NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

Clean Development Mechanism

A Tool for Addressing Climate Change

Our Environment, Our Life, Our Responsibility

CLIMATE CHANGE: SO WHAT?

What is climate?

Climate is the average weather conditions of a given location observed over a period of time (at least 30 years)

Climate Change –what is it?

This is a permanent shift in the traditional patterns of climate, outside the normal range of natural climate variability. It is a change in climatic conditions of a place due to abnormal weather patterns.

Why is climate changing?

This is due to natural causes as well as human activities. Human activities include; cutting down of trees, burning of tyres, fossil fuels, motor vehicle and industrial emissions among others. These lead to release of Greenhouse gases (GHGs) into the atmosphere. Other causes are; overgrazing, poor waste management, poor farming methods, poor land use practices, degradation and destruction of wetlands, poor industrial production

Practices that emit pollutants into the air, soil and water, harmful emissions from electronic equipment.

GREENHOUSE GASES (GHGs):

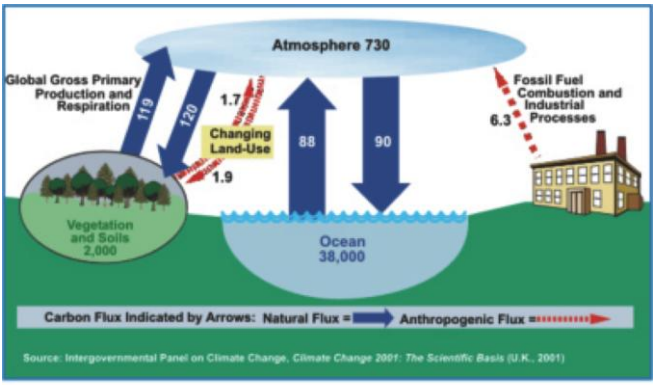
What are they?

These are gases that occur naturally in the atmosphere. They include Carbon Dioxide (CO2), Methane (CH4) Nitrous Oxide (N2O) chlorofluorocarbons (CFCs), Sulphur Hexafluoride (SF6), and Oxides of Sulphur.

They trap the sun's heat like the plastic sheeting used in making the huge flower-growing green-houses in Naivasha. The sun makes it hot inside and stops most of the heat from escaping. Green-house gases work in the same way. The GHGs keep the Earth at the right habitable temperature. Without the gases, the Earth would be too cold for survival. Too much of these gases in the atmosphere prevent the heat from the surface of the Earth being released back into space.

It is like being in a taxi on a hot day with the windows closed. The sun heats up the passengers but there's no way to cool down!

The commonly known greenhouse gas is Carbon Dioxide (CO2). A lot of CO2 is released into the atmosphere whenever fossil fuel is burned. Example can be drawn from factories, power stations, vehicles and aeroplanes and the burning of wood.



Methane is 21 times stronger as a greenhouse gas than Carbon Dioxide. It is produced from the decomposition of animals and human waste. It is released into the atmosphere from manure, rotting food and plant waste in rubbish dumps. When wetlands are drained a lot of Methane is also released.

Nitrous Oxide is released by fertilizers used in crop production. The gradual increase in the concentration of these gases (GHGs) in the atmosphere causes global warming which results in climate change.

What is global warming?

This is the increase in the average atmospheric temperatures. The GHGs form a thin film in the atmosphere preventing free exchange of heat with the net effect of heat accumulating in the lower layer hence global warming.

What Are the Impacts of Climate Change?

Impacts of climate change include: floods, landslides, drought and desertification. These results in food and water scarcity, displacement of people, spread of diseases causing vectors (rift valley fever, highland malaria, cholera), coral bleaching, melting of glaciers leading to rise in sea level, variability in rainfall patterns, loss of biological diversity, increased resource use conflict, environmental migrants.

What is adaptation to climate change?

These are actions aimed at enhancing the coping mechanism to climate change effects which can not be mitigated thus reducing the magnitude of negative effects. These measures include: prevention, tolerance, resilience, change of land use practices and relocation.

What is climate change mitigation?

This is the actions aimed at minimizing the magnitude of anticipated negative effects of climate change.

They include tree planting, improved trees species, early maturing and drought tolerant crops, planting of indigenous crops, use of fossils fuels more efficiently, switching to renewable energy (solar and wind energy) improving the insulation promote rain water harvesting as well as storage technologies and practices

What are climate change coping mechanisms?

Water sector

Enhance water harvesting (roof catchment, dams, pans) and recycling of waste water, embrace appropriate and cost - effective technologies in water use and management.

Agriculture sector

Planting of drought tolerant crops, keeping drought tolerant livestock breeds, use of integrated pest management technologies. Good farming practices, Providing livestock and farm insurance schemes, Promoting orphan crops – sorghum, millet, cassava, pigeon peas, sweet potatoes, arrow roots, yams, groundnuts, Post-harvest processing of farm harvests and value addition,

Forest Sector

Afforestation and re-afforestation, embrace planned land use changes, proper forestry activities and policies.

Health Sector

Strengthen health sector to tackle climate change related diseases, intensify public health campaign, maintain of public health infrastructure for cost effectiveness and adaptation to climate change, and promote collaboration between public and private partnerships aimed at enhancing adaptive capacity of local community, embrace general disease surveillance using ecosystem indicators, enhanced public awareness campaigns and participation. Provision of affordable, accessible and acceptable health care services.

Industrial Sector

Practicing clean production in the industrial sector, use of renewable clean energy such as solar, wind, geothermal, biogas, hydropower plants. This is known as green energy (use of non-motorized transport such as bicycles, electric cars and energy saving bulbs).

Other coping mechanisms include use of indigenous knowledge and practices, liquid and solid waste management (tapping clean energy such as biogas from livestock, municipal waste etc).

Enhancement of early warning and response system, disaster preparedness and management, environmental awareness and rising public education and mainstreaming of climate change in institutional curricula and policies.

CLEAN DEVELOPMENT MECHANISM (CDM)

What is CDM?

This is an agreed framework under the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC) to assist developing countries to achieve sustainable development while industrialized countries are required to comply with their GHGs emissions reduction commitments.

As such CDM targets projects whose activities reduce GHG emissions and also those that enhance carbon storage (sequestration) implemented in developing countries.

BENEFITS OF CDM

Several benefits can be derived from CDM project activities cutting across economic, social and environmental sectors. These include:

i. Contribution to the realization of Kenya vision 2030 through low carbon initiatives and green growth.

ii. Enhancing capacity of institutions and local communities in project imple mentation and monitoring.

iii. Promoting technology development, dissemination and transfer.

iv. Promoting public private partnership in the management of natural resources.

v. Promoting the adoption of clean production technologies leading to reduced GHG emissions.

vi. Poverty alleviation through employment creation and income generation.

vii. Diversification and development of renewable clean energy sources.

viii. Enhancing sustainable development through wise use of natural resources

ix. Providing additional revenue generation and enhanced foreign investments.

x. Promoting the collection of methane gas from wastes in the environment which would otherwise be released into the atmosphere as a GHG.

xi. Use of methane gas as an alternative clean energy source.

xii. Promoting a cleaner and healthier environment.

GUIDELINES FOR CDM PROJECTS

The CDM Executive Board formulated guidelines which CDM projects shall comply to. These guidelines have been domesticated locally to embrace country priorities and policies.

The CDM projects shall:

i. Demonstrate firm and tangible contribution to sustainable development guided by economic, social and environmental pillars.
ii. Be supportive to and consistent with national development strategies, existing environmental management Regulations and Sectoral Laws as well as Kenya Vision 2030 development blueprint.
iii. Transfer of technologies that are locally appropriate and environmentally friendly.

iv. Contribute to the improvement of national, institutional and human capacity building
v. Contribute to global efforts to achieve stabilization of greenhouse gas concentrations in the atmosphere.
vi. Address community needs and priorities through effective public participation.
vii. Have financial inflows from the project over and above the existing Official Development Assistance (ODA).
viii. Show consistency with the objectives of other Multi-lateral Environmental Agreements as well as EMCA, 1999.

CDM POTENTIAL OPPORTUNITY AREAS

i. Forestry and Land use sectors- Reduction in Emission from Land Degradation and Deforestation (REDD) Strategy. Kenya Forest Service (KFS) is the focal point for REDD.

ii. Improving Energy Efficiency, (e.g. Improved kilns and stoves). The Kenya Energy Generating Company (KENGEN) is the lead agency.

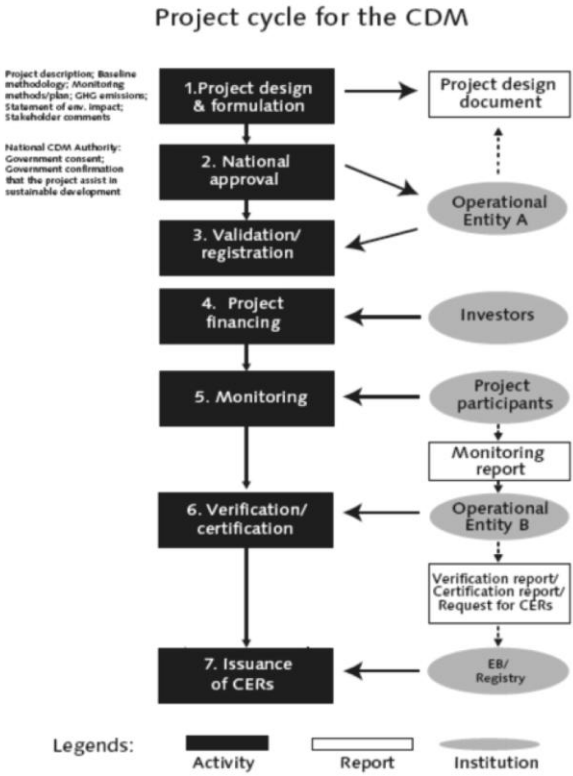
iii. Promotion of Biogas technology. (KENGEN, Ministry of Agriculture (MoA) and Ministry of Industrialization).

iv. Establishment of sanitary landfills. (Local Authorities and NEMA).

v. Opportunities for training and registration as CDM project validator under the CDM Executive Board.

Challenges to CDM development and implementation in Kenya

i. Inadequate awareness and relevant information on CDM.
ii. Lack of policies and Regulations specific to CDM and Carbon trading.
iii. Inadequate local technical capacity to develop, validate and implement CDM projects.
iv. UNFCCC has few registered CDM Validation Experts (Designated Operational Entity) leading to delays in project validation and registration.
v. No clear sectoral roles on carbon trading.
vi. Lengthy CDM registration process.
vii. High project development costs.



The CDM project cycle as shown on the figure has seven basic stages: project design and formulation, national approval, validation and registration, project finance, monitoring, verification/certification and issuance of CERs. The first four are performed prior to the implementation of the project, while the latter three are performed during the lifetime of the project.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