TABLE OF CONTENTS

INTRODUCTION ........................................................................................................... 3
1.1 Highlights on Green Economy ................................................................... 3
2.0 THE ROLE OF THE MINISTRY OF ENVIRONMENT & MINERAL RESOURCES IN SUPPORTING AND STRENGTHENING GREEN ECONOMY IN KENYA ................................................................................. 5
3.0 HIGHLIGHTS OF GREEN INITIATIVES ACROSS MAJOR SECTORS ..9
Standards supporting green economy ................................................................. 12
4.0 KEY POLICIES SUPPORTING GREEN ECONOMY ........................... 15
5.0 UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT (UNCSD), RIO+20 GUIDELINES ON GREEN ECONOMY POLICIES ................................................................................................................. 16
INTRODUCTION

1.1 Highlights on Green Economy

Green economy encompasses all activities or actions that help reduce carbon emissions into the atmosphere which is a major component of greenhouse gases that enhances global warming thus causing climate change. Further, green economy upholds the efficient use of natural resources and energy while enabling economic growth that supports creation of job opportunities and improvement of livelihoods thus alleviating poverty. It is only under these conditions that sustainable development can prevail.

The booklet provides an analysis of existing green initiatives across various sectors contributing to Green Economy. It is important to note that Kenya has made tremendous efforts in promoting green initiatives through targeted investments in both private and public sectors. As such, major milestones have been attained largely in the areas of renewable energy resources, agriculture, water harvesting, environmental legislation, sound waste management through recycling efforts and waste water treatment among others.

In addition, the industrial sector has embraced cleaner production technologies aimed at enhancing efficiency in the use of natural resources and energy while minimizing waste generation at source.

Green economy advocates for activities or actions that reduce carbon dioxide emissions into the atmosphere, the efficient use of natural resources for sustainable development and creation of job opportunities to alleviate poverty.

Green Economy deviates from past economic growth which has been largely driven by energy obtained from the combustion of fossil fuels. The use of fossil fuels results in emissions of greenhouse gases especially carbon dioxide into the atmosphere thus increasing global warming. This economic growth described as “brown economy” has led to the over-exploitation, depletion and degradation of natural capital namely, natural resources and ecosystem goods and services. This has caused widespread environmental degradation without allowing adequate time for regeneration of the natural resource capital base.

Green Economy therefore provides the best eco-friendly option to ensure future sustainability. The transition to green economy places more emphasis on reducing carbon
emissions, use of clean renewable energy and creation of green jobs to alleviate poverty. Further, green economy takes cognizance of the sustainability of the natural resource base. The attainment requires the adoption of green initiatives, deliberate investments in cleaner production technologies and compliance to environmental regulations.

The above interventions are collectively expected to create a positive impact for environmental management and economic growth thus attaining a green economy. There is need for the formulation of modern and responsive fiscal measures as well as policy reforms and frameworks as pillars to support green economy.

1.2 Does Kenya have a Green Economy?

Kenya like other countries in the world has been implementing sustainable development and embracing eco-friendly technologies. In order to enhance efficiency in the use of natural resources and energy, the industrial sector has embraced cleaner production technologies through technical assistance by the Kenya National Cleaner Production Centre. The Centre has build capacity of industries in improving efficiency in the status of production systems/equipments in order to reduce wastage of raw materials and energy aimed at minimizing waste generation at source. In Kenya, green initiatives are spread across public and private sectors of the economy. It is therefore important that green economy be embraced at all levels aimed at reducing individual carbon foot prints in order to uphold sustainability.
2.0 THE ROLE OF THE MINISTRY OF ENVIRONEMNT & MINERAL RESOURCES IN SUPPORTING AND STRENGTHENING GREEN ECONOMY IN KENYA

The Ministry of Environment and Mineral Resources is the official policy organ of the Government of Kenya for the management and conservation of the environment and natural resources. In this regard, the Ministry is expected to formulate policies, standards and procedures to support the implementation of sustainable development. Further, the Ministry is the link to internal Multi-lateral Environmental Agreements (MEAs) to which Kenya is Party thus providing modalities for domestication and negotiations.

2.1 Structures of the Ministry of Environment & Mineral Resources

The Ministry has created the necessary structures to facilitate the delivery of its mandate. It comprises one Parastatal and three key Departments. These include: National Environment Management Authority (NEMA), Kenya Meteorological Department (KMD), Department of Remote Sensing & Resources Surveys (DRSRS) and Mines & Geological Department. A summary of the roles and functions of the branches is provided below:

i) National Environment Management Authority

The National Environmental Management Authority is the Principal agency of government for the implementation of all policies related to the environment. The Authority implements environmental legislation including the Environmental Management & Coordination Act (EMCA, 1999) and relevant regulations. The environmental legislation stipulates standards and procedures for handling various types of waste in order to reduce environmental pollution. The Authority sensitizes and builds capacity of the regulated community aimed at enhancing their compliance and receives feedback on the implementation of the laws. The Authority has put in place an elaborate mechanism for enforcement of environmental laws and initiates prosecution of environmental offenders in collaboration with relevant arms of government.

Further, NEMA is the focal point for various MEAs thus spearheading their implementation of agreed decisions, domestication and negotiations. For instance, NEMA is the Designated National Authority (DNA) to undertake evaluation and approval of eligible projects for Clean Development Mechanism (CDM) funding in Kenya.

In addition, NEMA has been accredited as the National Implementation Entity (NIE) to access funding from the Adaptation Fund to support adaptation of related activities that mitigate adverse effects of climate change. The Adaptation Fund was established to finance concrete adaptation projects and programmes in developing countries, least developed countries and Island states that are parties to the UNFCCC. The Authority will now be able to receive environmental project proposals from other sectors, evaluate, fund and monitor their implementation.

The Authority also coordinates the environmental action planning in the country aimed prioritizing implementation of key interventions by various sectors. The process formulates
a five year National Environmental Action Plan (NEAP). In addition, the status of the environment at any given time is documented through the annual State of Environment Reporting.

ii) Kenya Meteorological Department

The Kenya Meteorological Department (KMD) facilitates access and interpretation of meteorological data, information and related services. This provides an opportunity to infuse scientific knowledge to spur socio-economic growth and development. In this regard, KMD provides meteorological and climatological services to support operations of key sectors such as agriculture, forestry, water resource management, civil aviation and maritime navigation among others.

The private sector also benefits from meteorological services for efficient operations of industry, commerce and public utilities to promote sustainable exploitation and utilization of natural resources. In this regard the department has invested in modern equipment for collection, analysis and interpretation, prediction of anticipated weather patterns contributing to climate change.

Kenya Meteorological Department plays a key role in supporting the needs of each sector to adapt to the adverse effects of climate change through dissemination of sector specific simplified information. For instance, the agriculture sector benefits from weather information especially the amounts and time of expected rainfall and appropriate planting time by the farmers. This ensures better yields and coping mechanisms to abate environmental disasters.

Further, the information is disseminated to the public as early warning to impending environmental disasters through the introduction of vernacular local radio stations. Some of the common disasters include: floods, droughts, landslides and tsunamis among others.

The Department has established stations in Nairobi and on Mt. Kenya to monitor levels of air pollution and advice on level of emissions of green house gases. Other equipments have been installed in Nairobi and Mombasa to measure air pollution from vehicular emissions. The cities have a high human population and hence are highly susceptible to air pollution.

The availability of this information has alleviated potential risks to human lives and damage to property thus improving the state of disaster preparedness to prone areas.

iii) Department of Resource Surveys and Remote Sensing

The Department of Resource Surveys & Remote Sensing (DRSRS) is mandated to undertake natural resources mapping using remote sensing techniques. In this regard, DRSRS undertakes collection, analysis, manipulation into resource maps and storage of natural resource database. The information on natural resources is crucial for demonstrating distribution, quantities and trends of resources to support informed decision making and policy formulation. The updating and dissemination of geo-spatial information on natural resources has supported conservation, development plans and the sustainable use of the same by relevant sectors.
The mapping covers various ecosystems and resources such as forests, crop forecasting, livestock and wildlife resources, water catchment areas, waste dumping area, land use patterns, settlements, rivers and dams among others. This information guides the country’s economic planning and ensuring our resources are utilized sustainably.

iv) Mines and Geological Department

The Mines and Geology Department is mandated to carry out geological survey, prospecting and research on mineral resources in the country. The Department maintains a database of geo-scientific information, administration of legislation relating to mineral resource development, policy formulation on mining and provide advice to Government on mineral resources, supervise quarrying activities, safety and security of commercial explosives.

Mines and Geological department advises miners to rehabilitate disused mines and construct strong supports for active mines to prevent collapsing. Some of the rehabilitated mines include: Kinango lead mines, zinc and silver mines in Kilifi County and parts of Macalder copper and gold mines. Rehabilitation of disused mines is expected to seal off the exposed mineralized surface which might release dangerous greenhouse gases to the atmosphere thus increasing global warming. This intervention favours the strengthening of green economy and sustainable mining.

2.2 Key Activities & Programmes

The Ministry has undertaken key programmes across its branches to promote environmental protection and conservation. Some of the major programmes include;

i) Awareness creation and public sensitization on the value of the environment as a resources and its conservation.

ii) Participation in Conference of Parties to various MEAs representing the interests of Kenya in specific aspects of agreement.

iii) The Ministry has formulated and published a National Climate Change Response Strategy to guide all sectors in mitigating, adapting and coping with effects of climate change. In this regard, the Ministry is spearheading the implementation of the Strategy to ensure the proposed interventions are adopted by the relevant sectors. The implementation of the Strategy will enhance resilience to adverse effects of climate change and ensure programmes and projects become “climate proof”. Further, an implementation plan for various sectors has been developed to action the strategy.

iv) The Ministry is undertaking review of EMCA 1999 in-line with the Constitution of Kenya and also enable the capturing of emerging environmental issues such as climate change and related environmental disasters, invasive species, strengthening institutional framework for sound environmental management and promoting green economy initiatives by various players.

v) The School Green Initiative is a major programme coordinated by the Ministry in collaboration with Ministry of Education. The programme is encouraging tree planting in schools since the learning institutions own land and the student population guarantees high survival rates of the trees. Through the “adopt a tree initiative”
pupils and students are encouraged to adopt and care for a tree during their schooling period thus enhancing survival and increase in forest cover.

The key programmes are jointly implemented by the various branches of the Ministry across the country. The Ministry of Environment & Mineral Resources is therefore promoting green economy through its mandate and programmes which is supplemented by interventions of other sectors as documented below.
3.0 HIGHLIGHTS OF GREEN INITIATIVES ACROSS MAJOR SECTORS

In order to achieve a green economy, both public and private sector have to play a leading role in strengthening green initiatives. These collective interventions will reduce carbon emissions to the atmosphere thus mitigating levels of greenhouse gases and subsequently reduce global warming.

The variation of weather patterns experienced in recent decades has been as a result of global warming causing climate change. In this regard, both public and private sectors must make deliberate efforts to invest in technologies, structures and policies to support green economy. An analysis for the role of each sector is provided below.

3.1 The Public Sector

Energy Sector
The sector has undergone massive transformation in the generation of green energy. Green initiatives in the energy sector include: geothermal power production, solar energy, biogas energy, power production from the sugar processing sector among others. There has been deliberate investment by government in collaboration with partners in exploration and drilling of geothermal energy spearheaded by the Geothermal Development Company with the capacity to meet all domestic and industrial needs including those of neighboring countries when fully exploited.

Investment in wind energy generation has gained currency. For instance, the Turkana Wind Farm launched in March, 2012 is currently the largest such facility in Africa comprising of 365 wind turbines to be erected near Lake Turkana with a capacity of 300 MW when fully operational. The generation of wind energy is dependent on wind speed. The Turkana Wind Farm will be driven by an average wind speed of about 11 metres per second according to available records. The production of the first 50 MW is expected to start in mid 2014 and reach full capacity by 2015 and enhance connection to the national grid. Other small scale wind farms have been established in Ngong Hills and Isiolo regions.

Similarly, major milestones have been achieved and impressive progress in solar energy generation. This initiative has penetrated into domestic levels through the production a wide range of household appliances to meet the needs of local communities.
Green technologies for renewable energy generation from geothermal, solar and wind sources.

Although the country has largely relied on hydro-electric power generation for many decades, water levels in dams due to prolonged droughts as a result of climate change has adversely affected power generation leading rationing and power outages. The adoption of green initiatives in the energy sector is an important intervention as the country strives to become an emerging economy by 2030.

On the other hand, biogas production has been promoted at household levels using manure. Farmers keeping as few as two zero grazing cattle are able to generate enough power to meet the cooking and lighting needs. Biogas generation is also undertaken at commercial levels.
Green Initiatives in Environment sector

The Kenya Meteorological Department (KMD) provides, collects and generates data and information to support weather services. The department undertakes projections and prediction of weather patterns which has varying adverse effects on different sectors. The department has installed state of art equipments and technology in weather data collection, analysis/interpretation and manipulations and projections at near real time status.

In this regard, KMD has disseminated early warning and specific data and information to all sectors and the general public aimed at mitigating the adverse effects of climate change. The results are efficiently disseminated for application by relevant agencies and the general public. Dissemination of information is further aided by installation of vernacular FM stations in disaster prone areas susceptible to flooding and landslides such as Bundalang’i and Muran’ga respectively.

The Kenya Forest Services (KFS) is spearheading reforestation programmes aimed at enhancing forest cover in the country. Forests provide natural purification system by absorbing carbon dioxide from the atmosphere serving as a carbon sink and releasing oxygen. The internationally recommended forest cover is 10% of the territorial surface area of any country. Although massive effort in tree planting and re-afforestation have been put in place, the forest cover in Kenya is barely 4% and still below the recommended level.

In this regard, KFS has established Community Forest Association aimed at promoting community involvement in forest management and ownership. Through these initiative KFS oversees registration of agencies and community projects to benefit from carbon credits. KFS has also introduced technologies for processing forest produce aimed at value addition. The registration of Charcoal Producer Associations and individuals has enhanced awareness on the use of different types of charcoal production technologies based on matching tree
planting efforts. The institution is involved in alternative green energy programmes across all levels to minimize use of wood fuel and subsequently reduce pressure on forest resources.

The **Kenya Forestry Research Institute (KEFRI)** is spearheading forestry research aimed at improving tree varieties that are fast growing and drought resistant. Research based on forest pathology is helping the country to control diseases that can wipe out forest stands. The carbonization of sugarcane, bagasse, saw dust, coffee and rice husks has transformed the production of charcoal by generating smokeless briquettes.

KEFRI has also developed a technology on on-farm power saw aimed at increasing efficiency in timber recovery from 30% to 56%. Through this innovation, it is now possible to produce high quality timber and less saw dust resulting to higher economic returns to farmers. This has in turn contributed to reduction in cutting of trees.

The **Mines & Geological Department** is spearheading exploration and mapping of mineral resources in the country. The department advises the government on mineral resources that have economic value to support exploitation. The aggressive exploration efforts are quickly transforming the economy of Kenya from agricultural to mineral based thus strengthening the Gross Domestic Product (GDP) thus alleviating poverty. The department is responsible for mining and follow-up on the rehabilitation of abandoned sites hence transforming them to near original state.

The **Kenya Wildlife Service (KWS)** protects wildlife resources in natural habitats in national parks and reserves. Through community based partnerships, KWS has enhanced benefits to local communities in proximity to protected areas. Eco-tourism has been promoted making communities to earn from wildlife conservation.

**Standards supporting green economy**

The **Kenya Bureau of Standards (KEBS)** is mandated to develop and enforce the standards of industrial products in order to achieve production of goods and services that meet global demands. This enhances quality of Kenyan Products and improves access to both local and international markets. KEBS has initiated a five year programme designed to remove barriers to market transformation of energy efficient products and services in Kenya. These standards have been replicated in four countries in the East African Community (EAC) namely; Burundi, Rwanda, Tanzania and Uganda. The goal of the programme is to reduce carbon emissions in the EAC Region by improving energy efficiency of selected appliances and equipment in residential, commercial and industrial sectors.

**Green Initiatives in the Industrial Sector**

The **Ministry of Industrialization** is spearheading innovation and green initiatives at all levels. The informal sector (Jua kali) is making equipment for house use such as the energy saving stoves and **jikos** for use by local communities. The Kenya Green Initiative is making briquettes from rice husks. In addition, the water hyacinth weed is being used to make mats, baskets and furniture. When harvested, the water hyacinth also been used to makes manure.

The **Kenya National Cleaner Production Centre (KNCPC)** promotes cleaner production technologies that enhance the efficient use of raw materials, water and energy resources,
Green Initiatives in Transport Sector

The Transport Sector has not been ignored in the adoption of green initiatives. The on-going expansion of roads is a major achievement in adopting green initiatives. The expansion is not only improving the efficiency of transport but also reducing carbon emissions through de-congestion of heavy vehicular traffic. It is important to note that vehicular exhaust emissions are rich in carbon dioxide which is a major component of green house gases that contributes to global warming. The improved roads will therefore enhance fuel combustion through increased speed of vehicles and smooth movement. Further, the government is planning to phase out the fourteen seater matatus and embrace the larger capacity mini-buses aimed at increasing commuter capacity and efficiency all geared towards reduction of carbon emissions.

Green Initiatives in the Housing Sector

The Housing Sector has made major milestones in embracing green initiative leading to green buildings with modern structures and technologies. These efforts are aimed at adapting to adverse effects of climate change and ensure climate proof buildings and infrastructure. In this regard, Real Estate Developers have been encouraged to fit up-coming real estate projects with eco-friendly technologies that will enable solid waste segregation, waste water treatment and recycling, solar heating and harvesting of rain water from roof catchment among others. This is aimed at safeguarding over-exploitation of natural capital resource base and promotion of sustainable development.

3.2 The Private Sector

The Private Sector is also partnering with government in undertaking various environmental activities. The government is encouraging participation of private sector in embracing green initiatives. This is aimed promoting corporate responsibility in supporting waste management through recycling technologies.

In addressing the reduction of flimsy plastics in the environment, the Authority has banned the production of below 30 microns plastic and raised the standards to 60 micron in line with the Plastics Bill under the East African Community standards. In this regard, NEMA is encouraging supermarket chains to adopt alternative packing materials that are eco-friendly.

For instance, the Nakumatt Holdings Ltd is ahead of the pack of other supermarkets in responding to the efforts to reduce the use of flimsy plastics by developing reusable bags which the Company is selling at reduced cost to the customers under the Project Think Green, Go Blue. The supermarket has also embraced the use of cartons for packaging household goods which is biodegradable. Through this initiative, customers are encouraged to avoid use of plastic bags and has also distributed over 250,000 bags to its loyal customers for free.
The Company has put in place an incentive programme to all Smart shoppers by rewarding them with two extra smart points on their Nakumatt smartcard every time a shopper returns a used carrier bag for shopping. Further, the supermarket chain has distributed over 200 litter bins within Nairobi in an effort to promote waste collection and disposal aimed at improving cleanliness and better quality of environment.

NEMA appreciates the efforts by Nakumatt Holdings Ltd and urges other supermarkets to embrace appropriate and diverse incentive packages in order to promote call back systems and enhance the quality of the environment.

NEMA calls upon all Kenyans to reduce our own carbon footprints and contribute to green initiatives. Join us at any of the announced WED venues and be part of the green solutions.

**The Role of the Private Sector**

i) Invest in appropriate eco-technologies relevant to their operations. This will enhance cleaner production technologies aimed at enhancing optimal operations, efficient use of raw materials and energy in order to produce green products.

ii) Support environmental activities through their corporate social responsibility programmes in order to contribute to sound environmental management and giving back to nature and greening CSRs. The private sector is therefore encouraged to enhance budget allocations for environmental activities.

iii) Comply with environmental standards as stipulated in various environmental regulations

iv) Implementation environmental management plans as stipulated in the project documents.
4.0 KEY POLICIES SUPPORTING GREEN ECONOMY

Green Economy advocates for efficient use of natural resources while initiating green initiatives that can lead to creation of jobs to create employment and alleviate poverty. In this regard, the Government has put in place progressive policies that support various sectors to collectively implement actions and interventions that address poverty alleviation thus laying foundation to a sustainable future.

For instance, the Economic Stimulus Programme (ESP) was recently formulated and implemented to catalyze activities that spur economic growth. This was as a response to the existing global financial meltdown. The ESP has so far provided support for projects at all levels mainly in fish farming, poultry keeping, bee keeping, dairy farming and tree planting among others.

The Youth Enterprise Fund on the other hand has supported the youth to initiate projects and expand existing efforts thus creating employment. In addition, the Women Enterprise Fund has also created micro-financing for women groups thus creating economic power for women and creating a positive impact to the livelihoods of many families. Similarly, the Poverty Eradication Fund has also been applied in creating socio-economic development of the country. Within the Livestock Sector, the *Njaa Marufuku Kenya Initiative* was introduced to support registered groups to engage in livestock raring and enhance their livelihoods. All these policies have transformed the lives of many Kenyan people through expansion of economic activities, job creation and improved livelihoods.
5.0 UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT (UNCSD), RIO+20 GUIDELINES ON GREEN ECONOMY POLICIES

Moving towards a green economy has the potential to achieve sustainable development and eradicate poverty with speed and effectiveness. However, climate change being one of the greatest challenges facing our country requires that all sectors participate in reversing the trend of increasing global greenhouse gas emissions. The climate policy recognizes issues on climate as top priority and that if emissions of carbon dioxide and other greenhouse gases are not curbed, there occurs serious repercussions. There is need therefore to promote green initiatives aimed at reducing these emissions and achieving climate goals that have been set. In Rio + 20 on attaining a green economy in the context of sustainable development and poverty eradication, several resolutions were adopted. These are:

• Different approaches, visions, models and tools are available to each country, in accordance with its national circumstances and priorities, to achieve sustainable development in its three dimensions which is an overarching goal. In this regard, green economy is considered in the context of sustainable development and poverty eradication as one of the important tools available for achieving sustainable development and that it could provide options for policy making but should not be a rigid set of rules. Green economy should contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the earth’s ecosystems.

• Policies for green economy in the context of sustainable development and poverty eradication should be guided by and in accordance with all the Rio Principles, Agenda 21 and the Johannesburg Plan of Implementation and contribute towards achieving relevant internationally agreed development goals, including the Millennium Development Goals.

• Green economy policies in the context of sustainable development and poverty eradication should be consistent with international law and be supported by an enabling environment and well-functioning institutions at all levels with a leading role for governments and with the participation of all relevant stakeholders, including civil society.

• Implementation of green economy policies by countries that seek to apply them for the transition towards sustainable development as a common undertaking will be done by each country choosing an appropriate approach in accordance with its national sustainable development plans, strategies and priorities.

• Green economy in the context of sustainable development and poverty eradication will enhance the ability to manage natural resources sustainably and with lower negative environmental impacts, increase resource efficiency and reduce waste.

• Involvement of all stakeholders and their partnerships, networking and experience-sharing at all levels could help countries to learn from one another in identifying appropriate sustainable development policies, including green economy policies. Positive experiences in some countries, including in developing countries, in adopting...
Green economy policies in the context of sustainable development and poverty eradication through an inclusive approach have been noted and the voluntary exchange of experiences as well as capacity-building in the different areas of sustainable development encouraged.

• Recognize the power of communication technologies, including connection technologies and innovative applications, to promote knowledge exchange, technical cooperation and capacity-building for sustainable development. These technologies and applications can build capacity and enable the sharing of experiences and knowledge in the different areas of sustainable development in an open and transparent manner.

• Underscore the importance of governments taking a leadership role in developing policies and strategies through an inclusive and transparent process. We also take note of the efforts of those countries, including developing countries that have already initiated processes to prepare national green economy strategies and policies in support of sustainable development.

• Invite relevant stakeholders, including the United Nations regional commissions, United Nations organizations and bodies, other relevant intergovernmental and regional organizations, international financial institutions and major groups involved in sustainable development, according to their respective mandates, to support developing countries upon request to achieve sustainable development, including through, inter alia, green economy policies in the context of sustainable development and poverty eradication, in particular in least developed countries.

• Encourage existing and new partnerships, including public-private partnerships, to mobilize public financing complemented by the private sector, taking into account the interests of local and indigenous communities when appropriate. In this regard, governments should support initiatives for sustainable development, including promoting the contribution of the private sector to support green economy policies in the context of sustainable development and poverty eradication.

• Recognize that the efforts of developing countries that choose to implement green economy policies in the context of sustainable development and poverty eradication should be supported through technical and technological assistance.