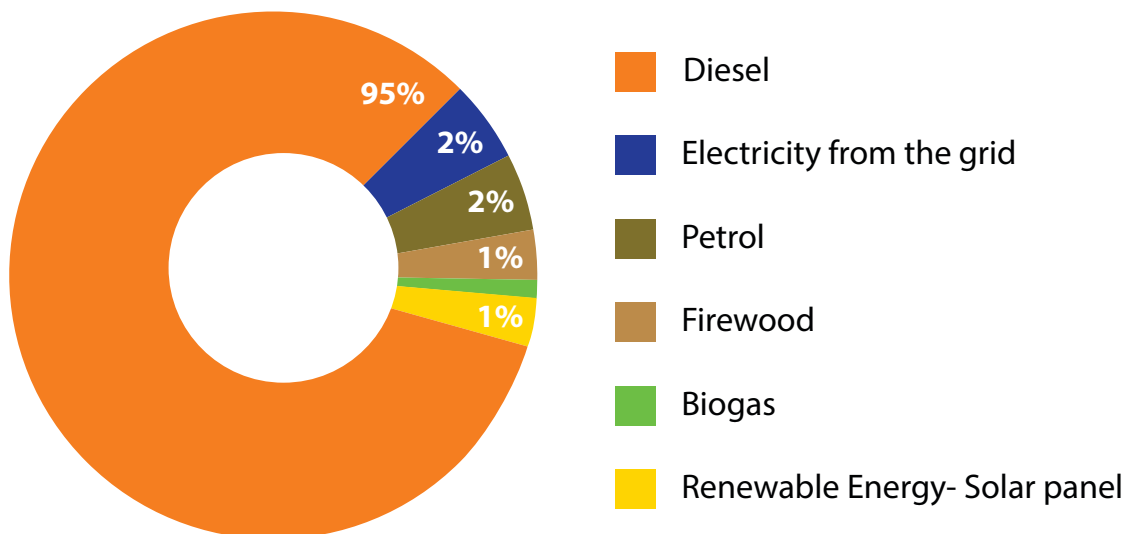
Gasoil  
71%

Buildings and Street Lighting  
8% of energy consumption

Fleet of the Authority  
92% of energy consumption



## Sources of Current Energy Use

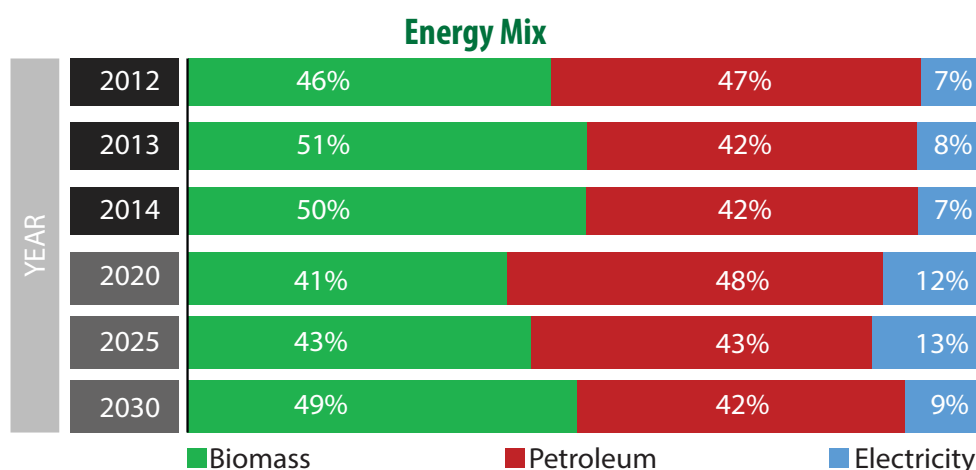


## Energy and GHG balances for Kampala & Greater Kampala Metropolitan Area

The administration of Kampala is under KCCA. It is composed of 5 divisions with a geographical area of 196km<sup>2</sup> and a population of 1.516 million inhabitants -2014 census. The number of households is 418,787 and average household size is 3.48 persons. The population growth rate is 2% per annum. The greater Kampala metropolitan area is composed of Kampala city, Entebbe municipality and some areas curved out of Mukono and Wakiso Districts. The GKMA has area coverage of 941.2km<sup>2</sup> with an estimated population of 3.23 million inhabitants (2014 census). The number of households is 835,422 with a household size of 3.48 persons. The population growth rate is 10% and it is estimated that about 70% of the national GDP is generated within GKMA.

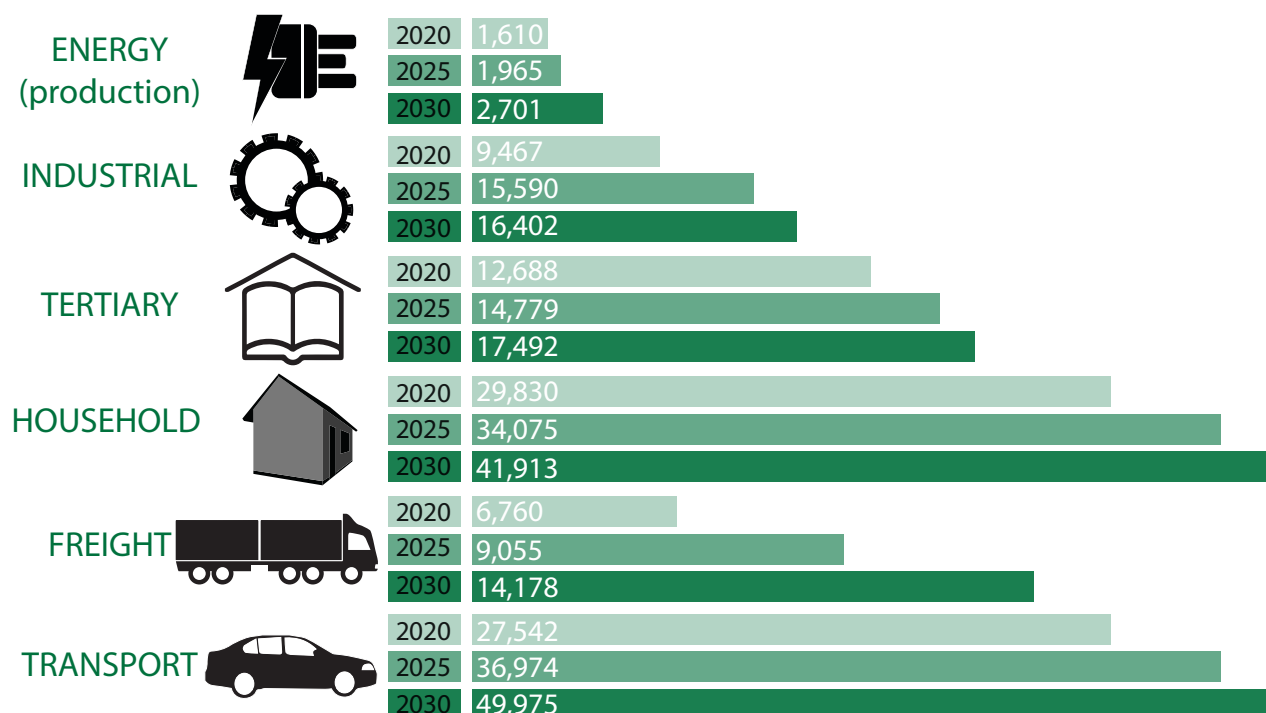
Most modern energy such as petroleum and electricity is consumed in this region, consequently emissions concentration will increase substantially. The main forms of energy used in the GKMA are biomass (charcoal & wood fuel), petroleum products (gasoline, diesel, paraffin, LPG & aviation fuel) and electricity. It is estimated that about 58% of electricity is supplied to this region and about 65% of the vehicles are within GKMA. Biomass is a very important source of energy in GKMA for household cooking; it contributes to 50% of the energy mix. Petroleum and electricity contribute to 42% and 8% of the energy mix.

The main supply sources of biomass and electricity are outside Kampala region. Charcoal is mostly supplied from western, central and northern parts of the country. Hydropower is the dominant source of electricity (90.5%) supplemented with cogeneration from sugar factories (Kinyara & Kakira, 6.7%) and thermal power plants (2.8%). Significant investment is currently underway by the Government of Uganda in Karuma (600MW), Isimba (183MW) and other small mini-hydro stations. GKMA will still be the dominant user of modern energy in foreseeable future with biomass remaining an important component in the energy mix.





## Projected Energy Demands in TJ (2020 to 2030)



## Emissions in GKMA

The emissions are categorized into 3 scopes:

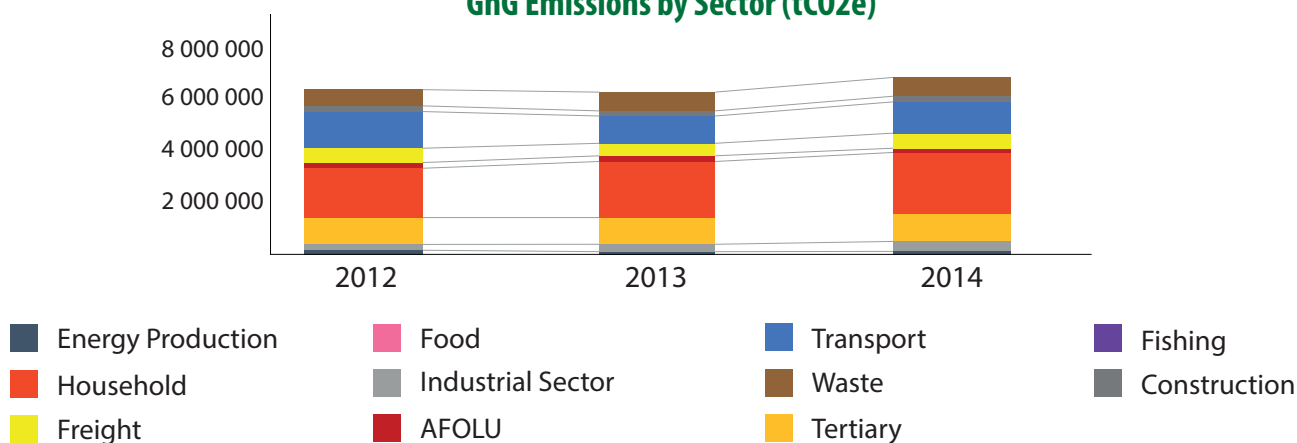
**Scope 1** covers emissions that occur within the territorial boundary of the GKMA.

It includes both mobile and stationary combustions in all sectors.

**Scope 2** covers indirect emissions related to energy that occur outside of the city boundary as a result of the activities that occur within the boundary eg: power generation from Electro Maxx in Tororo.

**Scope 3** covers any other indirect emissions such as emissions from charcoal and cement production. The emissions in GKMA will increase due to increase in population and industrial development. Total emissions increased from 6.5 million tonnes in 2012 to 6.9 million tonnes in 2014, about 6.4% in two years.

## GhG Emissions by Sector (tCO<sub>2</sub>e)





Current sources of green house gas emissions in and around Kampala

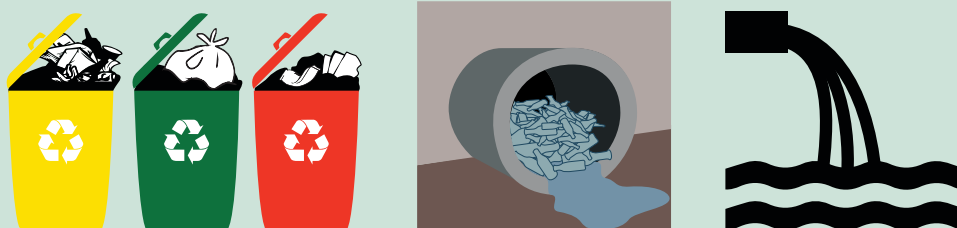
## ENERGY

The city's energy supply is dominated by biomass and hydroelectricity for cooking, lighting and industry and fossil oil for transportation. Emissions associated with electricity production are small as over 90% of the electricity is supplied by hydroelectricity. The main source of energy for household cooking is biomass (firewood & charcoal) which are high emitters of GhG but also of particles which seriously affect public health. The use of oil for transportation (diesel) produces the same concerns.



## WASTE

Management of the volume of waste and poor disposal practices.



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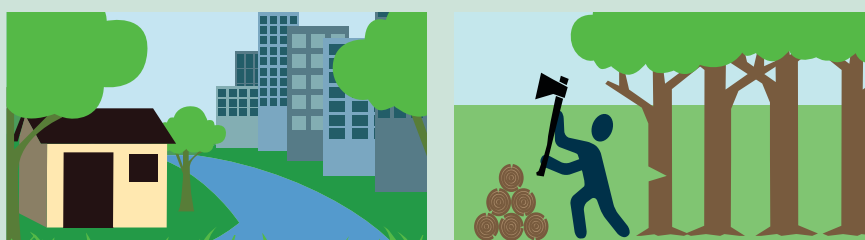
## MOBILITY

Use of old vehicles, small omnibuses, congestion and heavy reliance on imported fossil fuels.



## LAND USE

Lack of integrated detailed neighborhood plans, poor construction practices, energy inefficient buildings, low use of renewables, few green spaces, environmental degradation.



## WHY is it important to do something?

For Kampala, it is estimated that the cost of adaptation to climate change will increase significantly from about US\$ 7.3 million in 2013 to between US\$ 33 – 102 million by 2050 (CDKN). This money can be saved by taking action now:

- **Adaptation** - reduce impacts/ losses/ vulnerability and enhance resilience of communities and key infrastructure (like roads, drainages, electricity supply network), reduce the city's vulnerability to charcoal, fuel, food and water supply shocks, energy security/ renewable energy.
- **Mitigation** - avoid causes by reducing emissions from major contributing sectors
- **Opportunities** from challenges by saving resources, material re-use/ recycling, improved energy efficiency, investing in the green economy and creating green jobs.

### Projected emissions

In the business as usual scenario, emissions at GKMA level are projected to increase from 6.9 million tons in 2014 to 9.1 million tons CO<sub>2</sub> eq. in 2020 and 14.6 million in 2030. The overall emissions will increase by 55% from 2020 - 2030. The main contributing sectors include transport, household, freight, waste, tertiary and industrial sectors.

### Mitigation options

The best option is to start with energy efficiency in all sectors.

- **Energy cook stoves in institutions and households estimated to reduce energy onsumption by 20-40%**
- **Introduction of alternative cook fuels like briquettes**
- **Improvement in road infrastructure coupled with good driving practices**
- **Restrictions on importation and use of second hand vehicles estimated to reduce energy consumption by 25-30%**
- **Fuel switching to low carbon intensity fuels at households in the long-term**
- **Air quality monitoring system**
- **Improve accessibility, connectivity and transit option in the city**

As biomass will still remain an important source of fuel, there is opportunity to promote forestation and afforestation to supply biomass to the city. In the transport sector fuel switching to blended fuel is feasible. It will reduce gasoline consumption by 5-20% depending on availability of ethanol. The use of biodiesel may be considered for the medium to long term. The use of mass transit systems such as BRT and light rail will also reduce fuel consumption substantially. The government is investing heavily in road and energy infrastructure and the use of thermal power will be limited. There are possibilities of generating energy from waste and solar energy on a large scale with projected capacity of over 10MW.

## Traffic congestion and journey times



Time spent stuck in traffic will increase as road infrastructure fails to meet the demand from more cars. This will intensify the volume of particles emitted in the city affecting living and working conditions including schools and public health centres.

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## Waste volume and management



Due to the increasing volume of waste the city will require more resources to transport waste to disposal sites. This will involve additional GhG from transportation and increased waste, further impacting traffic congestion and land use designation for landfill sites.

# CHANGE

## HOW do we envision the change we need?

Our ambition is to reduce our emissions by 22% on the **business as usual** scenario. To achieve this ambition we will focus on a paradigm shift in key sectors including transport, energy, waste, built environment and cross-sectoral pillars of communication, participation, governance, urban planning and resilience.

### Adaptation

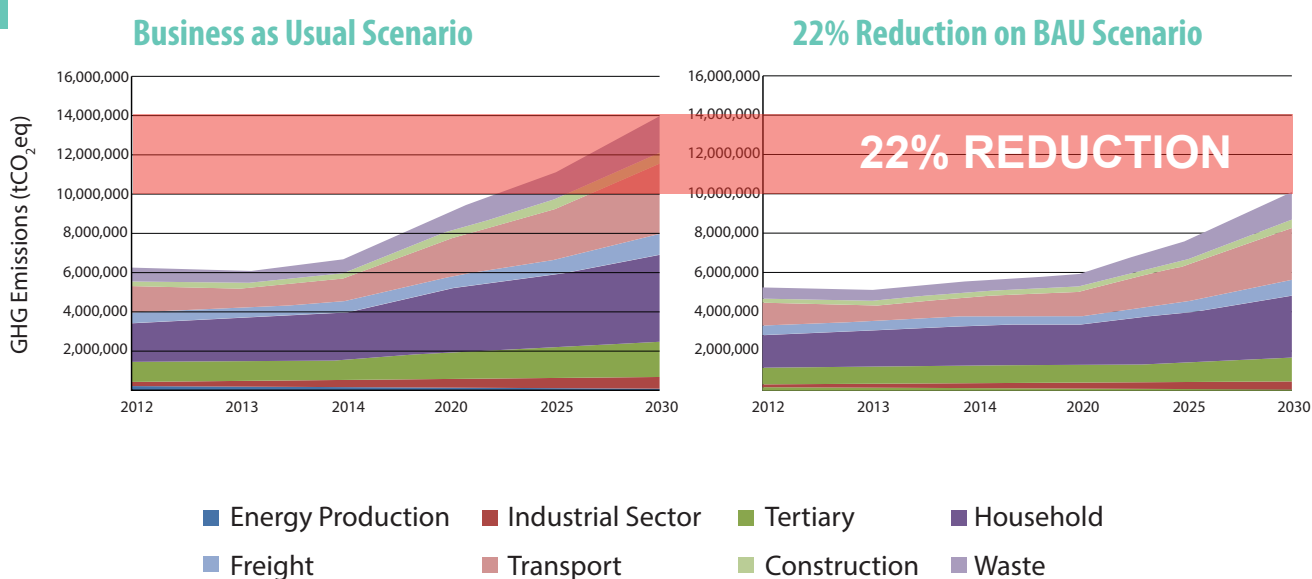
- Reduce the number of people exposed to climate change impacts
- Reduce losses resulting from climate change related hazards
- Well planned and integrated neighborhoods
- Reduced damage to public infrastructure and limited interruptions to city operations
- Revitalized ecosystems and public spaces

### Energy

- 10 % of energy demand met from local production (within the territory)
- 20 % of cooking energy generated from renewable alternatives to charcoal

### Emissions

Reduce by 22% on the business as usual scenario





## HOW will change be put into practice?

The Kampala Climate Change Action strategy is guided by core values which are in line with KCCA's Strategic Plan and include:



### Responsible sustainable development

For environmental and economic harmony



### Participation and shared responsibility

Together we build a shared value of equal responsibility and a socially inclusive process



### Integrated approach

Mainstreaming climate change into everyday life functions for desired behaviour change



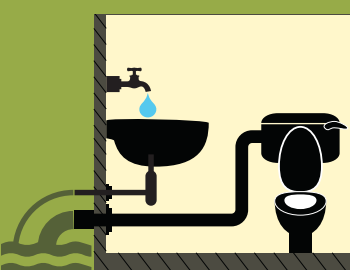



Drainage clearing

### STRATEGIES for CHANGE

- ▣ Being an example as a Capital City
- ▣ Communication with and engaging local stakeholders to participate
- ▣ Landscaping a more climate resilient and low carbon Kampala
- ▣ Developing smart utilities and community services
- ▣ Supporting the green economy

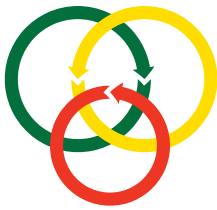
CHANGE

SECTOR	VISION	TARGET	IMPACT
ENERGY	 <p><b>INCREASE RENEWABLE ENERGY USE</b></p>	<ul style="list-style-type: none"> <li>• Number of EE Audits conducted per year</li> <li>• Improved cook stoves distributed to and purchased by institutions &amp; households</li> <li>• Amount saved as a result of energy audits conducted</li> <li>• 50 Megawatts of renewable energy produced on the territory (solar, waste to energy)</li> <li>• 50% of charcoal (2015 baseline) replaced with alternative cook fuel (briquettes, biogas)</li> <li>• 15 % of the energy mix from renewables</li> </ul>	<ul style="list-style-type: none"> <li>• Household and institutional savings</li> <li>• Increase in green jobs</li> <li>• Reduction in street lighting costs</li> <li>• Improved air quality</li> <li>• Energy efficiency buildings</li> </ul>
MOBILITY	 <p> <b>REDUCE CONGESTION &amp; TRAVEL TIMES</b>  <b>INCREASE SUSTAINABLE TRANSPORT SYSTEMS</b> </p>	<ul style="list-style-type: none"> <li>• 50% of motorists using mass public transport (Buses &amp; Train)</li> <li>• 20% reduction in average hours of travel</li> <li>• 50% of city roads tarmacked</li> <li>• 25 km of NMT (cycle/Pedestrian) lane length constructed</li> <li>• 15% of new vehicle registrations (Institutional &amp; public transport fleet) using alternative fuel (compressed natural gas, biofuels, all electric)</li> <li>• Alternative fuel dispensing/charging stations established</li> <li>• At least 200,000 motorists using car sharing system annually</li> <li>• 40% of current 14-seater taxis replaced by buses</li> </ul>	<ul style="list-style-type: none"> <li>• Household savings</li> <li>• Increase in green jobs</li> <li>• Reduced GhG emissions</li> <li>• Improved air quality</li> <li>• Traffic de-congestion</li> </ul>
WASTE + WASTE WATER	 <p><b>INCREASE 3RS</b></p>	<ul style="list-style-type: none"> <li>• 30% of waste recycled</li> <li>• 60% of newly approved buildings with water harvesting units/systems installed</li> <li>• 5 megawatts of electricity generated/supplied from methane capture</li> <li>• Biogas systems installed</li> </ul>	<ul style="list-style-type: none"> <li>• Green economy job growth</li> <li>• Behaviour change</li> <li>• Improved drainage flows</li> <li>• Waste reduction in households &amp; institutions</li> <li>• Improved health and wellbeing</li> </ul>
LAND USE + BUILT ENVIRONMENT	 <p><b>IMPROVED CONSTRUCTION PRACTICES</b></p>	<ul style="list-style-type: none"> <li>• Integrated green (circular economy) neighborhoods planned/ developed</li> <li>• 300,000 people supported to reduce exposure to climate hazards</li> <li>• 80% of new public investments classified as climate smart</li> <li>• New buildings certified as green buildings</li> <li>• Water harvesting units installed</li> <li>• 500,000 new trees grown (street, park and household)</li> <li>• 30km of drainage channels constructed/improved</li> <li>• Acres of wetlands protected and or restored</li> </ul>	<ul style="list-style-type: none"> <li>• More eco friendly buildings</li> <li>• Increased green economy</li> <li>• Carbon sequestration</li> <li>• Climate resilient infrastructure</li> <li>• Reduce disaster exposure &amp; lower costs for risk/disaster management</li> <li>• Improved community practices</li> <li>• Increased green spaces and trees in households for improved health &amp; income</li> </ul>



## HOW will this be done?

We will achieve this through the following approaches:



### Creating enabling environments

- Policy • Regulations • Incentives
- Community Development Programmes



### Leading by example

- Management of our assets, buildings, fleet, facilities
- Climate friendly approaches to service provision
- Role modeling actions
- Demonstration of best practices and eco standards



### Partnerships

- Public-private • Government agencies • Community
- Development partners • Academic and other institutions



### Communication, participation and support

- Promotion of best practice
- Information and knowledge sharing
- Awareness raising management • Dialogues
- Supporting and encouraging actions by stakeholders and community-led initiatives







### Innovation and technology

- Pilot initiatives using appropriate and alternative technologies
- Research and development
- Staff intranet

## WHO is responsible for making the required changes?

As KCCA we will lead by example by addressing the stakes in our scope of reach.

KCCA represents 0.28% of the GhG emitted in Kampala and KCCA represents 0.39% of the energy consumed in Kampala. KCCA buildings and facilities represent a low share of the total emissions of the territory. The decisions taken by KCCA in physical planning, mobility, waste management, education and economy can significantly influence the emissions of the territory. KCCA cannot achieve the ambitions alone. Therefore besides KCCA, everyone has a duty to get involved as all are affected and able to contribute to the solutions as individuals, households, communities and institutions.

RESPONSIBILITY			
STAKEHOLDERS	WHO Responsibility Level	WHAT Behaviour Change	HOW Daily Practices
	INDIVIDUAL Workers Families	<ul style="list-style-type: none"> <li>• Transport use</li> <li>• Cooking</li> <li>• Reduce waste</li> <li>• Be role models at home and work</li> </ul>	<ul style="list-style-type: none"> <li>• Shared or public means</li> <li>• Alternative cook fuel</li> <li>• Separate &amp; recycle waste</li> </ul>
	INSTITUTIONAL Organizations Government Schools Hospitals Development partners	<ul style="list-style-type: none"> <li>• Provide facilities</li> <li>• Create awareness</li> <li>• Lead by example</li> </ul>	<ul style="list-style-type: none"> <li>• Energy efficiency</li> <li>• Cooking with renewable fuel</li> <li>• Waste reduction</li> </ul>
	CORPORATE Business Green market creation	<ul style="list-style-type: none"> <li>• Self-regulation</li> <li>• Provide facilities</li> <li>• Create awareness</li> <li>• Lead by example</li> </ul>	<ul style="list-style-type: none"> <li>• Energy efficiency</li> <li>• Cooking with renewable fuel</li> <li>• Waste reduction</li> <li>• Compliance to eco standards</li> <li>• Clean production systems</li> <li>• Green investment</li> </ul>
	COMMUNITY NGOs CBOS Leaders Groups	<ul style="list-style-type: none"> <li>• Promote/ model best practices</li> <li>• Advocacy value chains</li> <li>• Self-regulation</li> </ul>	<ul style="list-style-type: none"> <li>• Raising awareness</li> <li>• Role modeling actions,</li> <li>• Information dissemination</li> <li>• Networks and partnerships</li> <li>• Lobbying for change champions</li> </ul>

## HOW shall we measure progress?



### PARTICIPATION

- ▣ Number of stakeholders reporting on their action
- ▣ Diversity of outreach within stakeholders, including multiple sector levels



### PRACTICE CHANGES

- ▣ Internal and external surveys to assess improved actions
- ▣ Numbers of testimonies by staff and stakeholders



### INFORMATION SHARING

- ▣ Number of platforms used (social media, radio, TV, print)
- ▣ Number of people reached (sectors, communities, specific stakeholders)



### DOCUMENTATION

- ▣ Database categorized by stakeholders and sector actions
- ▣ Tools for activity/ event reporting



### PILOT REPLICATION

- ▣ Uptake of pilot projects by KCCA and other stakeholders
- ▣ Sharing and documentation of best practices



### TECHNOLOGY TRANSFER AND INNOVATION

- ▣ Sharing of lessons learned through project initiatives
- ▣ Number of innovative ideas and appropriate technology solutions developed and implemented
- ▣ Number of incubation networks and centres supported or active in climate smart solutions

# ACTION

## WHEN will actions begin?

KCCA has already begun many actions and the strategy has helped to identify specific ones in each sector which will achieve the targets of the long term vision. Several are on-going and require external support whilst others involve key stakeholders in doing daily actions. The tables below offer guided priority actions with proposed time frames.

(OG = Ongoing, ST = Short Term, MT = Medium Term, LT = Long Term)

AP = KCCA Action Plan Data Sheet)



### WASTE

Specific Action	Time	How	Who	AP
Promotion of segregation at source, re-use and composting: internal, public and community	OG		KCCA, schools, media houses, households	W10, S7
Environmental and social safeguards policy	ST		KCCA	PP14, PP15
Training and sensitization in 3Rs practice: internal and external	OG		KCCA, Communities	W1
Updating and formalization of Waste Management strategy	OG		KCCA	W0, W4
Assessment of existing recycling capacities including electronic/ industrial waste for job creation	ST		KCCA, Private sector	W3
Investment potential mapping for waste/recycling sector	MT		KCCA, Private sector	W0, W3
Increase enforcement for non-compliance	OG		KCCA, NWSC, NEMA	W4



ACTION



## ENERGY

Specific Action	Time	How	Who	AP
Conversion to all solar street lighting	ST		KCCA	EX8
Create Energy Master Plan: <ul style="list-style-type: none"> <li>• Energy inventory and MIS</li> <li>• Make Department of Energy</li> <li>• Efficiency measures/ equipment and audits</li> <li>• Public assets management policy including standards/renovations</li> <li>• GHG tracking system</li> </ul>	ST		KCCA Ministry of Energy Utility providers Development partners Schools Institutions	EX6, E0, E6, PP7
Renewable energy survey	ST		KCCA	E6,E0
Pilot replication in schools/ markets	MT		KCCA	S4, S2, E4, S8, S3, E5
Financing mechanisms for energy efficiency/ renewable energy/ feed in tariff opportunities	MT		KCCA, GoU, Banks, Development partners, Institutions	E0
Install renewable energy on public buildings	MT		KCCA, Partners	S4, EX8
Promotion of uptake of renewable alternative cooking fuels	OG		KCCA, schools, media houses, households	E4, E5, S3, E1, S0
Survey on charcoal and firewood use by households	ST		UNDP	E6
Clean energy generation investment incentives	MT		KCCA, financial sector, GoU	W3, W0
Waste to energy project from landfills, industrial waste, waste water, sewage	MT		KCCA p/p, Development partners, NWSC	W11, E2, E3
Audit of energy distribution transport system for improve efficiency	MT		KCCA, UMEME, Ministry of Energy	PP7, E0



## ACTION



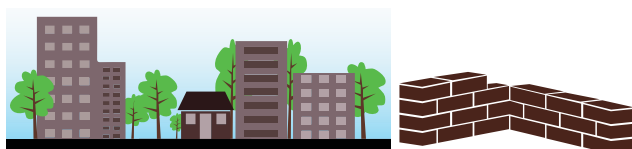
## MOBILITY

Specific Action	Time	How	Who	AP
Developing public transport mass systems (BRT/NMT/light rail/cable)	OG		KCCA, Ministry of Works	M3, M4, M5, M6, M10
Integrated Urban Mobility Plan	ST - LT		KCCA, Works, Private Sector	M0, M12, S6
Standard introduction for environmental performance for motor vehicles	ST		KCCA, GoU, Ministry of Works	M9, M11
Develop freight and logistics strategy	MT		KCCA, Ministry of Works	M2
Congestion and pollution control measures and charges	ST		KCCA, Ministry of Works	M11
Encourage businesses and institutions to adopt eco mobility practices	MT		KCCA, SH	M1, S6
Promote car sharing/pooling internal and external	ST		KCCA SH, Schools	M7
Street naming and city map updating	ST		KCCA	M8
Car fleet environmental performance criteria	MT		KCCA	EX2
Introduction of fleet conversion to mixed fuels	MT		KCCA	EX0
Parking policy with shared transport incentives	ST		KCCA	M9
Training in eco driving standards	ST		KCCA	M7

## ACTION







## LAND USE/ BUILT ENVIRONMENT

Specific Action	Time	How	Who	AP
Integration of Land use (including commercial development) into planning and mobility	OG		KCCA	PP2, PP4, PP6
Zero carbon and positive energy pilot in neighbourhood/village	OG		KCCA, Community	PP13
Data management and integrated GIS system with vulnerability and climate change information	OG		KCCA	PP5, PP9, PP6, COM5, PP17, PP18
Landscape policy	ST		KCCA	PP3
Integration of energy efficiency and renewable energy into building standards with eco guidelines for construction/ renovation / waste and waste water and air quality management	ST		KCCA	PP7
Advisory information services to raise voluntary compliance	ST		KCCA, Architects developers	PP8, PP9
Coordination with national agencies for construction regulatory framework	ST		KCCA, GoU	PP14
Promotion of eco construction practices	OG		KCCA, Communities	PP11, EX7
Integration of climate change, energy efficiency and renewables into environmental impact assessments	ST		KCCA, NEMA	PP15
Wetlands conservation, protection and restoration	MT		KCC, Ministrtr of Water, NWSC, NEMA	PP21, PP18
Construction and widening of drainage channels	OG		KCCA, Development partners	PP16
Creation of ecoparks to promote eco tourism and green spaces	MT		KCCA, Ministry of Tourism	PP21, GE3
Conduct tree audit to plan for tree planting and creation of urban sinks	MT		KCCA, GoU, MAK	PP20



ACTION



## ECO PRACTISE (Crosscutting Issues)

Specific Action	Time	How	Who	AP
Eco label rating system for schools / retail/ industry/ hospitality	MT		KCCA	S5, COM6, GE5
Green public procurement	MT		KCCA	EX4
Climate Smart services via technology platforms (online payments/ teleconferencing/ intranet)	OG		KCCA	COM4, GE8
Environmental best practices for public events (internal and external)	OG		KCCA Stakeholders	COM2, EX15
Adoption of Environmental Clubs/ officers/ ambassadors/champions for best practice promotion	OG		KCCA schools, businesses, institutions, households, communities	S9
Assessment of green enterprise potential and eco-training availability	MT		KCCA, Institutions, Private sector	GE1, GE6, GE7
Integration of eco skills into Employment Services Bureau	ST		KCCA	GE2, GE5, GE6, GE7, E1, EX1, EX2, EX10
Public/private sector showcasing of eco practices via exhibitions/ info clinics/ demonstrations	ST		KCCA, SH	COM7, GE2
Air quality monitoring system development	MT		KCCA schools, industry, partners, institutions	M11, COM5
Capital Infrastructure Programme climate smart policy	OG		KCCA	GE8, EX5
Go Green including tree planting and creation of green/waste ambassadors	OG		KCCA, Communities	PP19, PP20
Promotion of stakeholders to CC actions via sensitization and dialogue	OG		KCCA Stakeholders	EX15, EX16, PP12, EX9, EX13, EX14
Communication and participation plan integrated into KCCA Work plans for CC actions	OG		KCCA	EX1, EX3, EX10, EX11, PP1, COM1, COM6
Supporting and promoting initiatives between stakeholders and communities	OG		KCCA, MAK students	PP12

### ACTION







Go-Green Initiative: Planting trees

## WHAT can I do to contribute?

In order to achieve the effective implementation of so many actions by multiple agencies and stakeholders it is essential that certain mechanisms are put in place to ensure smooth operations and maximize coordination. KCCA is already addressing these and therefore requires commitment from partners and stakeholders for successful impact. This means coordination for all stakeholder efforts to promote:



### Policy synergy

Policies to be coordinated at Regional, National, City and Community level



### Green investment

Financial institutions lead with green capital funds



### Project support

Development partners prioritize climate smart initiatives



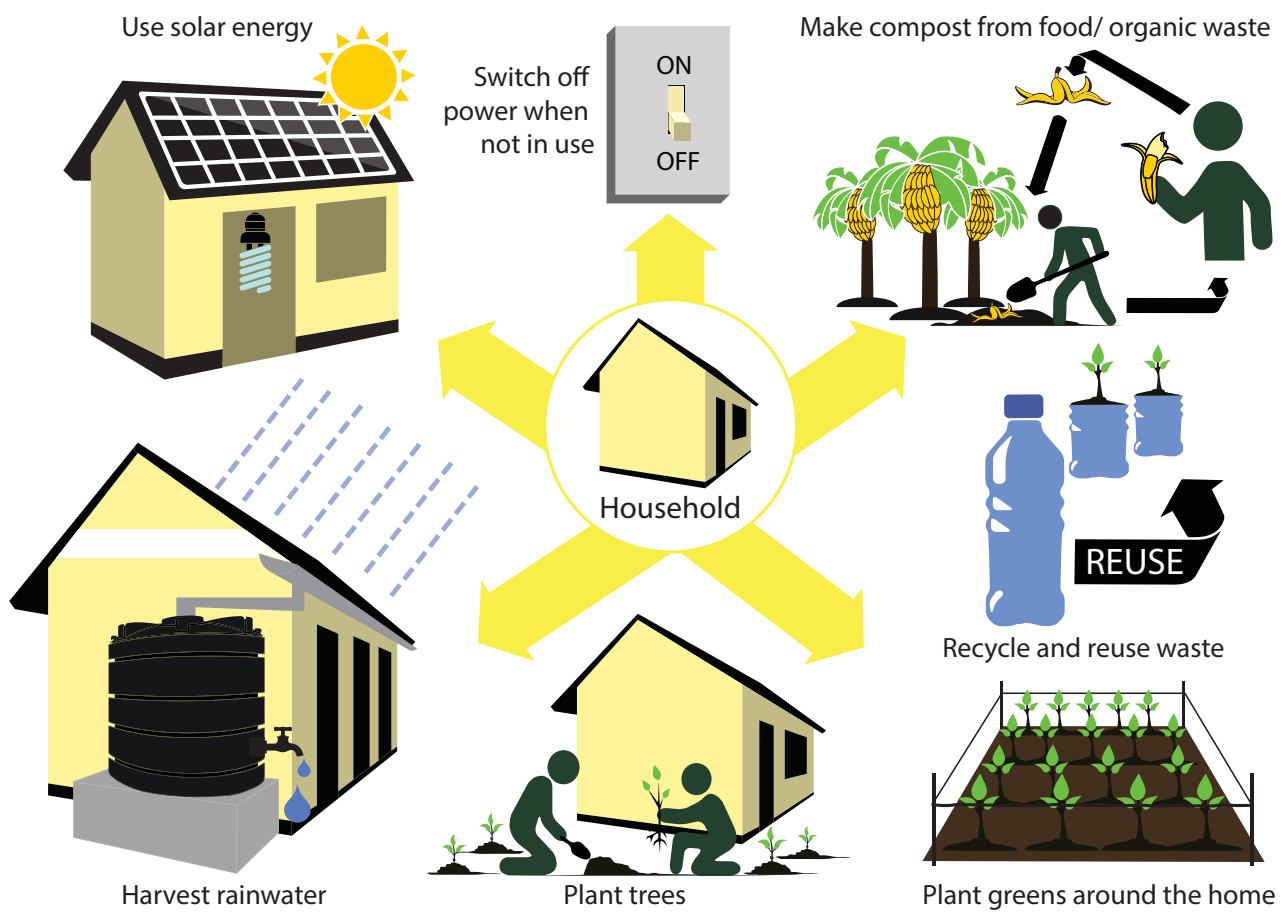
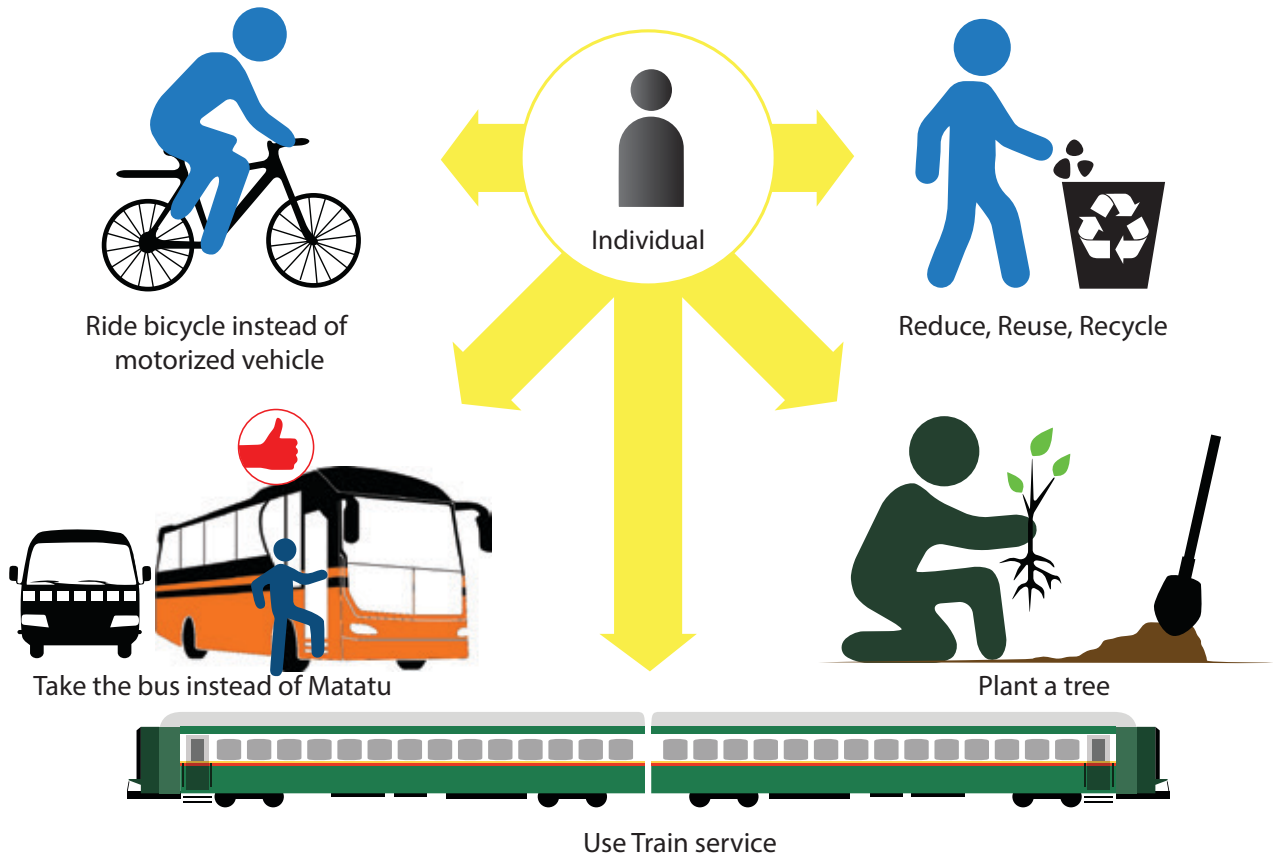
### Communication

Maximizing platforms and opportunities to collect and share information

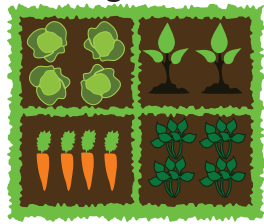


### Leading by Example

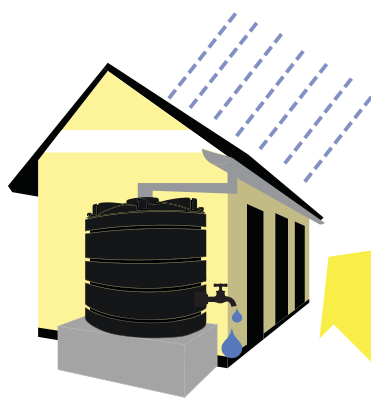
Everybody walking the talk



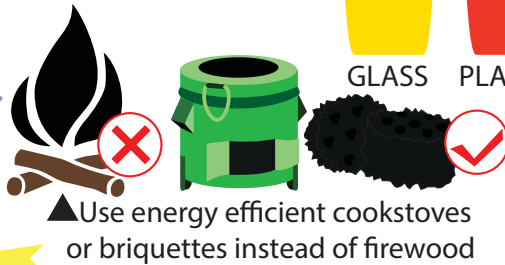
▼ Grow greens for student meals



▼ Segregate & reuse waste



▲ Harvest rainwater



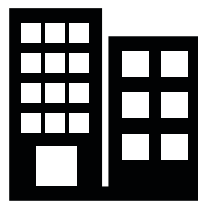
▲ Use energy efficient cookstoves or briquettes instead of firewood



▲ Conduct energy audit



HOSPITALS



SCHOOLS



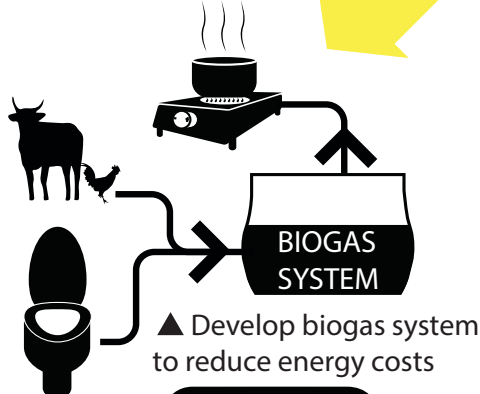
GOVERNMENT

Institutions



DONORS

▲ Set up climate smart policies



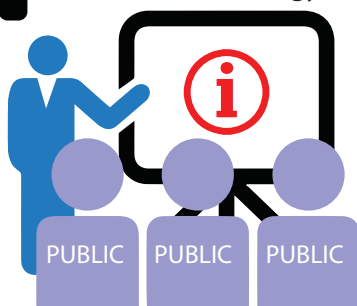
▲ Develop biogas system to reduce energy costs



▲ Allocate funds for climate smart projects



▲ Train staff in sustainable daily practices



PUBLIC PUBLIC PUBLIC

Promote shared transport systems for staff

◀ Support public awareness campaigns



**ACTION**

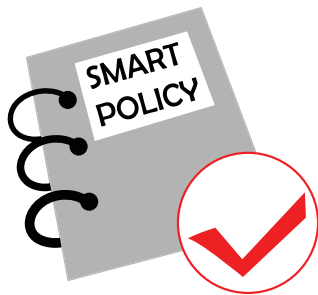




Promote staff awareness



Support the green economy



Develop climate smart policies



Conduct energy audit

BIG BUSINESS

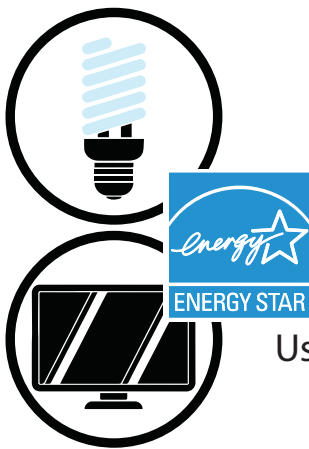


Corporates

SMALL BUSINESS



Take your waste to others who can reuse it

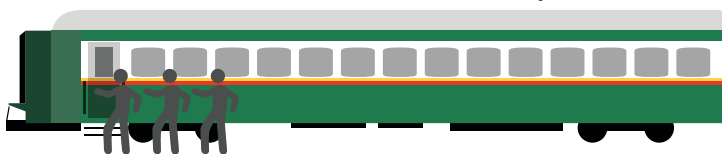


Use energy efficient equipment



Use energy efficient cookstoves or briquettes instead of firewood

Use public transport



ACTION





Hold dialogues to answer questions & find solutions



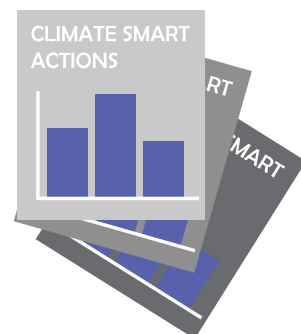
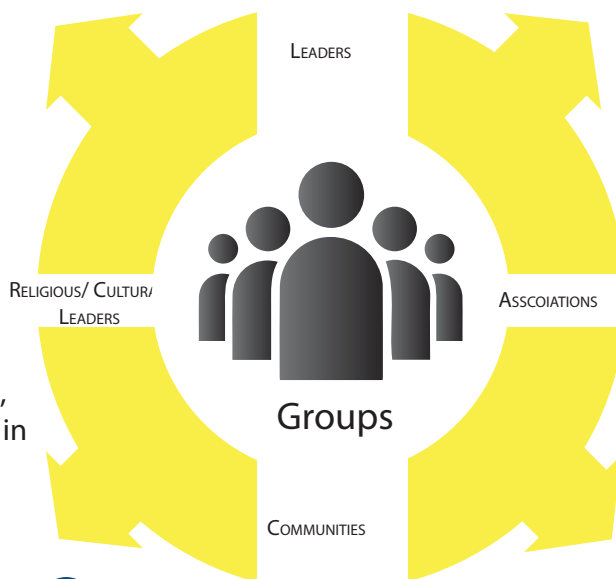
Raise awareness



Advise people on why they need to take action now



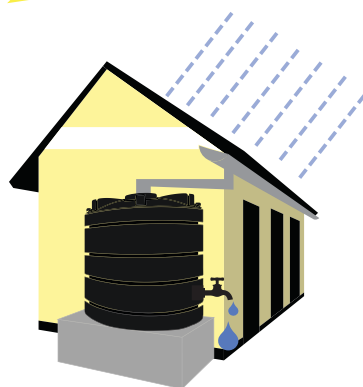
DO recycling projects, get your friends to join in



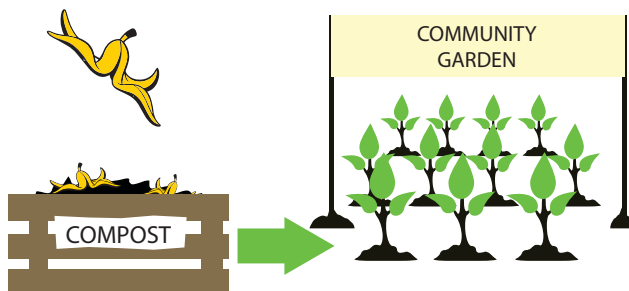
Collect data on climate smart actions in your area



Support local actions eg; cleaning



Harvest rainwater



Compost organic waste to set up community garden



Support local actions eg; planting trees

**ACTION**

## Testimonies



“Keeps me fit, saves me 20,000 UGX per week and reduces the travel time from home to work. It used to be 40 minutes plus but is now only 22. I paid for my bike within 3 months. I no longer have to pay or go to the gym because I get enough exercise riding my bike.”

Richard,  
IT Department, KCCA



“Before we got biogas we were using a lot of firewood but now this firewood has reduced up to 50%. This has helped our school expenses.”

Resty,  
Kansanga Primary School



“One briquette can cook and keep 4 kilograms of beans for 6 hours with too much fire and no smoke compared to our ordinary charcoal which is more expensive than the kasasilo (waste) briquette.”

Mama Sarah  
COVAB Restaurant  
Kikoni, Makerere



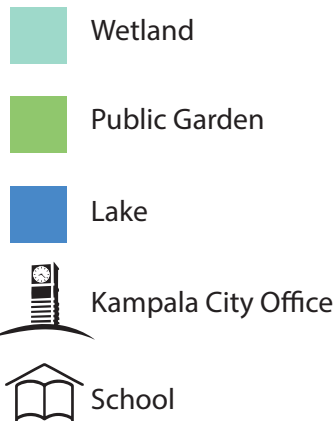
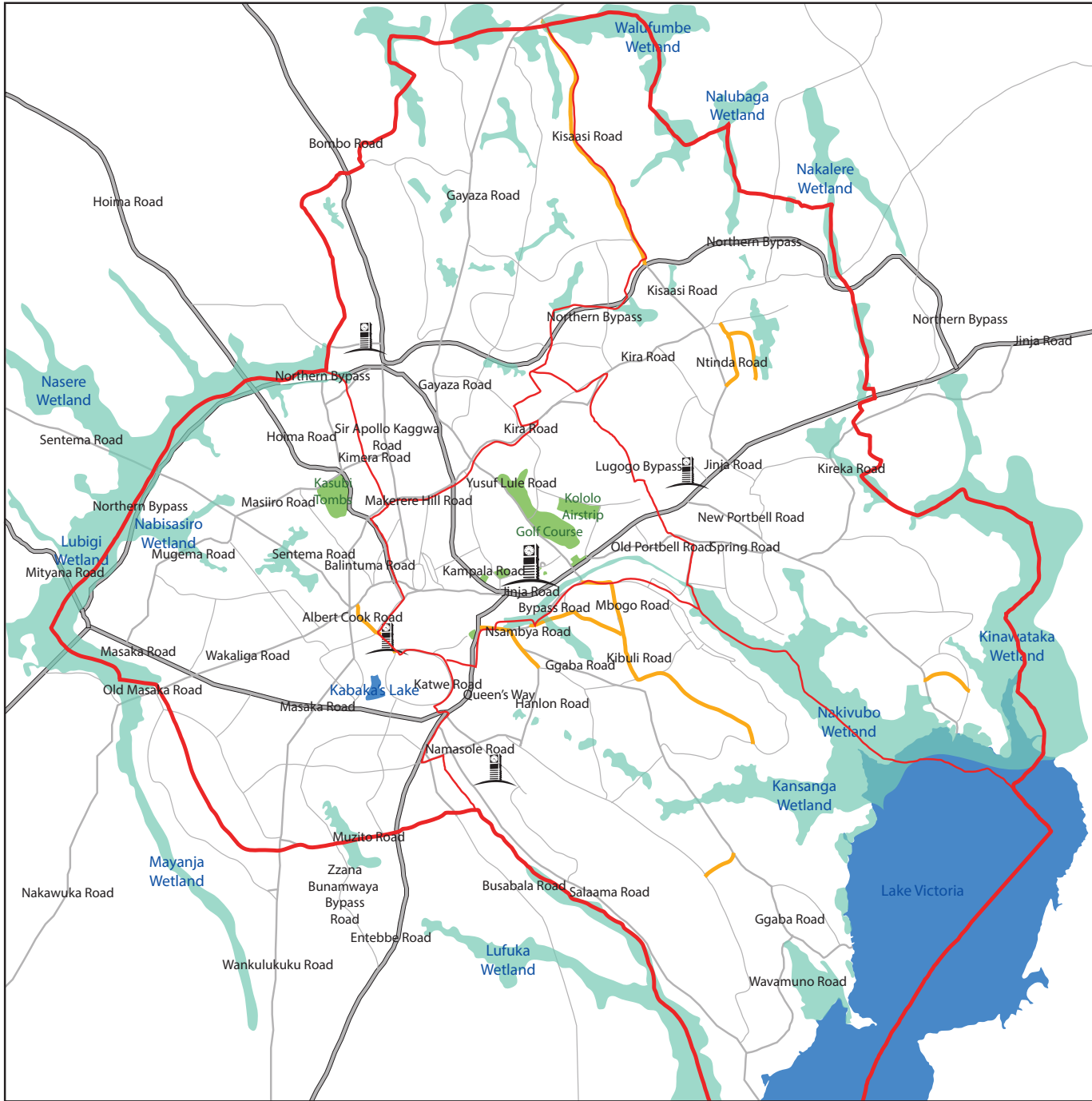
“Climate change has already started affecting our livelihoods significantly in Uganda. I've decided to put my efforts as a young man to help build a future generation that is empowered with knowledge. I teach climate change to young children in schools, so they can be able to develop mitigation and adaptation solutions and make right decisions.”

Saddam, Makerere University Climate Change Association (MUCCA)

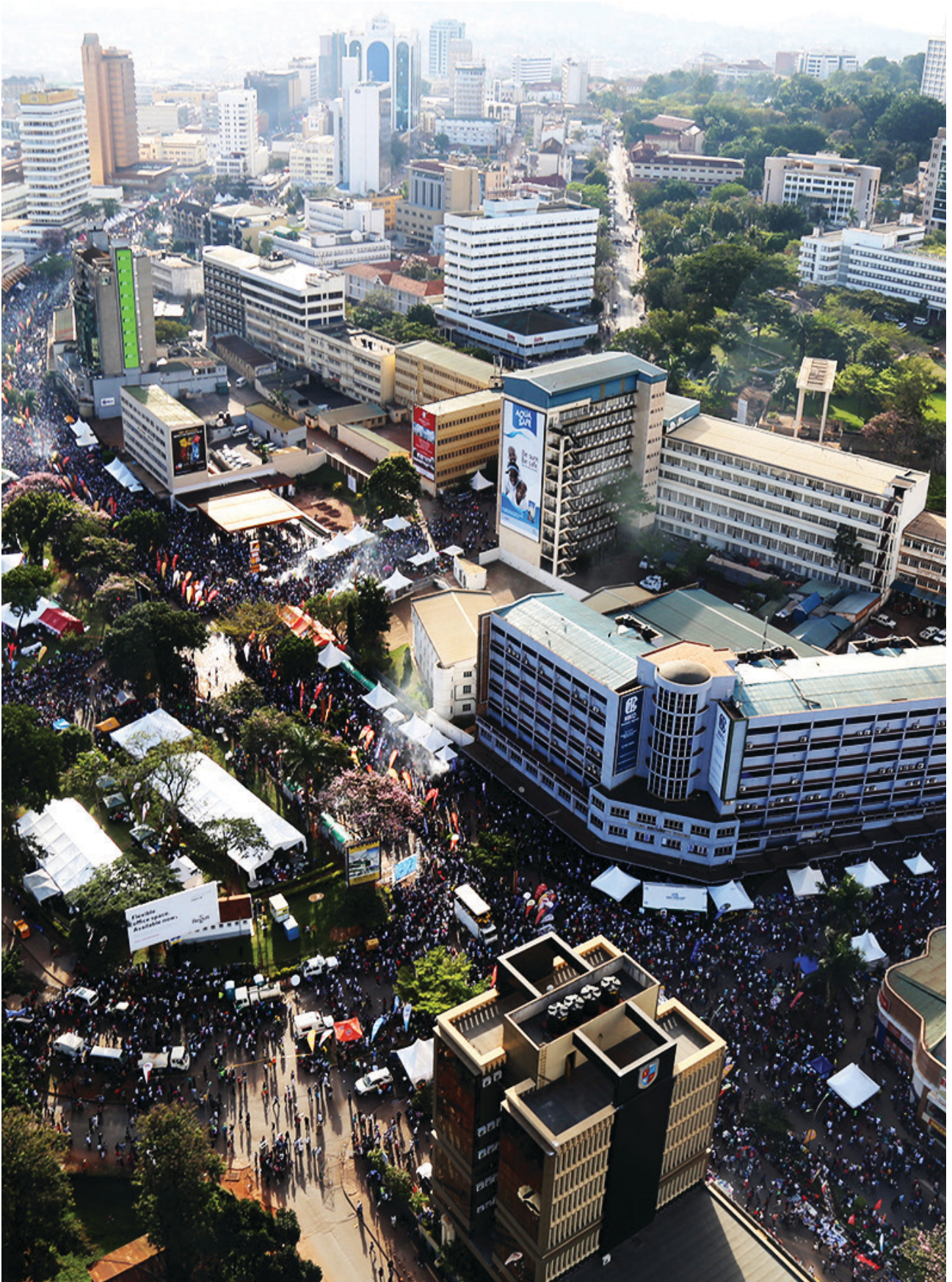


ACTION

# KAMPALA MAP











*“The solar lights make it so customers feel safe to come and buy at night. That light can help us even when electricity is not around.”*

*Karid, JIBU Water, Namuwongo*



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[www.kcca.go.ug/climatechange](http://www.kcca.go.ug/climatechange)



[www.kcca.go.ug/ccvideo](http://www.kcca.go.ug/ccvideo)



Kampala Capital City Authority - KCCA



#kampalacclimatechangeaction



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