

November Issue 22, 2017

### HIGHLIGHTS

- Pg 2 Word from the Principal Secretary
- Pg 3 What it Will Take to Implement Kenya's First NDC
- Pg 4 Kenya's Roadmap to COP 23
- Pg 5 Getting Kenya Ready for the Green Climate Fund
- Pg 6 Kenya's Experience with Direct Access to Climate Financing
- Pg 7 Kenya Bans Polythene Plastic Bags
- Pg 8 Kenya's Strategy for Climate Smart Agriculture
- Pg 9 Private Sector Engagement in Climate Smart Agriculture Value Chains
- Pg 10 Investing in Green Buildings
- Pg 11 Integrated Approach Towards Kenya's Water Security and Climate Resilience
- Pg 12 Developing a Sustainable Greenhouse Gas Inventory for Kenya
- Pg 13 Transitioning to a Green Economy
- Pg 14 Global Energy Award Lauds Starehe's Green Initiative
- Pg 15 Targeted Meteorological Data Supporting Decision Making Processes
- Pg 16 Mainstreaming Climate Change into Policy, Planning and Budgeting Processes

### About Joto Afrika

Joto Afrika is a series of printed briefings and online resources about low emission and climate change adaptation actions. The series helps people understand the issues, constrains and opportunities that they face in adapting to climate change and improving livelihoods. Joto Afrika is Swahili; it can be loosely translated to mean 'Africa is feeling the heat'.



A community solar powered pump in Rabai, Kilifi County ©Sheila Mbiru

## Implementing Kenya's Nationally Determined Contribution

### Editorial

**In recognition of the serious threats posed by climate change, Kenya has put in place elaborate national policy, legal and institutional frameworks on climate change. Key among them; National Climate Change Action Plan (NCCAP), National Adaptation Plan (NAP), National Framework Policy on Climate Change, Climate Change Act, 2016 and National Policy on Climate Finance among other sectoral policies.**

Kenya ratified the Paris Agreement in December 2016 and consequently committed to action through its Nationally Determined Contribution (NDC). Under the NDC, the country has committed to an emission reduction of 30 percent against business as usual scenario by 2030 and adaptation actions in key sectors. The national policy and legal framework on climate change provide a firm foundation for the implementation of the NDC.

The country has taken steps towards an integrated approach to NDC implementation, coordinated by the government. This builds on similar efforts including embedding sustainable natural resource utilization into its 2010 Constitution and mainstreaming climate change into the Second Medium Term Plan (2013-2017) of Kenya's Vision 2030.

The implementation of the NCCAP (2013-2017) and its ongoing review will facilitate implementation of the NDC. Further, mainstreaming of climate change into the third Medium Term Plan (MTP) (2018-2022) of Vision 2030 and the second generation County Integrated Development Plans (CIDPs) will provide the needed platforms for its implementation.

Specific sectors are developing strategies and action plans towards building resilience while minimizing emissions and improving livelihoods. Such efforts include; promotion of renewable and clean energy, afforestation, climate smart agriculture, green buildings among others.

It is expected that National and County

governments, private sector actors, Civil Society Organizations (CSOs), academia among other stakeholders will implement the NDC and other climate change plans. Significant efforts have been made to mobilize stakeholders, create awareness and train government officials towards mainstreaming and implementation of climate actions.

The government with support from various development partners is making efforts to establish robust Measurement, Reporting and Verification (MRV) systems as well as coordination mechanisms for climate change actions across actors and sectors.

Notable to mention the country is facing challenges including finance, technology development and transfer and capacity building as it strives to implement its first NDC. The country particularly requires significant international climate finance and investment to complement domestic efforts in implementing the NDC and other climate change plans. As such, preparedness activities are being undertaken including accreditation of Direct Access Entities and project pipeline development to facilitate access of resources from the Green Climate Fund (GCF).

The results of Kenya's efforts towards NDC implementation including with international support will not only promote the realisation of NDC commitments, but also contribute to the ongoing debate on how the transition to a low carbon climate resilient development can serve as an enabler of sustainable development, poverty alleviation and creation of green investment opportunities.

This issue highlights Kenya's approach to NDC implementation by National and County governments and other non-state actors.

**Fatuma M. Hussein**  
GCF Readiness Project  
[fatuma.hussein@undp.org](mailto:fatuma.hussein@undp.org)



## Word from the Principal Secretary

**Kenya continues to be vulnerable to the impacts of climate change given that most of the population's economic activities and livelihoods depend on climate sensitive natural resources. Response actions to climate change will therefore ensure that the country takes steps to reduce vulnerability to climate change and adopt a low carbon development pathway.**

The country recognises the need for a concerted global effort to comprehensively address climate change. Kenya's ratification of the Paris Agreement gives a strong signal of its commitment to working with the international community in combating climate change and meeting global adaptation and mitigation goals. Further, Kenya's Nationally Determined Contribution (NDC) signals the country's deliberate resolve to address climate change adaptation and mitigation on equal footing for national good. The National Adaptation Plan (2015 – 2030) addresses adaptation actions across all sectors of the economy.

The Government of Kenya, through the Ministry of Environment and Natural Resources is undertaking an NDC sector analysis to determine how Kenya will achieve its NDC, including adaptation goals and the greenhouse gas emissions reduction target of 30 percent below the 2030 business as usual scenario. The analysis lays the groundwork for Kenya's NDC implementation plan, and provides the evidence base for the review and updating of the National Climate Change Action Plan 2013-2017 (NCCAP, under review). The NCCAP is the national mechanism through which the NDC will be implemented, in accordance with Kenya's Climate Change Act, 2016.

Financing of climate change actions and interventions is key towards Kenya's realisation of its NDC. The country is thus in the process of operationalizing the Climate Change Fund established under the Climate Change Act, 2016. Importantly, the Ministry of Environment and Natural Resources, the Kenya School of Government and other stakeholders have developed a training program aimed at supporting integration of climate change actions and considerations when designing, planning and budgeting for programs, projects and activities, both at national and sub national level.

Energy is a priority sector in Kenya's NDC. The Ministry of Environment and Natural Resources has supported the development of minimum energy performance standards (MEPS) for priority appliances, including televisions, LED lighting and computers. The development of MEPS has been done through thematic working groups that involves experts from both government and private sector.

The implementation of these activities and processes of planning for implementation of the NDC have received support from the Government of Kenya and Development Partners, which include the USAID-UNDP funded Low Emission and Climate Resilient Development (LECRD) Project.

This edition of Joto Afrika presents Kenya's integrated approach towards implementing our Nationally Determined Contribution (NDC's) and meeting our international and national climate change obligations.

**Charles T. Sunkuli,**  
Principal Secretary,  
State Department of Environment,  
Ministry of Environment and Natural Resources

# What it Will Take to Implement Kenya's First NDC



*Stakeholders mapping landscape restoration in Mt Elgon Ecosystem ©Aaron Minnick*

**Kenya took an emission abatement target of 30 percent by 2030 against business as usual scenario in her Nationally Determined Contribution (NDC) that was submitted with ratification instruments of the Paris Agreement. Ratification of the Paris Agreement and commitment in the NDC places responsibility on Kenya to put in place mitigation and adaptation measures at the national level to respond to the challenge of climate change.**

The scheme to implement the NDC ensures that climate change action, as a cross-sectoral issue, is mainstreamed into the development planning documents. Kenya's Climate Change Act, 2016 recognises a five-year horizon action plan as the means for mainstreaming and implementing climate change actions in Kenya. The national action plan will be developed to implement climate change actions and will cover both national and sub-national interventions.

A review to analyse the progress made to implement the First National Climate Change Action Plan (2013-2017) has been done to pave way for the Second National Climate Change Action Plan (2018-2022). The Second Action Plan will integrate and run in tandem with the Third Medium Term Plan (MTPIII) (2018-2022) and the second generation County Integrated Development Plans (CIDPsII) (sub-national plans).

These Action Plans identify actions, responsibilities and timeframes, allowing national and sub-national governments to work together to develop, implement and report progress within a coordinated national framework. The MTPIII and 2nd CIDPs will provide an opportunity to take stock of implementation progress and lessons learnt that would inform future progress.

The National Climate Change Action Plan (2018-2022) will be developed through participatory approaches involving a broad range of stakeholders including civil society, the private sector, academia, marginalised communities, national and subnational government and will

be approved by the National Climate Change Council, National Assembly and the Senate as prescribed in the Climate Change Act, 2016.

Kenya has put in place a coordination mechanism for NDC, based on thematic areas to plan for implementation of NDC. In 2016/2017, Kenya undertook an NDC analysis with relevant sector experts to clarify how it will achieve its NDCs 30 percent GHG emission reduction target, including adaptation goals by 2030.

**Kenya has put in place structures with a clear roadmap on how the NDC will be implemented at the national level**

The process brought experts from government, private sector and civil society. The priority actions identified in this process and the 2013-2017 Action Plan informed the Prototype National Climate Change Registry. The Registry with adaptation and mitigation projects and sources of financing, will be updated with new and approved relevant project pipelines from sector MTP III and CIDPs 2018-2022.

The Prototype Registry is a repository of information with limited access since it is still undergoing development. It is envisaged that the Registry will form part of Kenya's Measurement, Reporting and Verification (MRV) system and act as a repository of past, current and future bankable project pipeline.

This framework and NDC analysis will inform the NDC implementation plan that will be embedded in the Action Plan. It will take both public and private actors to effect the Plan and a joint public and private sector partnership for implementing NDC is at the conceptual stage.

The success of the country's national efforts will depend on additional support from developed countries through financial, technology development and

transfer mechanisms. Effective mitigation and adaptation actions will also require international cooperation in research and capacity building. Research is particularly needed for evidence-based interventions and to curve the long-term mitigation and adaptation pathways for priority sectors.

To realise the benefits of the Green Climate Fund (GCF) and other climate financing opportunities, Kenya has established a GCF Secretariat with the National Designated Authority (NDA) being the National Treasury. The leadership taken by the National Treasury in Climate Finance has seen the development of the Draft Climate Finance Policy, and budget codes among other initiatives, to track climate finance. Further, the Climate Change Act, 2016 establishes a National Climate Change Fund and mandates the National Treasury to operationalize the Fund through a Subsidiary Legislation. To this end, the Treasury has put in place a task force to design and develop procedures for operationalising the fund.

Successful implementation of the Action Plan and NDC by extension, requires an integrated governance arrangement that is highly participatory with the involvement of all relevant stakeholders at both levels of government. The Act establishes and defines roles and responsibilities of the National Climate Change Council chaired by the President; the Directorate of Climate Change; and Climate Change Units at sectoral and sub-national level.

The country has put in place structures with a clear roadmap on how the NDC will be implemented at the national level. These plans have to be met with adequate financing and actual implementation of the planned projects to set the Country on a low carbon and resilient development pathway.

**Dr Pacifica F. Achieng Ogola**  
Director Climate Change Programmes  
Coordination  
Ministry of Environment and Natural  
Resources  
[Pacie4@yahoo.co.uk](mailto:Pacie4@yahoo.co.uk)

# Kenya's Roadmap to COP 23



Tree nursery at Tezo Ward, Kilifi County  
©Sheila Mbiru

**Kenya welcomes the speedy entry into force of the Paris Agreement and looks forward to the finalisation and adoption of the robust Rule Book by the twenty-fourth session of the UNFCCC Conference of Parties (COP 24) in 2018.**

Kenya expects that progress will be made during the United Nations Conference of Parties (COP23) on the development of modalities, procedures and guidelines to operationalize the different articles of the Paris Agreement and the related Rulebook; and to demystify, among others, the global adaptation goal and the related adaption communication.

The Paris Agreement Rulebook has been touted as *"the operational manual of the Agreement which will deliver a transparent global accounting of emissions reductions, provision of climate finance, technology development and transfer, and adaptation needs."*

Its preparation falls within the responsibility of the Ad-hoc Working Group on the Paris Agreement (APA), and has been a major preoccupation in climate change talks since COP22 in Marrakech in 2016.

COP22 made progress on the technical work that must be completed for the development of the rulebook that will be needed to ensure implementation of the Paris Agreement in 2020. The Paris Agreement Rulebook will clarify key questions, such as who should do what, by when, how and with what financial and other support.

These includes how countries should communicate their efforts with regards to mitigation and adaptation, climate finance, transfer of technology and capacity-building, how developed countries will be held accountable for their commitments, and how collective efforts will be reviewed and assessed against the global goals in the Paris Agreement, with a view to progressively enhancing ambition and climate action over time.

Substantive progress was achieved in transitioning from conceptual discussions to more focused technical work, including textual elements, during the climate

change talks in May this year. It is hoped that progress will be made on all items in a coherent and balanced manner and ensure a coordinated and coherent approach on the related matters considered under the subsidiary bodies (SBI and SBSTA). The Rulebook is expected to be ready for adoption by the COP in 2018.

Kenya has already taken steps towards ambitious climate actions in line with the Paris Agreement. This includes establishing the National Climate Change Action Plan (NCCAP); National Adaptation Plan (NAP); National Framework Policy on Climate Change; Climate Change Act, 2016; and National Policy on Climate Finance.

**Kenya has already taken steps towards ambitious climate actions in line with the Paris Agreement**

The implementation of the Climate Change Act, 2016 has started in earnest. This includes the mainstreaming of climate change adaptation and mitigation in Medium Term Plans (MTP 2018-2022) and County Integrated Development Plans (CIDPs). Further, the establishment of the National Climate Change Council (NCCC), to provide an overarching national climate change coordination mechanism, is ongoing.

Additionally, several climate change coordination units have been established across sectors at the national level. At the county level, coordination structures are also being established, with some counties having taken strides to enact relevant county legislation and policies, and climate financing structures.

Some of the obstacles that the country face in the implementation of the Climate Change Act, 2016 include low level of awareness about the Act, low technical and institutional capacities and inadequate resources and mismatch between donor preferences and actual national needs.

The country has addressed the challenges through the Climate Change Act, 2016 as it has set out structures for public awareness and engagement in climate change response and disaster reduction among others.

The Country nominated the Kenya Industrial Research and Development Institute (KIRDI) as the National Designated Entity (NDE) of the Climate Technology Centre and Network (CTCN), which is the operational arm of the United Nations Framework Convention on Climate Change (UNFCCC). KIRDI, which works with other national institutions, provides an opportunity for the country to develop technologies to implement its Nationally Determined Contributions (NDCs).

Kenya's preparation and participation at the UN Climate Change processes including for the upcoming COP 23/ CMP 13 is coordinated by the Ministry of Environment and Natural Resources.

The process involves inter-ministerial technical consultations with the Government ministries, departments and agencies; and Civil Society Organizations and the Private Sector, among other national stakeholders.

The country's position is integrated into the African Group position, while reflecting the Kenya's unique national circumstances.

**Stephen M. King'uyu**

Climate Change Directorate  
Ministry of Environment and Natural Resources  
[stephen.kinguyu@gmail.com](mailto:stephen.kinguyu@gmail.com)

**Bob Aston**

Arid Lands Information Network (ALIN)  
[baston@alin.net](mailto:baston@alin.net)

**The United Nations Climate Change Conference of Parties (COP) are yearly conferences held in the framework of the United Nations Framework Convention on Climate Change (UNFCCC)**

# Getting Kenya Ready for the Green Climate Fund



GCF Secretariat in discussion with NEMA Officials ©NEMA

**Kenya has put in place comprehensive policy, legal and institutional frameworks on climate change and climate finance. These include; National Climate Change Action Plan, National Climate Change Framework Policy, Climate Change Act, 2016 and National Policy on Climate Finance, among others. The National Treasury coordinates climate finance related issues in the country and is the National Designated Authority (NDA) with GCF since 2014. Further, specific technical climate finance unit /GCF secretariat has been designated at the National Treasury.**

In recognition of the need for preparatory activities to help access and manage climate finance from the Green Climate Fund (GCF), the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) has provided support through GCF Readiness programme in 9 countries, including Kenya. The programme is implemented by the United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP) and World Resources Institute (WRI).

The GCF Readiness Programme in Kenya responds to priority national needs and aims to support the government in strengthening national capacities to effectively and efficiently plan for, access, manage, deploy and monitor climate financing in particular through the GCF. The Programme has made significant achievements including:

- *Supporting accreditation of national direct access entities (DAE)* – National Environment Management Authority (NEMA), which is the only national DAE accredited with GCF, has received support through the process. In addition, Kenya Commercial Bank (KCB) a local private bank is receiving support towards accreditation. The bank is expected to access funding from GCF through different financial instruments needed to facilitate climate investments at scale.
- *Project pipeline development* – In responding to national priorities and in line with the Kenya's Nationally

Determined Contribution (NDC), the programme is supporting development of a project proposal to support national efforts in ending drought emergencies. The proposal is to be submitted by the International Union for Conservation of Nature (IUCN) by December 2017. It will facilitate key relevant national institutions to implement synergised long-term, ecosystem-based, and landscape interventions to tackle climate-induced drought and disaster risks. The programme also supports NEMA in designing bankable projects for GCF/ climate finance and developing the baseline studies needed.

- The programme has *supported operationalisation* of the newly established NDA/GCF unit at the National Treasury. The unit has benefited through office furniture and equipment, the establishment of GCF website and training of critical staff on key climate finance related courses among others.
- *Building capacities of county governments on GCF and climate finance* – County governments play a critical role in implementing Kenya's response actions as stipulated in Climate Change Act, 2016. The programme has facilitated capacity building of the 47 county governments making key entities for the development of GCF pipeline projects.
- *Building capacities of executing entities of priority projects* – The Council of Governors, National Drought Management Authority (NDMA) and Water Resources Management Authority (WRMA) are receiving support including in depth capacity assessments and training for effective implementation of the priority projects expected to be funded through GCF.
- *Development of GCF strategy for Kenya* – The programme is supporting development of a comprehensive national GCF Strategy, which will be crucial to guide NDA and stakeholders involved in GCF processes. The Strategy aims to establish clear procedures and processes, define

roles and responsibilities, facilitate prioritization of projects/programmes for GCF funding, mechanisms for coordination, as well as provide for a national readiness action plan for implementation.

## Some key lessons learnt include:

1. Readiness support is crucial to ensure effective engagement with GCF. Despite the programme's milestones, there are significant capacity building needs of many institutions in Kenya requiring reliable GCF readiness support.
2. NDA plays an important role as the country's interface with the Fund, and closely involved with all of GCF's funding processes. It is thus crucial to institutionalise NDA, where possible embedded in Policy and build its capacities to deliver its role.
3. A national GCF strategy is important to facilitate strategic engagement with GCF. Such a strategy should establish clear co-ordination, roles of entities and stakeholder engagement framework
4. Knowledge management and visibility of GCF activities in the country is important

GCF processes and procedures remain complex to many developing countries and thus access and effective management of the funds remains a challenge. In this regard, regular and institutionalised GCF preparedness processes is important. The UNEP/UNDP/WRI GCF Readiness programme has laid a firm foundation for Kenya's engagement with GCF. Future readiness activities will build on the programme and other complementary efforts.

More at <http://www.gcfreadinessprogramme.org>

## Peter Odhengo

Senior Policy Analyst/Head of GCF Technical Unit, The National Treasury  
[odhengo@gmail.com](mailto:odhengo@gmail.com)

## Fatuma M. Hussein

National Project Coordinator  
GCF readiness Programme, Kenya  
[Fatuma.hussein@undp.org](mailto:Fatuma.hussein@undp.org)

# Kenya's Experience with Direct Access to Climate Financing



Members of public viewing products exhibited by agriculture innovators ©Bob Aston

**Kenya requires more than KSh 4 trillion (USD 40 billion) for mitigation and adaptation actions across sectors to reduce its greenhouse gas emissions by 30 percent by 2030 as envisaged in the Nationally Determined Contribution (NDC). The Government has given the National Environment Management Authority (NEMA) the mandate as the National Implementing Entity (NIE) to expand climate finance sourcing from multilateral funding organisations to promote climate action in the Country.**

An interview with Ms. Wangare Kirumba, Coordinator National Implementing Entity (NIE), NEMA highlights the Country's experience with direct access to climate financing.

## **How is NEMA involved with climate finance?**

NEMA became the 12th NIE globally, and 5th in Africa to receive the Adaptation Fund (AF) accreditation in 2012. In addition, in March 2016, NEMA joined a global list of 33 institutions accredited by the Green Climate Fund (GCF). The accreditations provided the country with an entry point of funds for mitigation and adaptation interventions.

## **How did NEMA manage to get the two accreditations?**

NEMA demonstrated adequate competence in technical capabilities, maintenance of accounts, provisions for external and internal audit, procurement, project management and creating and maintaining an ethical and corruption-free environment, hence accredited as NIE with AF in 2012 and managing a programme worth KSh 1 billion (USD 10 million). As the NIE for Kenya, the Authority underwent fast-track accreditation and was accredited by GCF as National Direct Access Entity (DAE).

## **What is the difference between the Adaptation Fund and the GCF?**

The Adaptation Fund is a fund established under the Kyoto Protocol of the UN Framework Convention on Climate Change (UNFCCC). It funds concrete

climate change adaptation projects and programs based on the needs, views and priorities of developing countries. The Adaptation Fund only supports one programme per country.

The GCF is a Fund established under the UNFCCC that provides support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change. The fund is for both mitigation and adaptation and promotes investment.

## **How can organisations access climate funding?**

Through an open call for proposals, NEMA developed and is implementing an Adaptation Fund Project covering 14 counties. In addition in 2016, NEMA invited applications for proposals for GCF funding from all interested organisations. The organisations eligible to send project proposals included Government ministries, County Governments, Non-Governmental Organisation (NGOs), Community Based Organisations (CBOs), Faith Based Organisations (FBOs), Public agencies and private sector entities. Subsequently, selected proposals will be finalised and submitted to GCF for funding. The next round of proposal submission will be announced soon.

## **What are some of the Projects submitted to GCF and the Adaptation Fund?**

NEMA has been implementing a KSh 1 billion (USD 10 million) Adaptation Fund funded programme since 2016 titled, 'The integrated programme to build resilience to climate change and adaptive capacity of vulnerable communities in Kenya'. NEMA is finalising five funding proposals focusing on adaptation with mitigation co-benefits that it will submit to the GCF. The proposals focus on priority adaptation actions in the NDC. The projects cover the thematic areas of Devolved Governance, Climate Smart Agriculture, Water, Environment and a livelihood based programme in Laikipia County.

The projects will strengthen the County governance to access climate finance for

sustainable development; enhance the resilience of crop, livestock and fisheries subsectors by promoting climate-smart agriculture; strengthen the resilience of vulnerable communities and ecosystems in Athi River catchment; and enhance community resilience through tree crop based livelihood options.

## **What are some of the achievements?**

NEMA is implementing the Adaptation Fund Project in 14 counties and it is finalising five funding proposals that it will submit to the GCF. NEMA also looks to increase the quality and quantity of proposals to access more funding from GCF. NEMA also mentors Malawi and Zimbabwe to seek accreditation with the Adaptation Fund.

## **What are some of the challenges faced when seeking for climate funding?**

There is lack of scientifically sound, area, and ecosystem-specific data that would help in decision-making. The country also lacks enough resources for mitigation and adaptation interventions. The accreditation process is also lengthy and complicated, but it is worth the effort. Despite the challenges, NEMA has enhanced the direct flow of climate finance into Kenya. The country can submit as many proposals to GCF but with a funding cap of KSh 1 billion (USD 10 million).

## **What advice would you give to those seeking accreditation?**

There is opportunity to leverage on capacity building as an organization-wide initiative that garners buy-in from top management. In addition, readiness support under GCF and other partners is crucial to provide the much needed support.

More at <https://www.nema.go.ke>

**Wangare Kirumba**  
DAE Coordinator  
National Environment Management Authority (NEMA)  
[wkirumba@nema.go.ke](mailto:wkirumba@nema.go.ke)

**Bob Aston** - ALIN conducted the interview

# Kenya Bans Polythene Plastic Bags



Marketing Officer (L) of Kiondo World demonstrating features of kiondo ©Minnie Mbaabu

**In Kenya, polythene plastic bags were used in various sectors of the economy for wrapping, storage and carrying various commodities. Due to lack of public awareness on environmental management and sanitation, the plastic is used and thrown away causing severe environmental hazards that affect all living things. Unknown to many users, is the fact that the polythene plastics are non-degradable therefore taking more than a thousand years to decay!**

The Kenyan government through the Cabinet Secretary, Ministry of Environment and Natural Resources banned the use, manufacture and importation of plastic bags used for commercial and household packaging effective from 28th August 2017. The Ban applies to; Carrier bags constructed with handles and with or without gussets and flat bags constructed without handles and with or without gussets.

Research done by the National Environmental Management Authority (NEMA) in conjunction with United Nations Environment Programme (UNEP) and Kenya Institute of Public Policy Research and Analysis (KIPPRA) revealed that 100 million plastic bags were handed out annually in Kenya by supermarkets alone. The plastic bags that are commonly called 'juala' are also used as secondary packaging for items in shops and for traders in markets.

The reason for the Government ban on plastic bags is to avoid health and environmental effects resulting from their use. Kenya joins other countries such as Rwanda, Botswana, Somaliland, France, Bangladesh and Israel that have effectively banned the use of plastic bags. Consumers are now encouraged to replace the plastics with eco-friendly

options such as; paper bags, cloth bags, other reusable fiber bags and cardboard boxes.

## The harmful effects of plastic bags

Discarded plastic bags are easily transported by wind and are some of the most visible components of roadside and shoreline litter. Plastics find their way into rivers, lakes, oceans affecting aquatic life. They block the sewerage systems in towns resulting to drainage clogging causing flooding that causes more havoc including loss of lives. The plastics are also an eyesore in towns.

The plastics are non-degradable, non-permeable and therefore have an effect on the soil ecosystem by retarding its carrying capacity and productivity affecting plant life and biodiversity. Polythene bags thrown out in the open were consumed by livestock thereby reducing their productivity and causing death in the long run. In Kenya, there have been many reported cases where plastics are found in the stomach of livestock after slaughter.

Plastics contain toxins that can leach into foodstuffs therefore endangering human health. Indeed, they are suspected to be carcinogenic! Burning of plastic bags for disposal causes carbon emissions to the atmosphere while causing eye and skin irritation, itching, respiratory failure and headache from exposure to fumes.

## Effecting the ban

NEMA, a government agency in charge of implementing the ban is encouraging the development of eco-friendly strategies for the Kenyan society to use degradable bags and better disposal patterns keeping in view the requirement of protecting the health of the environment. The problems of environmental pollution and hazards

cannot be tackled effectively without public awareness about disastrous consequences.

Besides, NEMA has developed stern enforcement laws to ensure compliance of eco-friendly measures by all manufacturers, importers and users of plastic bags. Kenyans producing, selling or even using plastic bags risk imprisonment of up to four years or fines of KSh 4 million (USD 40,000). For carrier bags, NEMA has developed guidelines on the use of non-plastic alternatives like; all bags made from non-plastic materials such as jute/sisal, paper, cloth, papyrus, gunny bags (woven polypropylene plastic bags), cloth-like bags (non-woven polypropylene plastic bags), laminated polypropylene bags, polyolefin fibre bags and 100 percent biodegradable bags (starch and cassava bags).

Kenya banned the use, manufacture and importation of plastic bags

Manufacture and use of these non plastic alternatives should be given multi-pronged promotion with economic incentives, mass education on pollution and their hazards to ensure compliance with the new law. The successful implementation of this ban starts with you in your family, at home and everywhere you go since we all have a responsibility to keep our environment clean. This is a small way in which you can make a big difference while ensuring compliance with the law.

More at <http://bit.ly/2zM46mm>

**Noah Lusaka**  
Arid Lands Information Network  
[nlusaka@alin.net](mailto:nlusaka@alin.net)

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# Kenya's Strategy for Climate Smart Agriculture



Farmers in Magadi, Kajiado County sharing their experiences on Climate Smart Agriculture ©Noah Lusaka

**The impacts of climate change in Kenya's agriculture sector are manifested in extreme weather events that cause flooding, drought, landslides, strong winds, seasonal weather variations, increased temperatures and gradual change in precipitation patterns.**

These impacts cause acute and chronic threats to agro-based livelihoods and leads to encroachment of fragile ecosystems. Further, climate change escalates land degradation and causes a decrease in agricultural productivity; increases incidences of pests and diseases affecting crops, livestock and fish; and cause destruction of physical and social infrastructure that support the sector. In addition, due to the high risks in agro-based enterprises, there is low agro-based investments and technology uptake for production and value addition.

Kenya's Nationally Determined Contributions (NDC) has outlined Climate Smart Agriculture (CSA) as an adaptation and mitigation action that would help the country meet its target to reduce greenhouse gas emissions by 30 percent by 2030.

Climate smart agriculture is an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate. It aims to achieve three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing greenhouse gas emissions.

The agriculture sector in partnership with stakeholders developed the Kenya Climate Smart Agriculture Strategy (KCSAS) 2017- 2026 to address climate change adaptation and mitigation, rural development, food security and environmental management in the agricultural sector.

The KCSAS 2017-2026 was developed in order to transform agricultural systems and make them more productive, resilient, and competitive in generating incomes

and improving livelihoods under a changing climate.

The broad objective of the KCSAS 2017-2026 is to steer the sector towards building resilience of agricultural systems while minimizing emissions for enhanced food and nutritional security and improved livelihoods.

Specifically the KCSAS aims to:

- (i) Enhance adaptive capacity and resilience of farmers, pastoralists and fisher-folk to the adverse impacts of climate change;
- (ii) Develop mechanisms that minimize greenhouse gas emissions from agricultural production systems;
- (iii) Create an enabling regulatory and institutional framework; and
- (iv) Address cross-cutting issues that adversely impact CSA.

The County governments shall integrate the strategic issues as outlined in the KCSAS 2017-2026 and customise them according to their priorities and circumstances. The Counties will be supported to develop and package interventions, technologies and practices that are suitable and those that will give results by enhancing the resilience of the farming communities, ensuring food and nutritional security and minimising emissions where possible.

The coordination framework and implementation mechanism for this strategy is expected to be harmonized with the inter-governmental coordination structure under development by both the National and County governments' sectoral teams. This is to allow for clarity in the implementation of the strategy, which will mainly be implemented by the County Governments.

Implementation of the KCSAS 2017-2026 will contribute towards Kenya's NDC for the agriculture sector. This will require domestic and external support as the implementation of this strategy is estimated to cost approximately KSh. 500 billion (USD 5 Billion) up to 2026.

The climate smart agriculture approach has already received a boost after the World Bank approved KSh 25.9 Billion (USD 258 million) financing for the Kenya Climate Smart Agriculture Project. It aims to increase agricultural productivity and build resilience to climate change risks in the targeted smallholder farming and pastoral communities in the country.

It will be implemented in 24 counties, which include Marsabit, Isiolo, Tana River, Garissa, Wajir, Mandera, West Pokot, Baringo, Laikipia, Machakos, Nyeri, Tharaka Nthi, Lamu, Taita Taveta, Kajiado, Busia, Siaya, Nyandarua, Bomet, Kericho, Kakamega, Uasin Gishu, Elgeyo Marakwet and Kisumu. The Project excluded Nairobi, Mombasa and the 21 counties supported under the National Agricultural and Rural Inclusive Growth Project (NARIGP).

In the event of an eligible crisis or emergency, the Project will provide an immediate and effective response. It comprises of five components namely: up-scaling climate smart practices; strengthening climate smart agricultural research and seed systems; supporting agro-weather, markets, climate and advisory services; project coordination and management and contingency emergency response.

It is hoped that, the KCSAS 2017-2026 and the Kenya Climate Smart Agriculture Project will contribute to building resilience and adaptive capacity in the sector as well as reducing sectoral emissions. The strategy provides a detailed implementation framework with clear stakeholder roles and responsibilities, and forms a basis for the establishment of a monitoring and evaluation (M&E) framework.

**Dr. Lucy Ng'ang'a**  
Agriculture and Climate Change Expert  
Ministry of Agriculture, Livestock and Fisheries  
[lucynganga09@gmail.com](mailto:lucynganga09@gmail.com)



[www.facebook.com/jotoafrikamag](https://www.facebook.com/jotoafrikamag)



# Private Sector Engagement in Climate Smart Agriculture Value Chains



A farmer delivering milk at Siongiroi Dairy, Bomet County  
©Noelle O'Brien

**Public private partnerships (PPPs) are critical to the successful implementation of the Kenya Climate Smart Agriculture Strategy (KCSAS) 2017-2026. The strategy has stressed on the importance of private sector collaboration with the National and County Governments in the implementation of mitigation and adaptation measures in the agriculture sector.**

The Finance Innovation for Climate Change Fund (FICCF) is promoting the transition to Climate Smart Agriculture (CSA) in Kenya through support to microfinance institutions (MFIs) partnering with agribusiness aggregators, insurance companies and smallholder farmers to adopt a range of tools to de-risk production and build resilience to increasingly variable climate.

FICCF is a component of the Strengthening Adaptation and Resilience to Climate Change in Kenya (StARCK+) Project. The Department for International Development (DfID) funded programme seeks to support Kenya's efforts in addressing climate change through private sector engagement, improved governance and civil society capacity.

FICCF focuses on 16 counties namely; Bungoma, Kakamega, Kisumu, Homabay, Bomet, Kirinyaga, Machakos, Makueni, Nyandarua, Migori, Kitui, Tharaka, Embu, Meru, TaitaTaveta and Siaya.

Under this private sector response, FICCF provides repayable grants to selected MFIs for lending to farmers and agribusiness aggregators to invest in climate smart commodities, technologies and practices. In addition, a 20 percent matching grant to MFIs is ensuring that technical assistance on climate smart approaches are provided to farmers to address climate risks in the sorghum, dairy, chicken and cassava value chains.

The lending process provides a mechanism through which climate finance can flow through existing commercial financial institutions to smallholder farmers and aggregators concurrently helping de-risk production. Farmers use

their produce as collateral. Repayments are offered to new and existing farmers. This brings the concept of a perpetually growing revolving loan fund.

ACRE Africa works in collaboration with the Kenya Meteorological Department (KMD) to deliver downscaled seasonal weather forecast information to ensure appropriate formulation of targeted agro-weather advisory. All partners hold at least two participatory scenario planning (PSP) and review workshops with contracted farmers every season to disseminate information; once at the beginning to plan and the other at the end to review the season and plan for the next.

**"I am grateful to this project (because) I have made a profit, which I have managed to save and pay my children's school fees," Linnet, from Manywanda Village**

Participation in scenario planning, climate information dissemination, and review sessions has sensitized farmers to begin basing their plans on climate information. On-the-ground automated weather stations provide scope to understand crop issues in relation to specific weather parameters. The use of weather information has increased the predictability of farming outcomes, and reduced chances of loan default. Contracted farmers receive weather information via text messages and/or local radio channels.

The weather based index insurance addresses drought while the multi-peril crop insurance provides cover for excessive rain and pests such as quelea birds and armyworms. Weather-oriented losses are assessed using satellite data but peril-oriented losses are assessed through on-farm spot checks. Currently, potential peril related claims are being processed.

APA Insurance Company provides multi

peril insurance for sorghum farmers, which has a working arrangement with Acre Africa for actuarial services. Acre Africa calculates premiums for APA using forecast data supplied by KMD.

*"I am grateful to this project as I just lived with chicken, but nowadays I rear chicken. It was costly to construct a good poultry house, But I have made a profit, which I have managed to save and pay my children's school fees,"* says Linnet from Manywanda Village, Siaya County who is working in collaboration with the chicken aggregator RAMCO.

Privately contracted extension providers deliver technical support services, including field demonstrations, choice of agricultural enterprises, technologies to adopt among others.

The FICCF use of an E-voucher system for transaction presents increased time and data efficiency. The cost of credit is lowered due to the risk management mechanisms, such as partnerships, which reduces the risk of total default. Profiling sorghum farmers through an ICT platform has increased farmers visibility and credit rating.

By mid-2017 close to 4,000 low-end smallholder farmers had benefitted from loans and insurance through the 2 year FICCF intervention. The UKAID supported intervention will continue on the ground implementation through to mid-2018 and the ownership of the loan funds is being transferred to the MFIs so that they continue to operate the revolving loans funds in each of the value chains.

The FICCF team is working with groups of stakeholders coming together as platforms in each of the commodities to ensure that the climate smart approaches are embedded into long-term practices.

**More at:** <http://www.ficcf.com/>  
<http://www.starckplus.com/>

**Noelle O'Brien**  
Team Leader  
Finance Innovation for Climate Change Fund (FICCF)  
[noelle.obrien@ficcf.com](mailto:noelle.obrien@ficcf.com)

# Investing in Green Buildings



*The learning centre at Catholic University. The centre is among the few green buildings in Kenya ©Catholic University*

## **Designing low carbon, energy efficient and resilient buildings is an important step towards the realization of Kenya's low emission and climate resilient development pathway as envisaged in its Nationally Determined Contribution (NDC).**

The Global Alliance for Buildings and Construction (GABC) estimates that energy use in buildings and for building construction represents more than one-third of global final energy consumption and contributes to nearly one-quarter of greenhouse gases (GHG) emissions worldwide.

Increase in green buildings construction in Kenya would strengthen the implementation of the country's NDC and contribute towards the goal of the Paris Climate Change Agreement to stabilize global temperature increases to below 2 degrees Celsius path. It would ensure the growth of renewable energy, GHG emissions reductions, energy efficiency gains and the increase of sustainable buildings in the Country.

The Environmental Management and Co-ordination Act, 2012, has regulations that support elements of green buildings. The Energy (Energy Management) Regulations, 2012 requires high-energy consumers to carry out energy audits every three years, and prepare a three-year energy investment plan that sets out proposals for the conservation of energy.

Similarly, the Energy (Solar Water Heating) Regulations, 2012 require all buildings that use over 100 litres of hot water in a day to install solar water heating systems.

In Kenya, the process of acquiring the Leadership in Energy and Environment Design (LEED), Green Star or Green Mark certification depends on what stage one needs it. The building owner or developer has to get into contact with the certification body. The building is then rated based on audited assessment and provided documentations.

The certification process can take 2-3 months or half a year depending on nature, the size of building, time of application,

project documentation, and volume of the audit report.

Green building elements for tenants to look out for:

- 1) Building site – building located within an accessible neighbourhood, land partly or completely covered with vegetation, provisions for storm water management, green roofs and balcony;
- 2) Environmental quality – Landscape that promotes mobility like cycling;
- 3) Construction materials – Use of renewable and reusable materials, locally sourced raw materials that are non-toxic
- 4) Water conservation – Buildings with provisions for water storage, recycling and waste water management. In addition, buildings with efficient water fittings in terms of low and high volume water use and sensor taps
- 5) Lighting – Naturally well lit houses with sufficient windows. Buildings with translucent wall panels, use of Light Emitting Diodes (LED), building that allow daylight harvesting, south facing living rooms and lack of glare in the house
- 6) Air quality – Natural airflow in the building, non-toxic materials used for finishing and non-stuff
- 7) Temperature – Thickness of the walls, materials used and if the building has sensors and controllers including thermostats, humidistats, mechanised blinds, energy efficient windows, and ventilation openings that regulate temperature
- 8) Sound – Building with minimal sound transfer, reverberation time and echo
- 9) Heating – Building that incorporates renewable energy like solar systems and smart electrical switches
- 10) Management and maintenance – Separate meters and tenancy agreement that allows tenants to make minor changes that allows energy conservation to the building

The main challenge hindering faster adoption of green buildings in Kenya is the 'myth' that Green Buildings are

expensive. The cost can be reduced starting from site identification including available infrastructure and using locally sourced renewable materials like bamboo throughout the project life cycle.

Other challenges include low investment in scientific research, lack of green building policy framework, and lack of interest as it is not mandatory for new projects to adhere to green buildings standards.

Kenya currently has 21 Green Certified buildings. The certifying agencies include LEED, Green Star, and Green Mark. The University of Nairobi and Jomo Kenyatta University of Agriculture and Technology (JKUAT) have already incorporated Green Building concepts in their architectural courses. The country now needs more practical training of architects, designers, technicians, assessors and other professionals involved in Green Building technologies.

Minimizing energy consumption, optimizing on resource efficiency and reducing carbon footprint in buildings can help to sustain the environment for future generations.

More at: <http://alin.or.ke/Joto%20Afrika>

### **Nickson Otieno**

Coordinator of Green Building Standards  
Green Africa Foundation  
[otienonickson@gmail.com](mailto:otienonickson@gmail.com)

## **Green Mark's Certification Tool Assessment Process**

A qualified assessor awards points for the building according to performance in a broad range of environmental impacts including:

- Sustainable Site Development and Management
- Indoor Environmental Quality
- Energy Efficiency
- Water Efficiency and Conservation
- Materials and resources
- Maintenance and Management
- Innovation

# Integrated Approach Towards Kenya's Water Security and Climate Resilience



*Drawing water from a solar powered water pump in Rabai, Kilifi County ©Sheila Mbiru*

**Kenya's economic and social development blueprint, Vision 2030, emphasises the need for the adequate and sustainable provision of water supply and sanitation services, with a target to achieve universal access by 2030.**

The country enacted the Water Act, 2016 to align the water sector with the Kenyan constitution. The Act recognizes that water-related functions are a shared responsibility between the National and the County Government. However, the National government remains responsible for water resources management. The Act also recognizes that the Ministry of Water and Irrigation is the sector lead responsible for policy development.

Kenya is a water-scarce country with less than 1,000 cubic metres per capita of renewable freshwater resources. The country mainly depends on the five water towers namely; Mau Forest Complex; Mount Kenya; the Aberdares; Cherangani Hills and Mt. Elgon. The country's Technology Needs Assessment (TNA) and National Climate Change Action Plan prioritized agriculture and water sectors, emphasizing that water is an important natural resource critical for sustainable development.

The prioritised water sector interventions include: increasing capture and retention of rainwater through the construction of waterways, strategic boreholes recharge and other water harvesting methods; rehabilitating rivers and dams to improve carrying capacity, storage and water quality; and developing structures and technologies to ensure availability of water during the dry season.

Various issues in the different catchment areas threaten water resources in the country. Critical issues affecting the catchment areas of Kenya include human conflict, water quality, soil erosion and sedimentation, flooding, overgrazing, invasive alien trees, human activities including encroachment on the water sources and environmentally sensitive areas, and climate change.

Addressing these issues demand capacity

for comprehensive water resources management and planning, coupled with extensive investment in climate-resilient water infrastructure. To address these issues, the Government of Kenya, through the Ministry of Water and Irrigation (MoWI), received financing from the World Bank (IDA) in the form of a credit of KSh 21.3 billion (USD 213 million) towards the cost of implementing the Kenya Water Security and Climate Resilience Project Phase 1 (KWSCR-1).

The project started in June 2013 and will run up to December 2022. It will increase the availability and productivity of irrigation water for project beneficiaries and enhance the institutional framework and capacity for water security and climate resilience in parts of the country.

The second phase of the program, KWSCR-2 will increase bulk water supply to Mombasa and Kwale counties through the construction of Mwache Dam and related infrastructure. The project will develop sustainable economic activities within the catchment areas for communities.

Extreme climate change events in combination with population growth and environmental degradation are changing the water cycle that in turn affects water availability and runoff. To strengthen the agricultural sector in order to contribute to the national economy, Kenya's Vision 2030 sets a national goal to increase new irrigation area by 1.2 million ha by 2030. Similarly, the National Water Master Plan (NWMP) sets out to develop 17,860 small dams and water pans adding an additional 893million m<sup>3</sup> water storage by 2030.

The County's Nationally Determined Contribution (NDC) has prioritized mainstreaming of climate change adaptation in the water sector by implementing the National Water Master Plan (2014).

Investment in the sector has increased from KSh 2 billion (USD 20 million) in 2003/2004 financial year to the current level of about KSh 40 billion (USD 400 million). The water coverage levels have also increased from around 30 percent to

the current level of 60 percent.

To address the effect of climate change in the water sector, the Water Services Trust Fund (WSTF) has requested for technical assistance from the Climate Technology Centre and Network (CTCN) through the Kenya Industrial Research and Development Institute (KIRDI) to catalyse low cost green technologies for sustainable water service delivery in Northern Kenya and peri-urban areas. The low-cost green technologies have the potential to improve access to safe drinking water and sanitation services in Kenya.

The Ministry of Water and Irrigation is working with County Governments to invest in clean water supply. The Ministry has also put in place measures to control floods and harvest rainwater as well as to protect and conserve the environment thus connecting more Kenyans to safe drinking water.

Climate change and variability add to a multitude of immediate and long-term impacts on water resources and on sustainable economic growth. The country's emphasis on the prioritized water sector interventions will ensure sustainable water management and other benefits such as improved agricultural production.

**Bernard M. Karicho**  
Chief Superintending Hydrologist  
Water Resources Department  
Ministry of Water and Irrigation  
[bmkaricho@yahoo.com](mailto:bmkaricho@yahoo.com)



*Livestock from a water pan in Olopito, Narok County ©Sheila Mbiru*

# Developing a Sustainable Greenhouse Gas Inventory for Kenya



*The founder of Magiro Hydro power Plant producing power using fabricated simple motors and old bicycles  
©NETFUND*

**Kenya ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994, and since then the country is obligated to periodically prepare and submit a National Communication as well as develop a Greenhouse Gas inventory system using the Intergovernmental Panel on Climate Change (IPCC) 2006 Greenhouse Gas Inventory guidelines.**

Under the Climate Change Act, 2016, a regulatory framework is provided to enhance response to climate change. The Act provides a mechanism and measures to achieve low carbon climate development, and for connected purposes. The Act mandates each state department and national government public entity to report on sectoral greenhouse gas emissions for the National inventory.

In Kenya, the first inventory of Greenhouse Gas (GHG) emissions was conducted during the First National Communications (FNC), published and submitted to the UNFCCC in October 2002. The initial National Communication GHG emissions were calculated in the following sectors: Energy, Land-Use Change and Forestry (LUCF), Agriculture, Industrial Processes and Waste.

A more compressive GHG inventory was prepared during the Second National Communication (SNC) that was submitted in December 2015. The GHG inventory in the SNC reported greenhouse gas emissions and removals by sinks for the year 2000, as well as additional years between 1995 and 2010.

Total CO<sub>2</sub> emissions for the year 2010 were estimated to be 48.4 megatons (Mt) without the contribution from Land Use, Land Use Change and Forestry (LULUCF). With the LULUCF sector, total CO<sub>2</sub> emissions rise to 69.5 Mt in 2010, an increase from 1995 of 25 Mt or 56 percent. Emission growth is primarily driven by increased demand for fossil fuels in the energy sector and by increased emissions in the LULUCF sector. Energy emissions grew at an average rate of 4.1 percent per year while LULUCF emissions grew at an average rate of 5.3 percent per year between 1995 and 2010.

National Communications from developing countries (non- annex 1) provide information on measures to mitigate and to facilitate adequate adaptation to climate change.

A national GHG inventory is a key element of the National Communication. Greenhouse gas inventories help countries to plan mitigation activities, project future emissions and identify sectors for emission reduction projects.

In the context of the UNFCCC, a GHG inventory is a comprehensive listing, by source, of annual GHG emissions and removals resulting directly from human activities. The inventory may estimate emissions and removals for one year or a number of years.

**A national GHG inventory is a key element of the National Communication**

Kenya's historical contribution is low, at 0.1 percent of the total global emissions, while the per capita emissions are less than 1.26 metric tons of carbon dioxide equivalent (MtCO<sub>2</sub>eq) compared to the global average of 7.58 MtCO<sub>2</sub>eq.

The country strives to be a newly industrialised middle-income country by 2030. This coupled with a growing population and economy with urbanisation is expected to increase GHG emissions. In this regard, the country has embraced a low emission and climate resilient development pathway. Kenya's Nationally Determined Contribution (NDC) aims at reducing its GHG emissions by 30 percent by 2030 against a business as usual (BAU) scenario of 143MtCO<sub>2</sub>eq.

Challenges associated with the reporting of GHG emissions in the country include; non-availability of quality data; inadequate legal communication and institutional arrangements and collaboration to facilitate a sustainable process of developing the Inventories, inadequate technical capacity to collect, document, collate and share activity data, carry out emission and or removal calculations, establishment of a robust archiving system to safeguard data

and enhance reliability and transparency of the inventory process.

Through the Low Emission Capacity Building Project (LECB), the country has made progress in building capacity for preparing GHG inventories that are consistent with the requirements of the IPCC guidelines that address the challenges identified in the Country's national communications.

In addition, the Low Emission and Climate Resilient Development (LECRD) Project is building on the activities of LECB Project and is supporting the development of the GHG inventory for the Third National Communication (TNC). As opposed to past processes, this inventory is being developed in close collaboration with stakeholders.

This has greatly improved data provision hence addressing the data gaps as well as improving the quality of the inventory. In addition, the LECRD Project is in the process of establishing a GHG unit at the Climate Change Directorate and is supporting the development of an online web-based data management system that helps store the collected data.

Subsequently, the Climate Change Act, 2016 requires the reporting of emissions regularly by institutions. The Climate Change Directorate is developing a regulation of reporting procedures that will ensure that data provision is better institutionalised and streamlined. The Country will embark on preparing its Third National Communication (TNC) in 2018 and submit it to UNFCCC by 2019.

**David Adegü**  
GHG Coordinator  
Climate Change Directorate  
Ministry of Environment and Natural Resources  
[adegubuluku@gmail.com](mailto:adegubuluku@gmail.com)

**Mercy W. Kamau**  
Low Emission and Climate Resilient Development (LECRD) Project  
[kamaumercy007@gmail.com](mailto:kamaumercy007@gmail.com)

# Transitioning to a Green Economy



Some of the NETFUND beneficiaries showcasing during the World Environment Day 2017 ©NETFUND

**The UNEP Green Economy Report defines a green economy as one that results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. It entails essentially a low-carbon, resource-efficient and socially-inclusive economy.**

Environmental challenges, such as the impact of climate change, loss of biodiversity, overuse of natural resources and environmental and health issues, are closely linked to poverty, the sustainability of ecosystems and resource security and political stability.

Kenya developed the National Environment Action Plan (NEAP) in 1994 to address these challenges. This led to the enactment of the Environmental Management and Coordination Act (EMCA 1999) and the EMCA Amendment Act No. 5 of 2015. EMCA created various institutions for the general management of the environment in Kenya, including the National Environment Trust Fund (NETFUND).

NETFUND is mandated to facilitate research intended to further the requirements of environmental management, capacity building, environmental awards, environmental publications, scholarships and grants.

The bottom-line is the promotion of self-regulation in environmental management. In this regard, NETFUND is implementing the Green Innovations Awards Programme (NETFUND GIA) which seeks to recognize and award best practices in environmental management.

The NETFUND GIA programme has supported initiatives that adopt the 7R (Reuse, Reduce, Recycle, Recover, Remove, Responsibility and Redefine) approach to both solid and liquid waste management.

Over and above the awards, NETFUND also seeks to promote the transformation of innovative green technologies and initiatives into successful green enterprises through its Incubation Centre

that implements a holistic incubation programme targeted at early stage green businesses that are either Micro, Small or Medium Enterprises (MSMEs). The NETFUND GIA Programme ensures a steady pipeline of projects for selection to the Incubation Centre.

The Incubation Centre provides a full range of services aimed at mitigating the various risks associated with early start-ups. The services include business development, legal advisory services, marketing, product development, provision of seed capital and linkages to markets and potential investors.

## Incubation Services Provided by NETFUND

1. Infrastructure
2. Development program
3. Legal services
4. Mentorship support
5. Product development
6. Marketing
7. Financial
8. Networking

Through the Incubation Centre, NETFUND provides a comprehensive customised service that addresses the basic skills required to run businesses, the creation of appropriate governance structures and capital requirements that enhance the survival prospects of the enterprises selected for Incubation.

The overall goal of the Incubation Centre is to support the development of 160 successful green enterprises by the year 2025. The incubation has already supported more than 70 green enterprises in the Country. In the next 9 years the Centre plans to admit about 373 businesses. Seventy percent of the businesses will be green Micro and Small Enterprises (MSEs) and 30 percent will be acceleration projects, which are Medium Enterprises.

The Incubation Centre will link 70 percent of the enterprises to investment

opportunities through exposure to suitable investors, creation of 480 Full Time Equivalent (FTE) jobs leading to the creation of at least 1,000 indirect jobs.

Projects with potential for business incubation receive support worth KSh 5 Million (USD 50,000) as technical and business support. Successful graduates of the incubation program may receive seed funding worth KSh 2 million (USD 20,000). The incubation program runs for a duration of 2-4 years and is delivered in three phases.

NETFUND identifies the innovators through call for innovations where application forms are distributed to different partners across the country. Media campaigns, government ministries, agencies, and private sector actors also help to reach innovators at the grassroots level.

The program has strategically supported the implementation of innovations and initiatives like Maa briquettes, Magiro Mini Hydro Power Plant, Eco Jiko, Green Biofuels and Home Health Solutions Ltd that address the energy demand in the country that, range from the use of energy efficient technologies at both industrial and household levels.

NETFUND also supports innovations that seek to improve the adoption of appropriate technologies in water purification (and desalination), water recycling, monitoring, distribution and use.

Additionally the institution supports sustainable exploitation, utilisation, management, and conservation of the environment and natural resources. This enables the country to move towards a resource efficient, low carbon and creation of green jobs.

More at: <http://www.netfund.go.ke/>

**Chrispine Omondi**  
Project Manager  
National Environment Trust Fund  
(NETFUND)  
[comondi@netfund.go.ke](mailto:comondi@netfund.go.ke)

# Global Energy Award Lauds Starehe's Green Initiative



Starehe Girls School students in a class session  
©Starehe Girls Centre Website

**Students from Starehe Girls High School have taken the mantle of championing environmental conservation among youth in the Country by promoting and adopting clean energy at the school.**

This year, the school won the Zayed Future Energy Prize 2017 in the Global High School Category for a proposed project to implement a rooftop photovoltaic system to supplement its electricity supply.

The Zayed Future Energy Prize is an annual award that celebrates achievements that reflect impact, innovation, long-term vision and leadership in renewable energy and sustainability. Since its inception, the award has created a growing community that is committed to finding solutions to challenges in energy security, environment and climate change.

Founded in 2005 to educate girls from underprivileged families, Starehe Girls School supports the students through charitable donations. It costs KSh 85,000 (USD 850) to educate one girl at the school. Through the project, savings in electricity will enable the school to support 10 more needy girls in 2018.

The school's high-energy bill of KSh 400,000 (USD 4,000) per month led a

group of 10 students and two former students to spearhead the project that once completed will reduce their energy costs by 70 percent (KSh 280,000).

As a way of giving back to the school, the alumnae heard about the Zayed Future Energy Prize and alerted their former Physics teacher, Anthony Mwai who showed great interest and thus began their journey with ten (10) girls to develop the proposal and to win the Global High School prize for Africa.

## Starehe Girls' School won the Zayed Future Energy Prize 2017 in the Global High School Category

The school has spent part of its KSh 10 Million (USD 100,000) to set up 94 solar Photovoltaic panels with a capacity of 29 kWh on the schools parking shed. They have also started to install 10 solar-powered streetlights and 4 solar heaters. Subsequently, the school plans to start a Cool Green Campaign every year to promote energy efficiency in learning institutions.

This will involve inviting neighbouring schools to learn from what they have done and to implement similar initiatives in their institutions.

*"We are helping to raise awareness on global warming in our communities and at the school. We want other schools to emulate our work in implementing clean energy,"* said Judy Wangui, who represented other students at the Award Ceremony that took place in Dubai, United Arab Emirates (UAE) earlier this year.

Starehe Girls School is not only contributing to the mitigation of climate change in Kenya but is also leading by example to other secondary schools in Kenya by delivering a sustainable future and acting as a benchmark for other schools.

More at Zayed Future Energy Prize: <http://www.zayedfutureenergyprize.com>

**Anthony Mwai**  
Starehe Girls School and Centre  
[info@starehegirlscentre.co.ke](mailto:info@starehegirlscentre.co.ke)



**Bio Alkanol Gel, a Kenyan innovation involving fermentation of waste fruit peelings converted into eco-friendly fuel for domestic use, won the Grand Final of the ClimateLaunchPad Award in Limassol, Cyprus on October 18, 2017.**

The innovation was among the 105 finalists drawn from 35 countries who pitched their ideas to a renowned jury

## Kenya Innovator Wins the ClimateLaunchPad Award

during the Global Grand Final. Bio Alkanol Gel made it to the top 15 before winning the Award during the final pitch, receiving 10,000 Euros and access to the Climate-KIC Accelerator.

Bio Alkanol, Clean Planet and Dach represented Kenya in Cyprus after emerging first, second and third respectively in the national finals on September 8, 2017. Developed by Boniface Jiveri and Dr. David Musyimi from Maseno University, Bio-Alkanol gel is a mixture of alkanol, cellulose and water.

ClimateLaunchpad is the world's largest green business idea competition. Its

mission is to unlock the world's cleantech potential that addresses climate change by offering new cleantech startups, training, coaching, and support.

The Kenya Climate Innovation Center's mission of empowering the private sector to deliver innovative climate change solutions dovetails well with Climate Launchpad's mission of supporting entrepreneurs globally to develop their ideas into great businesses, hence the Center's involvement in the Green Business Idea Competition.

**More at:** <http://climatelaunchpad.org/>

# Targeted Meteorological Data Supporting Decision Making Processes



KMD staff being trained on Automatic Weather Stations (AWS) ©Mercy Kamau

**Reliable and up-to-date weather and climate data and information is crucial for Kenya's effective response to climate change. In this regard, Automatic Weather Stations (AWS) enables measurements of weather related data from remote areas to provide valuable information for key sectors of the economy such as agriculture.**

The State Department of Agriculture (SDA) is currently implementing the Area Yield Index Insurance (AYII) Project under the National Kenya Agricultural Insurance and Risk Management (KAIRM) Programme in the ten counties of Uasin Gishu, Homabay, Transoia, Nakuru, Narok, Embu, Meru, Kwale, Bungoma and Migori.

Crop insurance will enable farmers to be more resilient to climate change challenges facing the country. Ultimately, this will improve on farmers adaptation strategies.

The Low Emissions and Climate Resilient Development (LECRD) Project supported the Kenya Meteorological Department (KMD) to set up 20 Automatic Weather Stations (AWS) in the 10 counties in Kenya.

The data generated by the AWS's will contribute towards availing real time weather information relevant to effective delivery of integrated Area Yield and Weather Index Insurance as a key strategy for climate change adaptation to aid communities' resilience to the weather and climate related catastrophes.

The AWS's are expected to increase data coverage in the ten counties, giving farmers and interested agricultural players the much-needed access to critical climate change data and allow them to adapt to it. The AWS's will enhance KMD's weather/climate observation network and quality of the county downscaled climate information to aid decision making in climate-sensitive sectors.

The AWS's were installed at strategic locations in the ten counties, identified during a thorough site identification survey process by KMD and LECRD Project staff.

The sites were identified to meet the World Meteorological Organization (WMO) standards. Other parameters considered during the survey included:

- Terrain
- Availability of GSM Network
- Flat ground cover
- Representativeness of a wide area in terms of climatology
- Devoid of any disaster risks
- Equipment security
- Site accessibility during all seasons

The AWS provides accurate precipitation, temperature, soil, humidity, wind speed and direction as well as solar radiation data, which is of paramount importance to all stakeholders using meteorological data. Using this information, farmers and agricultural players will make important key decisions to protect and improve on crop production, minimise losses and keep the cost of production low.

The real-time data from the 20 AWS will be transmitted automatically to a central server portal situated at the KMD headquarters. KMD will analyse, interpret the information, and publish it as a weather/climate bulletin.

KMD will then disseminate the published weather/climate bulletins on a monthly and quarterly basis to all County Directors of Meteorology (CDMs) and stakeholders. The CDMs seasonally hold Participatory Scenario Planning (PSP) workshops as an inclusive way of communicating seasonal climate information to communities and key players in the agricultural sector. One such communicated climate information is the early warning of an impending flood or drought.

Previously, communities ignored the warning of an impending flood or drought but with such warnings in recent times coming from the climate experts, losses have been minimised by farmers by either harvesting early or planting drought-tolerant crops. Pastoralists have also sold off their livestock to reduce livestock mortality that normally arises due to lack of pastures and water.

By availing the weather/climate information early, "Farmers and

pastoralists have made better-informed decisions in managing their vulnerabilities and risks," said Dr. Samwel Marigi, the Deputy Director, Climate Services, KMD. Government officers from other government departments access and utilise climate information for joint planning resulting in timely support for the communities.

*"With real-time data on weather information, farmers can now plan their field activities more effectively,"* explains Dr. Harun Warui, the National Project Manager, LECRD Project.

As the quantity of real-time data generated by the AWS grows over time, this information can be used to identify trends in crop production and gain a clearer picture of how crops respond to climate variations. For example, predictions can be made when maize and beans will flower, how insects behave and how crop diseases develop.

Farmers can also make informed choices on their livelihood activities and market price information. This kind of information will enhance farmer climate adaptive livelihood strategies.

The information provided through the weather/climate forecast bulletins in PSP workshop has helped to create the awareness of impacts of climate change in the communities. The government and key players have begun advocacy campaigns particularly focused on addressing the challenges of climate change.

Climate change is having negative adverse impacts on the food security situation in Kenya. The decision-making meteorological support system will therefore contribute to increasing farmers' resilience thereby improving Kenya's food security.

**Jepi Lentoijoni**  
Climate Resilient Officer –LECRD Project  
[jepi63@gmail.com](mailto:jepi63@gmail.com)

# Mainstreaming Climate Change into Policy, Planning and Budgeting Processes



**The transition to a low emission and climate resilient development pathway requires unprecedented levels of awareness, knowledge and skills. Policy makers, technical experts and government officers are faced with the challenge of enhancing their knowledge and competencies to: integrate adaptation and mitigation into sectoral policy cycles and implementation; develop skills to integrate climate resilience into planning; and develop sound project proposals to access climate finance.**

Notwithstanding the efforts put in place to address the capacity needs of the national and county governments in Kenya, there still exists capacity gaps in the public service to address challenges related to climate change.

To bridge the capacity gap, the Ministry of Environment and Natural Resources with support from the Low Emission and Climate Resilient Development (LECRD) Project developed a training program on *Climate Change Policy, Planning and Budgeting* at National and County-level.

This was done through a cross-sectoral, multi-stakeholder interactive process; led by technical experts at the Kenya School of Government, the Kenya Institute of Curriculum Development, and a wide range of experts in climate science, policy, planning, finance and knowledge management.

The 10-day program equips government officers with relevant knowledge, skills and attitude to mainstream climate change into national and sub-national policy, planning and budgetary process.

In June 2017, an inaugural training program was held in Nakuru County. The training targeted middle-level managers and technical cadres involved in policy formulation, planning, budgeting and implementation of programs across different sectors. Kenya School of Government certified subject matter experts facilitated the training of 30 officials from national government Ministries, Departments and Agencies and county governments.

The training program centred on case studies, sharing of experiences, field excursions and practical learning approaches like role-play and simulation. The participants were taken through four modules namely; Introduction to Climate Change, Mainstreaming Climate Change into National and County Planning Processes, Climate Change Financing and Budgeting and Climate Measurement, Reporting and Verification. A field trip was organized to the Nakuru County Metrological Department and the trainees participated in the World Environment Day activities at the Egerton University, Njoro.

The Cabinet Secretary, Ministry of Environment and Natural Resources launched the Program during the 2017

CS, Prof. Judi Wakhungu (Centre) during the launch of the Climate Change Training ©MENR

World Environment Day celebrations. She noted that, the program, the first of its kind in Africa, would form a significant contribution towards the implementation of the Climate Change Act 2016, as well as the Kenya's Nationally Determined Contribution (NDC).

Following successful completion, the participants agreed to put into practice what they had learnt by; climate proofing their County Integrated Development Plans (CIDPs), ensuring national priorities across all sectors are climate smart, mainstream adaptation and mitigation actions into policy formulation, planning and budgeting processes at national and county levels and developing proposals to attract funding for climate change response actions.

The Climate Change Policy, Planning and Budgeting at National and County level training program is now offered at Kenya School of Government and all public servants are eligible to undergo the training. It is envisioned that this programme will facilitate mainstreaming of climate change including entrenching core training for all public officers and including it in the performance contracts of all government institutions.

**Sheila Shefo Mbiru**  
Project Officer-Knowledge Management and Capacity Development  
LECRD Project  
[sheilambiru@gmail.com](mailto:sheilambiru@gmail.com)

This edition is produced as a joint effort between ALIN and the Ministry of Environment and Natural Resources (MENR) through the Low Emission and Climate Resilient Development (LECRD) Project. The Project is implemented by the Ministry of Environment and Natural Resources, with funding by USAID through UNDP.

This edition is supported by the LECRD Project. Articles from this edition of Joto Afrika may be re-used, provided the materials are distributed free of charge and the author(s) are credited. Please send copies to ALIN and LECRD.

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**Design & Layout**  
Francis Muchiri

**Guest Editor**  
Fatuma Hussein  
[fatuma.hussein@undp.org](mailto:fatuma.hussein@undp.org)

**Editorial Team**  
James Nguo- Chief Editor ALIN  
Bob Aston- Editorial Coordinator  
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**The Principal Secretary,**  
**Ministry of Environment and Natural Resources, State Dept of Environment**  
P. O. Box 30216-00100  
Nairobi, Kenya  
Email: [psoffice@environment.go.ke](mailto:psoffice@environment.go.ke)

**Arid Lands Information Network**  
P.O. BOX 10098-00100 G.P.O.  
Nairobi, Kenya  
**Tel:** +254 20 2731557  
**Email:** [jotoafrika@alin.net](mailto:jotoafrika@alin.net)  
[www.alin.net](http://www.alin.net)  
**ISSN 2075-5562**