



Roundtable discussion on research for the development of Kenya specific emission factors. Participants from Mazingira centre; ILRI, Climate Change Directorate, KALRO, and LECRD

Low Emission and Climate Resilient Development (LECRD) Project

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ABOUT THE PROJECT

The Low Emission and Climate Resilient Development (LECRD) Project
Contributing Towards Enhancing Kenya's Low Emission and Climate Resilient Development

PROJECT OBJECTIVES

1. To strengthen capacity for low emission development in Kenya.
2. To build national and county institutions' capacity to better coordinate climate change activities and finances.
3. To enhance decision making increased resilience to climate change impacts.
4. To promote climate smart technologies and business opportunities.

KEY RESULT AREAS

1. National Climate Change Coordination Process
2. Enhanced access to clean and efficient energy systems
3. National sustainable Greenhouse Gas Inventory in place
4. National and county decision making tools for climate change interventions improved.

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Comprehensive Approach towards Development and Management of the Greenhouse Gas (GHG) Inventory in Kenya

Through the support of the **Low Emission and Climate Resilient Development Programme**, Kenya has developed an institutional arrangement framework that will facilitate a systematic, standardized process for the collection, assessment and sharing of activity data for the GHG inventory. The project will fund the development of the GHG regulations, which will be gazetted to operationalize the framework.

The project is facilitating the development of both the National Greenhouse Gas Inventory, to be used in the Third National Communication to the UNFCCC, and a web based GHG database management system. The latter will safeguard data losses and provide a platform for efficient online data sharing and archiving. A stakeholder's inception workshop was held on 14th December 2016 to validate

the inception report on this activity. The project is also supporting a study, spearheaded by the Kenya Agricultural and Livestock Research Organization (KALRO), on analysis of emissions from manure in the country that should consequently inform on emission factors for the country. This will enable the country meet its ambition of higher tier reporting.

The project has facilitated two round table discussions in December 2016 and January 2017 for the planning of this research work. The roundtable discussions involved the Climate Change Directorate, the International Livestock Research Institute (ILRI) and KALRO. ILRI hosts the Mazingira centre that has several scientists with research experience in the field. ILRI will be providing capacity development support to KALRO. The Environment Protection Agency (EPA) will also provide additional technical back stopping to KALRO.

Draft National Green Building Standards and Certification Tool Stakeholder Meeting



The **LECRD project** is working with the Green Africa Foundation to finalize the development of a National Green Building Standards and Certification Tool in line with the Low Emission and Climate Resilient Development Project (LECRD's) fifth outcome on improving National and County Decision Making Tools for climate change interventions. To this end the project facilitated an inception workshop to finalize the standards which was held in Merica Hotel in Nakuru County from the 5th to 9th September 2016 bringing together the Technical Committee of Green Africa Foundation as well as other stakeholders

The objective of the workshop was to review the draft National Green Building Standards, the quality assurance methodologies and the draft Green Mark tool which would be used for certification. This stems from the fact that green buildings would help to reduce carbon emissions and improve energy, water and other resource efficiencies associated with new building construction and retrofitting of existing buildings. This process was to be done through a programmatic approach and in partnership with the Government through the relevant line ministries and statutory bodies, the private sector, academia and like-minded organizations. This would in turn assist to address market failures and major barriers in developing and implementing green buildings in Kenya.

The issues covered included the green building requirement categories and their characteristics which bordered on 7 key categories namely;

1. Sustainable sites and their development,
2. Energy efficiency,
3. Materials and resource efficiency
4. Water efficiency
5. Indoor environmental air quality
6. Operation and maintenance,
7. Management and innovation.

There were also discussions on the rating system and assessment criteria, the rating system tools and the green building rating guidelines as well as the green buildings basic requirements and the classification on the green building standards categorized into bronze, silver, gold, platinum and diamond ratings in ascending order.

The stakeholder engagement had representation from Ministry of Transport, Infrastructure Housing and Urban development under the State Department of Housing, Ministry of Health, Kenya Industrial Research and Development Institute (KIRDI), National Environment Management Authority (NEMA), Kenya Association of Manufacturers (KAM), Kenya Bureau of Standards (KEBS), Kenya Accreditation Services (KENAS), Architects Association of Kenya (AAK), Kenya

Institute of Curriculum Development (KICD), Jomo Kenyatta University of Agriculture and Technology (JKUAT), Private sector: Slum Dwellers International (SDI), Niko Green travels, Green Africa Foundation (GAF), Kenya Climate Change Working Group (KCCWG), Trine Architects, Neurotech limited and Archispace Architects.

The emerging issues on the discussions centered upon having classic examples of applicable and replicable green buildings in Kenya, how to deal with electronic waste to reduce environmental pollution, having user friendly and robust facilities that are for example earthquake resistant. There were also discussions simplify the standards for easy understanding by all, create awareness on green building standards, the need for wise use of water and energy resources. There were also discussions on mainstreaming green building standards into existing curriculum on climate change issues, promoting transformative research and having data on the emissions by the construction industry to build upon Kenya's Greenhouse Gas inventory.

CONTINUED;

RECOMMENDATIONS AND WAY FORWARD;

The recommendations coming out of the stakeholder engagement was to promote innovation on the side of green materials and technology through facilitation of strong research methods to help build upon an inventory on green building materials. It was also recommended to have incentives schemes to reward best practices in the Green Building arena. Another recommendation was on green finance mechanisms by finance institutions that tap into the climate change fund to promote green buildings and sensitize relevant government officers on the importance of green buildings. It was also suggested that enforcement of green building standards would be key in line with the development of a policy and training of assessors who would in turn implement the policy.

The way forward was to put the document into a final draft by incorporating comments from wider stakeholders, circulate to the technical committee members and have their comments, , hold a National validation workshop to get final comments then gear towards the final draft and development of supplementary standards.

National Renewable Energy Laboratories Support to the Government of Kenya in Identifying Public Sector Energy Efficiency Opportunities

The National Renewable Energy Laboratories (NREL), through the Low Emission and Climate Resilient Development (LECRD) Program is supporting the Government of Kenya in the identification of different opportunities that will contribute towards energy efficiency in government buildings. This initiative is in line with the country's NDC, which prioritizes Kenya's energy security. NREL through its technical team facilitated energy efficiency audit at the National Climate Change Resource Centre (NCCRC), the National Environmental Management Authority (NEMA) and Kenya Meteorological Department (KMD), with a view of providing recommendations on areas that can be improved. The team from NREL presented preliminary findings and recommendations to stakeholders from various government ministries and departments, as well as private sector. Following this energy audit, a white paper is being prepared on public sector energy efficiency opportunities. It will be used to advocate for measures that can be taken to reduce energy consumption within public sector buildings and abate greenhouse gases through avoidance of grid emissions.

Minimum Energy Performance Standards for Electrical Appliances in Kenya

Although improved technology has resulted in increased overall energy efficiency of electrical appliances, there are still many appliances on sale, which are less efficient. The Government of Kenya, through the Energy Regulatory Commission (ERC) developed the Minimum Energy Performance (MEP) Standards Regulations 2015; with the aim of improving household/industrial appliances energy efficiency through elimination of inefficient appliances in the market. Under the MEP standards regulations 2015, ERC will apply MEPs to six product classes; which are refrigerators, air conditioners, electric motors, fluorescent lamps, ballasts, and compact fluorescent lamps. The LECRD program, through a consultancy, is supporting the process of identifying three (3) additional MEP standards. The inception report outlines commonly used appliances and evaluation results of the impact of MEP standards implementation. During the inception workshop with stakeholders, there was consensus that MEPs be developed for television sets, computers and LEDs lamps. The report further provides an analysis of the annual consumption and possible energy savings with implementation of MEPS for three of the above appliances/equipment. Preliminary results indicate that the MEPs could result in the cumulative emission reduction of 531,550 tons over 10 years.



Figure 1 NREL Team at NEMA

Solar water heating training of trainers Workshop

The project supported a Training of Trainers (ToT) on Solar Water Heating design, installation and maintenance. The course was organized by the Institute of Energy and Environmental Technologies of Jomo Kenyatta University of Agriculture and Technology (JKUAT). The course addresses the challenge of lack of expertise to install and repair Solar Water Heating systems in the country.

Thirty (30) trainees participated in the two-week training that was held from 4th -17th September, 2016 at the Kenya Forestry Research Institute (KEFRI) retreat centre, Muguga. The trainees were from the ten (10) selected technical training institutes to be supported under the LECRD project. The trainees are senior level teaching staff in their respective institution mainly instructing in the electrical engineering, mechanical engineering and building departments.

Trainers from the National Industrial Training Authority (NITA), JKUAT, Energy Regulatory Commission (ERC) and Chloride Exide facilitated the sessions. The involvement of ERC and Chloride Exide in the training was commendable as the trainees got to learn from the firsthand experience of private sector and the regulator.

The training was conducted via lectures, practical sessions and field visits. Trainees got an opportunity to visit steel stone ltd, a local manufacturing plant in which they learned about the various solar water heating systems that exist.

A mid-term evaluation and a final assessment were carried out during the training. The qualified trainees will apply for licensing by the Energy Regulatory Commission (ERC) as per the Solar Water Heating Regulation 2012. The project will be distributing training kits for solar photovoltaic and solar water heating to the beneficiary TTIs that will be used for training. It is expected that the TTIs will develop short courses for both Solar PV and Solar Water Heating installation and repair. Currently six of the TTIs have developed solar PV training courses which they charge an average of Ksh 20000 for the two weeks. These TTIs are: Wote, KITI, Jeremiah Nyaga, Sigalagala, Nairobi technical and Ramogi Institute of Advanced Technology. It has also been recommended that a Solar Water Heating curriculum be developed for training on the same.

A detailed assessment was undertaken based on the criteria provided by KMD. Installation of AWSs will be done in the month of August and September 2016.

PHOTO GALLERY



Trainees during a site visit at Steel stone Ltd, Nairobi.



Dr. Kamau conducts a training lecture during the solar water heating training held 4th - 17th September



The project identified ten (10) select institutes to benefit from this support. The institutes include, Nairobi TTI, Wote TTI, Kaiboi TTI, Jeremiah Nyaga (formerly Rwika) TTI, Mombasa TTI, North Eastern TTI, Sigalagala TTI, Michuki TTI Kenya Industrial Training Institute and Ramogi Institute of Advance Technology

Mainstreaming Climate Change into National and County Policy, Planning and Budgetary Processes

Kenya recently passed into law a climate change act that defines mainstreaming as 'the integration of climate change actions into decision making and implementation of functions by the sector ministries, state corporations and county governments.' The Climate Change Act 2016 obligates the national and county governments to mainstream climate change responses into development planning, decision making and implementation. Mainstreaming climate change into national and county policy, planning and budgetary processes would greatly help to reduce vulnerability relating to climate change impacts, build resilience of communities and national activities facing climate impacts and ensure sustainable development through actions that are resource efficient and environmentally sustainable.

In response to this, the Ministry of Environment and Natural Resources Climate Change Directorate with support from the USAID supported Low Emission and Climate Resilient Development (LECRD) Project, the Kenya School of Government (KSG) and the Kenya Institute of Curriculum Development (KICD) designed and



Figure 2 Stakeholders keenly following the session during Mr. Mokaya's (KSG) presentation.

rich exchange of knowledge, expertise and experience that resulted in a robust curriculum that will contribute to climate change mainstreaming processes at national and county levels.

The ten (10) day course will be structured in 4 modules namely; Introduction to Climate Change, Climate Change Policies and Strategies, Climate Change Financing and Budgeting, Climate Change Monitoring, Evaluation, Reporting and Dissemination. The course will equip the county and national officials with the requisite knowledge, skills and attitude to mainstream climate change in development planning, decision making and implementation in line with the Climate Change Act 2016 and to support the National Climate Change Action Plan.

Based on the curriculum, a training manual was developed through highly interactive knowledge sharing and peer review sessions and technical review with subject matter experts to ensure a robust and comprehensive manual was developed.

The Kenya School of Government will formally roll out the training programme with support from the LECRD project and will be conducted in 6 regional clusters to cover the 47 counties.

developed a short course to mainstream climate change into national and county policy, planning and budgetary processes. The course will be offered through the Kenya School Government to county and national government officials.

The curriculum development process began with a wide range of stakeholder engagements with climate change, policy, finance and communication experts drawn from the Kenya School of Government, Kenya Institute of Curriculum Development, Ministry of Devolution and Planning, National Treasury.

University of Nairobi - Institute of Climate Change Adaptation, Kenya Metrological Department, National Youth Green Growth Secretariat, Care International and Ministry of Environment and Natural Resources among others. This approach allowed for

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