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NATIONAL ASSEMBLY MEMORANDUM

ON

**THE NATIONAL GREEN FISCAL INCENTIVES POLICY
FRAMEWORK**

III. POLICY CONTEXT

6. Recognizing the threats posed by climate change and other environmental challenges, the world is now taking more rapid action. Investors are rapidly shifting from dirty to clean assets, and key technologies needed for environmental sustainability are experiencing rapid cost reductions.
7. The world's largest emitter, China, in 2020 pledged to reduce CO2 emissions to net zero by 2060. The United Nations Call for Action on Adaptation and Resilience spelled an urgent need for enhanced resilience and also recently adopted a landmark framework that considers the contribution of nature when measuring economic prosperity and human wellbeing.
8. In accordance with the updated NDCs that build on national policies, plans and legal frameworks, it is essential for Kenya to play a full and active part in this global transition to a low-carbon climate resilience development path.
9. A development path characterized by continued low-emissions, enhanced climate resilience and environmental sustainability.
10. Formulation of this Policy was initiated within the framework of the Climate Change Act, 2016 and the National Climate Change Action Plans whose objective is to encourage low carbon climate resilient development through implementation of the National Climate Change Response Strategy, 2010.

IV. GOALS AND OBJECTIVES OF THE POLICY

11. The goal of this policy is to identify and prioritize the implementation of a coherent suite of green fiscal actions that will allow Kenya to exploit the opportunities of accelerating the transition to a low-emissions development pathway while enhancing climate resilience and ensuring environmental sustainability. In doing this, the policy will:
 - a. Direct government planning, budgeting and spending/procurement toward green and consumption.



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THE NATIONAL TREASURY

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by continued low emissions, enhanced climate resilience and environmental sustainability will provide Kenya with a wide range of benefits including: stronger growth, greener investment and higher innovation; enhanced natural capital; avoidance of transition risks; enhanced resilience to climate and other shocks; meet international obligations, among others.

The goal of this policy is to identify and prioritize the implementation of a coherent suite of green fiscal actions that will allow Kenya to exploit the opportunities of accelerating the transition to a low-emissions development pathway while enhancing climate resilience and ensuring environmental sustainability. In doing this, the policy will:

- i. Direct government planning, budgeting and spending/procurement toward green production and consumption.
- ii. Provide a framework for fiscal incentives to attract private sector investment into a low-carbon emission, climate-resilient and environmentally sustainable economy.
- iii. Provide a framework for generating additional revenue streams for the government.

The policy sets out a series of green fiscal policy actions of particular interest to the government of Kenya. The key sectors identified in the policy have the greatest potential to green Kenya's economy and are in line with the National Climate Change Action Plan (2018–2022). These sectors include agriculture, food and nutrition security, water and sanitation, blue economy, disaster risk financing, health and sanitation, forestry, human settlement and infrastructure, energy, transport, manufacturing and waste management. The policy also identifies some key cross-cutting policy actions that would have an important impact in support of Kenya's green development agenda.

The National Treasury will lead and facilitate the implementation of this policy, working with partners to develop required laws and regulations. Capacity development for relevant stakeholders, including county governments, will be a critical element of implementation. A continuous program for monitoring and evaluation will be developed, and the policy shall be reviewed within five years to assess its effectiveness and relevance.

4.2	Enhanced green financial intermediation actions:	48
4.2.1	Green investment bank	48
4.2.2	Carbon tax	50
CHAPTER 5: IMPLEMENTATION, GOVERNANCE AND INSTITUTIONAL ARRANGEMENTS		51
GLOSSARY		60

CHAPTER 1: INTRODUCTION

1.1 The call for action

Recognizing the threats posed by climate change and other environmental challenges, the world is now taking more rapid action. Building on the momentum created by the Paris Agreement (PA) and agreement on the Global Goals (the Sustainable Development Goals, SDGs), and recognizing the urgent need to Build Back Better from the coronavirus disease 2019 (COVID-2019) crisis, countries around the world are committing to combat climate change and environmental risks. In 2020, the world's largest emitter, China, pledged to reduce CO₂ emissions to net zero by 2060. Further progress is soon expected from the US. The urgent need for enhanced resilience is reflected in the United Nations Call for Action on Adaptation and Resilience. Investors are rapidly shifting from dirty to clean assets, and key technologies needed for environmental sustainability are experiencing rapid cost reductions. The United Nations recently adopted a landmark framework that considers the contribution of nature when measuring economic prosperity and human wellbeing.¹

In accordance with the updated National Determined Contributions (NDCs) that build on national policies, plans and legal frameworks, it is essential for Kenya to play a full and active part in this global transition to a low-carbon and climate-resilient development path. A development path characterized by continued low emissions, enhanced climate resilience and environmental sustainability will provide Kenya with a wide range of benefits:

Stronger growth, greener investment and higher innovation. UNEP's 2014 Kenya Green Economy Assessment Report shows that pursuing a green economy scenario will result in faster economic growth.² By 2030, gross domestic product (GDP) could be 12% higher by taking a green growth pathway compared with continuing a business-as-usual (BAU) scenario. This reflects the high positive spillovers from climate-related innovation, the savings and yield increases provided by a focus on resource productivity, and the ever-lower costs of many key low-carbon and climate-resilient technologies. Kenya has abundant renewable energy resources, a thriving green finance sector and an enviable reputation as a climate action leader globally. Kenya has the potential to sequester, reduce, or avoid about 30 metric tons of carbon dioxide equivalent per year and mobilize up to \$600 million annually from regulatory compliance and voluntary carbon market (VCM) projects by 2030 using an average price of \$20 per ton. Kenya has also emerged as one of the largest issuers of carbon credits - 8th largest in the world in 2021. All these advantages can be exploited in a green growth pathway. There are also benefits from low-carbon, climate resilient

¹ The System of Environmental-Economic Accounting- Ecosystem Accounting (SEEA EA)

² UNEP (2014), Green Economy Assessment Report: Kenya. Available:

https://www.greengrowthknowledge.org/sites/default/files/downloads/resource/KenyaGEassessment_UNEP.pdf

pre-industrial levels. Kenya's contribution to this goal is formally reflected in its recently updated NDC, which enhanced its ambition by setting a goal to reduce its emissions by 32% relative to BAU by 2030, and included, for the first time, a commitment that some of this action would no longer be conditional on the provision of support by the international community.

Cooking poverty: Cooking poverty is a national development issue that mainly affects the poor households. Incentives are needed to develop and deliver cooking decency for all. For long-term sustainability, interventions must be guided by principles that put cooking needs and aspirations of poor households at the center and fully integrate the universal access goal into national strategies and roadmaps underpinned by high-level political support and investments.

There are inherent benefits of access to clean cooking: Improving access to clean cooking can accrue large socioeconomic and environmental benefits for society. However, progress has been stymied due to a lack of prioritization at all levels, including donors, national governments, the private sector, and households.

1.2 New green fiscal policies to build on a strong planning foundation

Kenya has made significant progress in moving toward a green and blue development pathway as sustainable natural resource utilization including marine and aquatic resource is embedded in the Constitution. The Green economy has been mainstreamed in the MTPs and County Integrated Development Plans (CIDPs). Under the Climate Change Act 2016, the government is required to develop five-year NCCAPs to guide the mainstreaming of adaptation and mitigation actions into the sector functions of the national and county governments. The NCCAP, covering the period 2018 to 2022, identifies a series of actions for government and other stakeholders, with a particular focus on adaptation. The National Policy on Climate Finance (2018), provided a clear direction on mechanism for enhanced mobilization of climate finance from all sources: private, public, multi-lateral Agencies, bilateral, philanthropic, etc. to finance Kenya's updated NDC and NCCAPs. The policy recommended the development of green fiscal incentive policies to catalyze the private sector to finance transition to a low-carbon and climate-resilient development path.

A range of further specific policies provide for green growth and sustainable natural resource management including the Environmental Management and Coordination Act, 1999 and the Sustainable Waste Management Policy and Sustainable Waste Management Act, 2022.

However, the government has identified that more needs to be done to realize the benefits of transitioning to a low-emissions development pathway, while enhancing climate resilience and environmental sustainability. In particular, it recognizes the need for new and additional green fiscal policies – i.e., to use policies relating to the way in which it raises and spends financial

- ii. Provide a framework for fiscal incentives to attract private sector investment into a low-carbon emission, climate-resilient and environmentally sustainable economy
- iii. Provide a framework for generating additional revenue streams for the government.

In seeking to achieve this goal, there are nine principles that have informed the development of the policy to date and will guide the implementation of the specific actions this policy framework identifies:

Predictability: The policy will provide greater certainty in government policy to encourage higher private sector investment in green growth. Sunset clauses for phasing out incentive schemes will be developed to provide certainty for the investors.

Cost-effectiveness:

The policy will promote fiscal measures that maximize value for money while ensuring sustainable growth.

Polluter-pays: The policy will provide ways of allocating the costs of pollution prevention and control to polluters to encourage the rational use of scarce environmental resources by evoking the Polluter Pays Principle (PPP).

Coherence: The individual actions developed under this policy will be additional. There will be a focus on both ensuring that all policies are aligned to achieve the same objective, and on avoiding unnecessary policy duplication or overlap.

Consultative: The policy and its individual actions are developed in a consultative manner, drawing on the full range of expertise within Kenya and internationally, allowing those who will be both positively and negatively affected by potential changes to express their perspective and to have an opportunity to suggest improvements.

Inclusiveness: The policy and its actions will promote the participation of private investors and communities, including small-, medium- and large-scale enterprises. This will, in turn, support the government's employment and wealth-creation initiatives. This is consistent with the BETA which lays emphasis on leaving no one behind.

Transparency and accountability: Spending on green fiscal policies and any revenues raised will be managed in line with the provisions of the Constitution of Kenya and the Public Finance Management (PFM) Act (2012) on sound public expenditures management.

Equity: The policy and its individual actions will promote reallocation and redistribution of resources while taking cognizance of the needs of the most vulnerable sectors and members of society.

CHAPTER 3: SITUATIONAL ANALYSIS

Kenya has already created a strong foundation for low-carbon, climate-resilient growth through a range of fundamental documents and legislation. This starts with the country's Constitution which, under Article 42, guarantees every Kenyan the right to a clean and healthy environment and encourages participatory resource management and equitable benefits. This is reinforced by the Environmental Management and Coordination Act, 1999, which includes a provision (under Section 57) for fiscal incentives, disincentives or fees to induce or promote the proper management of the environment and natural resources or the prevention or abatement of environmental degradation. Similarly, the Climate Change Act, 2016 provides a regulatory framework for an enhanced response to climate change, allowing for mechanisms and measures to achieve low-carbon climate development, and for connected purposes. A range of strategies, policies, and action plans are detailed in subsequent government documents including the National Climate Change Framework Policy (2016), the National Policy on Climate Finance (2018), the NCCAP (2018–2022), and the Green Economy Strategy and Implementation Plan (2016–2030). They highlight the need for a fiscal incentives policy to accelerate transition to a green and circular economy through increased financing from alternative sources such as the private sector.

A critical document reflecting Kenya's domestic ambition in the international arena is its updated NDC. This was submitted in 2020 to the United Nations Framework Convention on Climate Change (UNFCCC), and specifies both mitigation and adaptation actions. It confirms Kenya's ambition to transition to a low-carbon society and reduce its greenhouse gas (GHG) emissions far beyond 32% by 2030 (with milestone targets at 2025) relative to the BAU scenario of 143 Million Tons of Carbon Dioxide Equivalent (MtCO₂eq) outlined in the updated NDC. Emission reductions are to be undertaken based on equity and in the context of sustainable development and efforts to eradicate poverty, which are critical development priorities for many developing countries including Kenya.

There have been a range of important fiscal developments and initiatives across many of Kenya's key economic sectors, which are detailed below. In each section, there is a brief discussion of the key challenges and opportunities that Kenya faces in that sector, a summary of the current fiscal policies that are encouraging green economic growth, as well as a summary of relevant international experience. A separate annex provides more detail on the international experience.

The 11 sectors considered in this section are:

- Disaster risk management
- Water and the blue economy
- Health and sanitation
- Food, agriculture and nutrition security
- Forests, wildlife and tourism

Current fiscal and other policies

The government has made significant strides in strengthening disaster risk management systems in the country. The Disaster Risk Financing Strategy outlines the various disaster risk financing instruments that are available for responding to the vagaries of drought, floods and other disasters. These disaster risk financing instruments include the Kenya Livestock Insurance Program (KLIP), Kenya Agriculture and Crop Insurance Management Program (KAIRMP), Hunger Safety Net Program (HSNP), Contingencies Fund, County-Level Emergency Funds, and the Development Policy Credit with a Catastrophe Deferred Draw Down Option (Cat DDO).

The government has also made significant investments in the development of drought-tolerant crop varieties and livestock breeds. Some public investments have been targeted at building flood control infrastructure such as that constructed in Budalangi, water storage and harvesting infrastructure of varied scales, such as Thwake Dam, to improve access to water for domestic and livelihood uses.

International experience

Kenya's experience largely matches the international experience, which has emphasized the role of national disaster funds, and developing plans for using those resources, with roles and responsibilities between different actors clearly stated and understood. Mexico's disaster fund, FONDEN, is often stated as a good practice example.⁶

Other approaches suggested by international experience include:

Purchase of insurance. Insurance products are increasingly available to preserve ecosystems in the event of natural disasters. For example, in 2019, the state government of Quintana Roo, Mexico, developed and financed a parametric insurance product to help maintain coral reefs and beaches along 160 km of its coastline. The state is currently developing a mechanism to extend the coverage to include mangrove protection as well.

Catastrophe bonds (CAT bonds). This security raises capital for a government in the same way as a normal government bond, but if an event protected by the bond occurs, the obligation to pay interest and repay the principal is either deferred or completely forgiven. In this way, the government pays interest on the principal in exchange for the possibility of claiming a payout from the bond in the case of a disaster. Mexico was the first country to issue CAT bonds and it has since become commonplace among countries vulnerable to natural disasters. Most recently, the

⁶ Clarke, Daniel Jonathan; Dercon, Stefan (2016) Dull disasters? How planning ahead will make a difference (English). Washington, D.C. World Bank Group.
<http://documents.worldbank.org/curated/en/962821468836117709/Dull-disasters-How-planning-ahead-will-make-a-difference>

Fiscal considerations are crucial for protecting sensitive ecosystems and biodiversity hotspots in Kenya. The allocation of financial resources towards conservation efforts can provide the necessary support for research, monitoring, and implementation of conservation strategies. In addition, financial incentives can encourage local communities to engage in conservation activities, reducing the pressure on ecosystems and biodiversity hotspots.

Kenya has already taken some action to address water resource and quality issues. For example, the 2006 Environmental Management and Coordination (Water Quality) regulations prohibit discharge of effluent into the environment that is in breach of the established standards. The National Environment Management Authority (NEMA) regulates discharge of all effluent into the environment and issues effluent discharge licenses for a fee.

Similarly, the Fisheries Act (2016) requires registration and licensing for both local and foreign vessels for fishing in the Kenya fishery waters for a fee. It also imposes fines and penalties for fishing without a license or in contravention of conditions imposed by a license under the Act. This aims to ensure sustainable fishing practices to preserve the blue economy ecosystem, although, as noted above, challenges remain.

International experience

The international experience provides insights into potential fiscal policy options across a range of dimensions in the water and blue economy sector.

To promote efficient portable water provision, some countries have adopted a type of feebate system where richer, higher-use households are charged a higher rate to offset subsidies for poorer, subsistence-use households. This is the case in Colombia where, for example, the price of water depends on how the neighborhood ranks on a national six tier socioeconomic system. Households on the lowest tier receive a 70% subsidy, whereas those in the top tier pay a 165% surcharge.¹⁰

A range of countries use fees and taxes to protect their freshwater supplies from pollution by taxing industrial water pollutants. The Colombian government, for example, charges all polluters a fee per unit of biological oxygen demand (BOD) and total suspended solids (TSS), with regional enforcement agencies entitled to retain any pollution fee revenues. According to Colombia's environment ministry, nationwide BOD discharges from point sources covered fell by 27%, and TSS discharges fell by 45% in the first six years of the program.¹¹

¹⁰ <https://www.acueducto.com.co/> (in Spanish)

¹¹ Olmstead, S and Zheng, J Policy Instruments for Water Pollution Control in Developing Countries, December 2019. Review of Environmental Economics and Policy. Available: https://sites.utexas.edu/olmstead/files/2019/12/Olmstead_Zheng_20191217.pdf

productivity.¹⁵ Access to health is a basic social economic right of every Kenyan. Article 43 (1)(a) of the Constitution states that " Every person has the right to the highest attainable standard of health, which includes the right to health care services, including reproductive health care". However, health is also a devolved function where provision of the services is the responsibility of the counties.

The World Health Organization (WHO, 2016)¹⁶ shows that health system activities exert significant impacts and pressures on the environment by generating hazardous and conventional wastewater and greenhouse gas emissions and through their high consumption of resources such as water and energy. Some of the key impacts are:

Health care waste: The health care system is one of the highest-waste-generating sectors. It is estimated that between 75% and 90% of waste produced from the health care system is comparable to domestic waste in terms of its composition and environmental implications. Increased use of disposable instruments and prepacked materials has led to increased waste generation. Clinical waste generation is also increasing among private households. Landfill is the least expensive means of disposal but poses high environmental and health risks. Incineration is a cheaper alternative of health care waste disposal but resulting ash has been found to contain high levels of heavy metals.

Wastewater: Water pollution can directly emanate from the health care facilities, the activities of patients, the healthcare supply-chain and from inadequate health care waste disposal. Frequent pollutants include pharmaceutical products, microorganisms, heavy metals, cleaning products and chemicals such as organic halogens or free chlorine.

Greenhouse gas emissions: Greenhouse gases arise from embedded emissions in procured goods, direct energy use in healthcare facilities and patient and staff travel.

Toxic chemicals: The healthcare industry is a major consumer of chemicals, some of which can have serious health and environmental impacts including mercury, polyvinyl chloride, flame retardants, phthalates, and volatile organic chemicals.

Resource consumption - water and energy: Even though direct water use by health systems is minimal compared to other sectors, indirect (embedded water consumption) is significant. For example, disposable cotton is derived from cotton crop which is highly water intensive.

Current fiscal policies

¹⁵ KIPPRA (2020). Creating an Enabling Environment for Inclusive Growth In Kenya. Kenya Economic Report. <https://kippra.or.ke/wp-content/uploads/2021/02/Kenya-Economic-Report-2020.pdf>

¹⁶ WHO (2016). Towards Environmentally Sustainable Health Systems in Europe, a Review of the Evidence. <https://apps.who.int/iris/bitstream/handle/10665/340377/WHO-EURO-2017-2242-41997-57725-eng.pdf?sequence=3>

KESHHP seeks to ensure that all health facilities have reliable water supplies and environmental sanitation and hygiene facilities; ensure that all health staff are trained on medical waste management; and ensure there is adequate budgetary allocation for management of medical waste among others.

According to KESP (2016 – 2030), one of the reasons why sanitation remains a low investment priority is institutional fragmentation, with different elements of the sanitation supply chain being the responsibility of different players. This fragmentation has led to lack of proper coordination of sanitation services and hindered a holistic approach to sanitation financing. The development of a sanitation and hygiene investment plan has been a pending priority within Kenya's Country Priority Action Plan on Sanitation, but progress is constrained by a lack of specific capacity in the sector. Thus, despite financial support and donor interest for sanitation in Kenya, sustainable financing remains a key bottleneck to accelerated progress.

Current fiscal and other policies

The Ministry of Water & Sanitation and Irrigation is currently focusing on resource mobilization, innovative financing mechanisms and investment planning to achieve universal access by 2030. Some of the initiatives in place towards this mission include pro-poor initiatives by the ministry aimed at ensuring the progressive realization of the human right to safe drinking water and sanitation for all, in a non-discriminatory manner. Other initiatives by both national and county governments that will enhance access to safe drinking water include: (i) Allocation of more resources by both National and County governments to expand water infrastructure; (ii) Community sensitization programs on water treatment; and (iii) Investing in water harvesting technologies (KEPI 2020).

International experience

Improving sanitation can be particularly reliant on government spending but there are examples of very strong progress being made when fiscal policy is used to align incentives. Peru's Incentives Program for the Improvement of Municipal Management (MIP) provides an example. MIP makes direct transfers to local governments, on condition of the achievement of set ecological goals, which are monitored twice a year. Between 2015 and 2019, 15,901 rural water and sanitation operators were registered, 31,917 water systems were built, 2,500 rural water systems were rehabilitated, and 1,997 chlorinated systems were installed.

Current fiscal and other policies

The government's 2009–2020 Agricultural Sector Development Strategy has multiple objectives. These include establishing a central authority for recording animals and regulating breeding programs, enhancing animal feeding and nutrition practices, strengthening livestock extension services, and improving livestock disease and pest control. The Climate Smart Agriculture (CSA) Framework Program 2015–2030 targets a reduction in agricultural GHG emissions by increasing livestock productivity alongside the adoption of improved adaptive technologies which minimize carbon emissions and enhance soil carbon sequestration. It also aims to develop a national carbon accounting and measurement, reporting and verification system, and promote efficiency in dairy and livestock manure management and in paddy rice management, for example.

Furthermore, food and nutritional security is one of the key pillars of the BETA. Consequently, several projects are under implementation including the construction of several dams for water conservation, flood prevention and to support irrigation; the Galana Kulalu food security model farm; a fertilizer subsidy program to lower the cost of farming; and, as noted above, the introduction of Kenya Livestock Insurance Program (KLIP).

In terms of legislation, the Value Added Tax (VAT) Act of 2013 and the Income Tax Act (CAP 470) lay the groundwork for policy in this area. The VAT Act provides value added tax (VAT) exemptions for all unprocessed agricultural products and agricultural pest-control products (and inputs for their production), as well as a duty exemption for agricultural machinery (and inputs for their production), fertilizer, storage facilities and seeds. In combination, these exemptions vastly reduce the costs of agriculture and contribute to incentivizing increased production and enhanced food security. The Income Tax Act's provision for a 50% capital deduction for investment in farm works will have a similar effect.

However, not all incentives and programs are climate-smart or geared toward promotion of a green sustainable economy. Some pesticides can contaminate soil, water and other vegetation. Similarly, the use of chemical fertilizers can have negative effects on the environment, for instance the emission of methane, nitrous oxide and ammonia into the atmosphere. This policy takes into cognizance these challenges and attempts to balance the interventions towards achieving NDC targets while addressing food security.

International experience

Internationally, there are many examples of fiscal policies that provide subsidies to farmers to engage in more sustainable practices, with the funding for these subsidies met through a re-allocation of existing agricultural subsidies. Examples include Brazil and the UK, whose experience points to *the importance of robust monitoring to ensure impact*. Direct subsidies and tax exemptions have also been shown to be important levers in encouraging sustainable farming. For example, in India, following the removal of these trade barriers at the beginning of 2017, the

Montane forests regulate more than 75% of the country's renewable water resources, which is critical for the sustainable development of many sectors such as agriculture, forestry, fisheries, electricity, water, hotels and other tourist facilities, public administration, and defence. They also prevent soil erosion and provide habitats for many plant and animal species. In addition, montane forests supply fuelwood that meets over 75% of Kenya's overall energy requirements.

Kenya's updated NDC identified the forest sector as having a mitigation potential of 40.2 million tons of CO₂ by 2030 of which 20.8 million tons CO₂ is committed in the NDC. The UNFCCC framework for Reducing Emissions from Deforestation and Forest Degradation (REDD+) appreciates the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. In the Kenya the REDD+ Strategic Options; Improving the productivity of public plantations through PPPs, scaling commercial forestry investment on private lands, enhance efficiency, effectiveness and skills across the value chain and mobilise private sector finance. Commercial Forestry mitigation actions include +80,000ha agroforestry +150,000ha commercial plantations and replanting 31,000ha of unstocked public plantations.

Kenya has embarked on an ambitious national and forest and landscape strategy aiming to triple its forest cover by planting 15 billion trees by the year 2032 which entails improving production of 15 Billion high quality seedlings; and restoration of 10.6 million ha of degraded landscapes; and enhance protection of the 5.2 million ha of available forests. Improve productivity and management of public forest plantations by restocking of planting backlogs; Maintain 5,240 Km fire breaks and 8,236 Km of forest roads. The proposed intervention areas include restocking 54,000 hectares of the plantation area using 86.4 million seedlings through various strategies including Public-Private partnerships (PPPs), establishment of commercial private forest plantations (450,000 hectares using 450 million seedlings), growing of fruit trees and woodlots in schools, colleges universities and other institutions (40,000 hectares using 40 million seedlings), promote bamboo growing, implement mangrove management plan and growing of agroforestry trees on farmlands (7 million hectares using 2.8 billion seedlings). The estimated cost to implement this strategy is KES 500 billion.

Increasing efficiency in charcoal production can reduce the pressure on forests: instead of using 10 kg of wood to produce 1 kg of charcoal, improved technologies can cut the use of wood down to 3 to 6 kg according to the technology used and best practices applied. Considering the high proportion of non-renewable biomass used to produce charcoal (between 90% and 95%), these measures could lead to 5.7 million cubic meters of Renewable Wood Equivalent (RWE) of non-renewable biomass savings per year from dry forests, generating about 16.5 million tCO₂e per year of emission reductions from deforestation and forest degradation

The Forest management and conservation act 2016, provides that a person who establishes or owns a private forest may apply to the relevant authorities for exemption from payment of all or part of the land rates and such other charges as may be levied in respect of the land on which the forest is established.

Forest Management and Conservation Act 2016 (44. (1)) provides that Kenya Forestry Service if satisfied can permit utilization of a public forest through the granting of a concession for conservation of biodiversity, cultural or recreational use.

The Government decision to zero rate duty on imported timber from 10% in July 2019, led to increased regional timber trade arising from development of new networks by local importers, clearing agents and transporters leading to reduced lead-time in meeting timber needs.

International experience

Internationally, a common fiscal approach to countering deforestation is direct government spending on the planting of trees. Ethiopia has been a prominent example in this regard, claiming to have planted 350 million trees in a single day in 2019 as part of the National Green Development Program.²⁵ This is part of a plan to plant 20 billion seedlings by 2024, which is expected to cost the Ethiopian government over US\$ 117 million (Getachew, 2020).²⁶

Spending directly on afforestation can be effective if planting and growing trees are conducted correctly. However, providing offsetting opportunities for companies covered by a carbon tax or emissions trading system (ETSs) would support positive ecological activity without creating a drain on fiscal resources. There are international precedents for this approach. As of July 2020, GHG emitters in South Africa can fund afforestation and reforestation projects as a means of offsetting their carbon tax obligations (SA National Treasury, 2020).²⁷

An expansionary measure which has become increasingly widespread is that of *payments for ecosystem services (PES)*. Under this approach, the government pays landowners in exchange for their adherence to pre-agreed sustainable practices on their land. In Ecuador, the Socio Bosque program pays individual landowners and local communities who agree to conserve their ecosystems through *voluntary conservation agreements (VoCA)* that are monitored on a regular basis for compliance. For the first 50 hectares of the conservation area, the incentive is US\$37 per hectare per year; from 51 to 100 hectares, the incentive is reduced to US\$25 per hectare, and

²⁵ World Economic Forum, The African country that inspired more and more countries to plant billions of trees. 11th June 2020. Available: <https://www.weforum.org/agenda/2020/06/ethiopia-trees-forests-deforestation-worldwide-climate-change/>

²⁶ Getachew, S. (2020). Ethiopia will plant 5 billion trees this year to tackle climate change, but it comes at a steep price. Retrieved from: <https://qz.com/africa/1866532/ethiopia-to-plant-5-billion-trees-in-2020-to-beat-climate-change/>

3.6 Human settlements and infrastructure

Situational context

The country's infrastructure network is already affected by the physical impacts of climate variability and change. Roads, bridges, water pipelines and powerlines play a pivotal role in supporting the economy but are susceptible to damage from floods and other climate-related disasters. In 1997 and 1998, for example, water supply infrastructure and transport networks in Kenya were damaged by El Niño-related flooding.³⁰ Additionally, settlements in riparian areas, wildlife corridors; clearing for infrastructure without greening the environment, rising sea levels in the Indian Ocean have caused destruction of coastal infrastructure such as ship docking ports, a naval base in Kipini, hotels and beachfront houses, and (in combination with extreme weather events) intensified flooding in the coastal areas.

Buildings used for housing and commerce can also have significant negative climate change and environmental impacts, despite serving a vital societal purpose. Responding to these concerns, a 'green' building is one that, in its design, construction or operation, reduces or eliminates negative impacts, and can create positive impacts, on the climate and natural environment.³¹ Several features can make a building 'green', including:

- Efficient use of energy, water and other resources
- Use of renewable energy, such as solar energy
- Pollution- and waste-reduction measures, and the enabling of re-use and recycling
- Good indoor environmental air quality
- Use of materials that are non-toxic, ethical and sustainable
- Consideration of the environment in design, construction and operation
- Consideration of the quality of life of occupants in design, construction and operation
- A design that enables adaptation to a changing environment

Green buildings preserve precious natural resources and improve the quality of life for residents. Their objective is to decrease the overall impact of the built environment on human health and the natural environment by efficiently using energy, water, and other resources. By doing this, green buildings protect occupant health, improve employee productivity and enhance climate resilience, while reducing waste, pollution and environmental degradation.

Kenya has made progress in developing local voluntary green building rating schemes such as the 'GreenMark Standard' and the Safari Green Building Index. There is also a growing interest and adoption of voluntary green building certification tools such as the IFC's EDGE.

Current fiscal and other policies

³⁰ Government of Kenya (2016). *Kenya National Adaptation Plan*. Nairobi: Ministry of Environment and Forestry.

³¹ World Green Building Council. Available: <https://www.worldgbc.org/what-green-building>

3.7 Electricity

Situational context

Kenya has made great progress in generating electricity from green sources. As of 2019, the electricity installed capacity from renewable sources, including geothermal, hydro, wind, solar and co-generation, stood at 73.4%, compared to 67% in 2008 (KIPPRA, 2020).³⁵ Consequently, the percentage of electricity generated from thermal declined considerably from 33.2% in 2008 to 11.5% in 2019 because thermal generation has been on a declining trend over time, electricity generation is currently 92% green and will be 100% green by 2030.

There is considerable scope to expand geothermal electricity in Kenya, with a proven potential of over 10,000 MW. Of this potential, only 860 MW has so far been exploited for electricity generation. Currently, exploitation of geothermal energy is almost wholly owned by the public, with a small proportion of plants financed through public-private partnerships or private finance only. The high costs of field development, coupled with the high risks associated with resource exploration and drilling, still pose a significant barrier to private sector financing. Siting geothermal projects carefully is also important – for example, discouraging geothermal development in areas with rich biodiversity. This would avoid new geothermal resources creating other environmental issues.

Despite the improved capacity in electricity generation in Kenya, approximately 3 million households still lack access to electricity. Installing off-grid solutions including mini-grids and solar home systems is one of the options for electrifying these non-connected households and ensuring access to sustainable energy for all. In some instances, off-grid solutions are more economical than extending the national grid. Investment in the off-grid renewables sector has grown strongly as deployment has accelerated. The total installed capacity in 2016 was approximately 25.3 MW, most of which consists of public-operated mini-grids.¹¹ Despite the impressive growth, the investment gap in the off-grid sub-sector remains large. The overarching strategy for Kenya's electricity sector, the 2018 Kenya National Electrification Strategy, focuses primarily on national grid extension. Mini-grids are included but significantly under-represented. Currently, discussions are being advanced towards investments in battery energy storage as energy storage technologies are advancing fast and are becoming cost competitive. Both public and private sources of financing have an important role to play in bridging the financing gap.

Current fiscal and other policies

There is a range of measures already in place that help support the continued expansion of the low-carbon power sector in Kenya.

³⁵ KIPPRA (2020). Kenya Economic Report 2020: Creating a Conducive Environment for Inclusive Growth in Kenya, Nairobi, Kenya.

taxes in richer countries, which are generally over US\$25 per tonne of CO₂e and can be as high as US\$100 per tonne of CO₂e.

Electricity excise taxes can also be a powerful tool to both discourage wastage and generate government revenue. This is especially true in cases where taxes are combined with favorable regulatory treatment of energy from renewable sources. Costa Rica taxes residential electricity use at 5% while at the same time providing exemptions of excise tax, VAT, general sales tax and a special customs tax for renewable energy sources.³⁸

While most policies in the energy sector are revenue-generating, there can be a value in subsidizing the adoption of newer renewable energy technologies such that they can become price-competitive against their 'brown' alternatives, although the need for this has diminished as renewable energy technology costs have fallen. In Mexico, the government has created several fiscal policy instruments intended to facilitate the fostering of clean energy projects and provide an attractive investment climate for the private sector. The most successful of these mechanisms was the accelerated 100% depreciation in one year of investments in renewable energy on a company's income tax (Peters, 2012).³⁹

Green bonds have been successfully employed in funding both low-carbon transport and renewable energy projects. In 2020 Chile issued over US\$3.5 billion in green bonds earmarked entirely for low-carbon transport (Whiley, 2020).⁴⁰ Egypt is one of the few African countries, and the first Arab country, to issue a green bond, and its 2020 issuance has provided US\$750 million to finance projects in transportation, renewable energy and energy efficiency (Barbuscia and Ramnarayan, 2020).⁴¹

3.8 Clean cooking

Situational context

Currently, 59% of households in Kenya use the three-stone open fire (TSOF).⁴² Although the proportion of household users of TSOF has dropped (76% of households used TSOF 20 years ago), the aggregate number has increased from 4.7 million to about 7.3 million households. In terms of primary cooking fuel, 64.7% (8.1 million) of households in Kenya still use wood as their primary

³⁸ Green Fiscal Policy Network, 2019 https://greenfiscalspolicy.org/policy_briefs/costa-rica-country-profile/

³⁹ Peters, S. (2012). The Role of Green Fiscal Mechanisms in Developing Countries: Lessons Learned. Retrieved from: <https://publications.iadb.org/publications/english/document/The-Role-of-Green-Fiscal-Mechanisms-in-Developing-Countries-Lessons-Learned-Case-Study.pdf>

⁴⁰ Whiley, A. (2020). Chile makes 3rd sovereign green issuance: Record rates for Jan 2020 Climate Bonds certified transaction. Retrieved from: <https://www.climatebonds.net/2020/02/chile-makes-3rd-sovereign-green-issuance-record-rates-jan-2020-climate-bonds-certified>

⁴¹ Barbuscia, D. & A. Ramnarayan. (2020). Egypt becomes first Arab country to issue Green bonds with \$750 million deal. Retrieved from: <https://www.reuters.com/article/egypt-bonds-int/egypt-becomes-first-arab-country-to-issue-green-bonds-with-750-million-deal-idUSKBN26K1MJ?edition-redirect=in>

⁴² MOE, CCAK (2019). Kenya Household Cooking Sector Study: Assessment of the Supply and Demand of Cooking Solutions at the Household Level.

3.9 Manufacturing

Situational context

Industry and manufacturing are among the most important sectors in Kenya's economy, contributing 7.2% of GDP according to the Economic Survey 2022.⁴⁴ The government aims to increase the manufacturing sector's contribution to GDP to 20% by 2030 (20BY30).⁴⁵

The manufacturing sector contributes to climate change as it produces GHG emissions from the use of fossil fuels and other industrial processes. The sector was responsible for about 7% of Kenya's total emissions in 2015.⁴⁶ Energy conservation is key to the reduction of GHG emissions, as well as providing other benefits such as lower costs for consumers.

Examining the concept more broadly, in 2009, the United Nations Industrial Organization (UNIDO) coined the term 'Green Industry', with 'economies striving for a more sustainable pathway of growth, by undertaking green public investments and implementing public policy initiatives that encourage environmentally responsible private investments'. Greening industries involve taking care of materials, energy, water, waste and emissions.⁴⁷ This requires investment in technologies that enhance process efficiency in terms of optimizing raw materials, and energy and water use, while also reducing waste and emissions.

Kenya's industry sector relies heavily on a traditional linear model in which resources are extracted, processed, distributed, consumed, and eventually disposed of. The life cycle or circular economy concept instead advocates a circulation of resources within the economic system. Rather than disposing of waste it is reintroduced as a resource into the processing stage, thereby closing the circle.

Current fiscal and other policies

In 2006, the Ministry of Energy and Kenyan Association of Manufacturers (KAM) established the Centre for Energy Efficiency and Conservation (CEEC), which runs energy efficiency and conservation programs designed to help companies identify energy wastage, determine saving potential, and make recommendations on measures to be implemented.⁴⁸ Some of the key products offered by CEEC include energy audits, specialized training, and the Energy Management Award.

In addition, there is increased emphasis on promoting the reduction, re-use, recycling, recovery and repair of waste consistent with the sustainable waste management agenda.

⁴⁴ Kenya National Bureau of Statistics (2020) Economic Survey 2020. Available: <https://s3-eu-west-1.amazonaws.com/s3.amazonaws.com/sourceafrica.net/documents/119905/KNBS-Economic-Survey-2020.pdf>

⁴⁵ Government of Kenya (2019). Third Medium Term Plan III. The National Treasury and Planning general press release.

⁴⁶ Government of Kenya (2015). Kenya Second National Communication to the United Nations Framework Convention on Climate Change. National Environment Management Authority (NEMA)

⁴⁷ <https://www.unido.org/our-focus/cross-cutting-services/green-industry/green-industry-initiative>.

⁴⁸ <https://kam.co.ke/energy-services/>

Kenya's 2017 Emission Baseline Projections Report, the transport sector is the fourth largest GHG emitter after agriculture, electricity generation, and land-use change and forestry (LULUCF) (Government of Kenya, 2017).⁵¹ A lack of efficient road and rail public mass transit systems means that private transport is most prevalent, which is the main driver of transportation GHG emission growth.

Current fiscal and other policies

Under the Excise Duty Act 2015, there is a graduated system of import duty for vehicles of different cylinder capacity. Fully electric-powered motor vehicles face only a 10% duty charge, rising for vehicles with internal combustion engines to 35% for imported vehicles of more than 2500cc engine capacity.

However, there are some transport measures in place that are not consistent with the objectives of the green economy. For example, relatively lower tax rates are applied to petroleum products than elsewhere in the economy. Additionally, there is a 50% capital expenditure deduction on the year of first use of a petroleum or gas storage facility. These are externalities which need to be corrected through the introduction of carbon taxes.

International experience

Transport fuel taxes are already very common in many countries. However, given that the carbon intensity of diesel is roughly 13% higher per liter than that of petrol, a more environmentally aligned tax system involves taxing diesel at the same rate as or higher than petrol is needed. South Africa is a rare example of a nation which taxes the two fuels at close to parity, at US\$0.38 and US\$0.37 per liter of petrol and diesel, respectively (SA Revenue Service, 2020a).⁵²

As well as altering the consumer price of fuels, fiscal policies can influence the price of vehicles. In Mauritius, for example, a vehicle feebate means that those purchasing vehicles with a fuel economy above 150 gCO₂/km are taxed, whereas those purchasing vehicles below the threshold are granted a rebate (UNEP, 2017).⁵³ Mauritius has also waived a 50% import duty on electric and hybrid cars, as well as the registration fee. These incentives have led to the importation of more fuel-economy vehicles, with the number of hybrid cars being imported doubling each year between 2010 and 2013. The average fuel economy of the national fleet improved from 186 gCO₂/km in 2005 to 169 gCO₂/km in 2013.

⁵¹ Suswatch Kenya, (2017) Emissions Baseline Projections Report. Available:

https://www.inforse.org/africa/pdfs/PIPA_Kenya_Baseline_Report_May_8_2017.pdf

⁵² South African Revenue Service. (2020b). Taxation in South Africa. Retrieved from:

<https://www.sars.gov.za/AllDocs/OpsDocs/Guides/LAPD-Gen-G01%20-%20Taxation%20in%20South%20Africa.pdf>

⁵³ UNEP. (2017). Global Trends toward More Fuel Economy Vehicles. Retrieved from:
http://airqualityandmobility.org/PCFV/PDF/Namibia_GlobalTrends.pdf

Further, the Sustainable Waste Management Act 2022 was signed into law on 7th July 2022 to enforce the circular model. The SWM Act and Policy domesticates global best practices in waste management whereby producers are expected to invest in eco-design technologies and products that are reusable and recyclable and this contributes to reduction in waste. The producers are also expected to take back their products at the post-consumer stage. The SWM Act and Policy requires waste generators to segregate waste at source into different fractions and ensure appropriate transportation of the same by licensed waste service providers to a composting or a material recovery facility and not to the dumpsite.

The Government in collaboration with the private sector has also developed (draft) Extended Producer Responsibility (EPR) Regulations (2022). The EPR Regulations require producers to take care of their products and packaging at post consumer level through five categories of Producer Responsibility Organizations, to ensure eco-design of products, seamless collection, recovery of valuables, appropriate recycling as well as disposal in sanitary landfills. The SWM Act, Policy and EPR regulations aims to have additional financial resources available towards waste management as they are anchored on the polluter pays principle ensuring active participation by producers and waste generators.

The Kenya National Environmental Policy 2013 proposes the use of ‘fiscal incentives to encourage waste minimization, recovery, reuse and recycling (the 3Rs)’. Similarly, the Kenya Waste Management Nationally Appropriate Mitigation Action (NAMA) 2017 underlines the importance of promoting ‘the use of economic incentives to manage waste’.

A national ban on single-use plastic carrier bags has been successfully implemented, significantly reducing plastic bag waste, roadside litter, and the volume of plastic transported to Kenya’s dumpsites.

International experience

Other countries around the world use fiscal policies to support more sustainable waste management practices. For example, Bangladeshi authorities have focused on improving the rate of waste recycling with a package of fiscal incentives including:

- Tax holidays for five–ten years for all waste treatment and recycling plants
- Reduced import or excise duties on relevant waste management equipment
- Use of its Climate Change Trust Fund to promote public awareness of the 3Rs⁵⁵

These incentives are applied only to formally registered waste treatment and recycling enterprises. Concurrently, the government has tried to encourage composting of organic waste by introducing a sales tax exemption on sales of compost and tax breaks for composting companies, although the efficacy of this has been offset by continued subsidies for chemical fertilizers.

⁵⁵ <https://www.unep.org/content/documents/7530Combined-Front%20page+report-Bangladesh.pdf>

particular need to diversify the projects which are attracting private finance: a recent report by the National Treasury and Climate Policy Initiative showed that over 97% of private sector funds were directed to renewable energy generation projects.

Another challenge is promoting new green innovation investment. Despite the progress Kenya has made on institutionalizing research, technology and innovation – such as the National Commission for Science, Technology and Innovation (NACOSTI), the Kenya National Innovation Agency (KENIA), and the National Research Fund (NRF), the National Environmental Trust Fund (NETFUND) and the World Bank-sponsored Kenya Climate Innovation Center (KCIC) – challenges still exist. These primarily relate to the fragmented approach where research institutions work disjointedly among themselves and not with industry. These weak linkages contribute to a mismatch between industry needs and what the academia and research system produces. In addition, technologies take too long to move through the innovation stage as innovators lack the capacity to develop technology, enter the market and commercialize products. The current structure has not sufficiently supported Kenyan innovators, resulting in most green technologies being produced overseas and imported.

To engage the interest of domestic institutions and attract private sector participation in green investment, the government is committed to developing a green bank referred to be referred to as Kenya Green Investment Bank (KeGIB). The bank will provide a range of funding instruments and associated incentives to support the private sector in overcoming barriers to making green investment at scale.

Carbon tax and Carbon trading

By 2022 and 2030, Kenya's combined GHG emissions from Forestry, Electricity generation, Energy demand, Transportation, Agriculture, Industrial Processes, and waste is projected to grow to about 100 and 143 million tons of carbon dioxide equivalent (MtCO_{2e}). In 2030, the highest amount of emissions would come from the energy sector (electricity generation) followed closely by Transportation and Agriculture. Out of the total 143 MtCO_{2e}, the National Climate Change Action Plan (NCCAP) of 2018-2022 projects that Kenya has the technical potential to reduce 60% of 85.8 MtCO_{2e} by 2030. The actual mitigation potential of each of the key sectors depends on a number of factors that range from policy, resources, priorities, to the practical implementation practically of the potential mitigation.

To facilitate the switch to clean energy and foster the 'polluter pays principle, the government should consider implementing a carbon tax. Correct carbon pricing will send a right signal to markets and private investors which is pivotal in creating an enabling environment for private investment. Carbon trade provides opportunity and impetus for gainful establishment and maintenance of carbon sinks. To promote efforts to cut down carbon emissions, concessionary incentives reward adoption of technologies and processes that limit greenhouse gas emissions and

CHAPTER 4: GREEN POLICY ACTIONS

This chapter sets out a series of green fiscal policy actions of particular interest to the government of Kenya. In the coming months and years, the government will look to develop specific recommendations in these different areas, building on the international experience and current Kenyan context described in Chapter three (3), while recognizing the goals, objectives and principles described in Chapter two (2).

The actions described in this chapter are split into two sections. The first sets out the areas of focus for each of the individual sectors described in Chapter 3, while the second describes some key cross-cutting policy actions that can have an important impact in supporting Kenya's green development agenda in many different sectors.

4.1 Sector-specific fiscal actions

Specific green fiscal policies are required for specific sectors.

This section outlines policy actions in the 11 sectors identified in Chapter 3.

4.1.1 Disaster risk management

The national and county government will pursue the following actions to reduce the devastating impact of climate-related disasters in Kenya.

Flood control measures. To address the problem of perennial floods and related risks, the government will put in place measures to increase funding and strategically preventative resilience measures for flood control projects such as dikes, dams, catchment and riparian reserves.

Promote crop and livestock insurance. To cushion farmers from loss of crops and livestock, the government, in collaboration with insurance providers, will put in place measures to scale-up climate-oriented insurance programs. This will include a consideration of whether to provide additional subsidies to reduce the cost of insurance for farmers without discouraging appropriate risk-reduction behavior. It will also include options for the design of innovative weather-based insurance products. The government will also consider options for increasing awareness, education and training around the role and value of crop and livestock insurance, especially in the provision of agricultural extension services at the county level.

Disaster risk financing. To ensure that it has sufficient funds to respond to inevitable disasters, the government will promote the use of innovative disaster risk-financing instruments like catastrophe (CAT) bonds, risk pools and contingency bonds as well as sovereign and subnational level disaster management funds. This will be complemented by the Kenya Sovereign Green Bond

coast by. Quotas would establish quantitative upper limits for fishing catches with quota rights either being non-tradable (as is the case in Namibia) or tradable (as is the case in Iceland). Quota policies would be budget-neutral if distributed for free, or a source of government revenue if auctioned. Similar measure will be instituted on the fresh water lakes such as Victoria, Naivasha, L. Baringo, L. Turkana, among others.

Restore degraded deltas and wetlands. Wetlands are essential life-support systems and play a vital role in controlling water cycles. However, a growing population, together with the need for increased agricultural production, has led to substantial pressure on the deltas and wetlands. In view of this the government will develop fiscal instruments such as PES to promote private sector participation in the restoration of degraded deltas and wetlands.

Protect riparian land in arid and semi-arid areas

In order to promote sand storage dams and water pans for livestock and small-scale cultivation, the government will provide an enabling environment through incentives towards these adaptation programs.

Provide green shore power as a viable alternative to contribute to emissions reductions at Kenya's seaports.

In order to promote investment in cold ironing as an alternative marine power to cover the energy demands of ships calling at the ports, the government will consider providing incentives to investors in green shore power supply

Provision of appropriate reception facilities for the control of emissions from ships

To control GHG emissions from the anticipated increase in the number of vessels coming to Kenya due to the expansion of the Port of Mombasa and the construction of the Lamu Port, the government will promote the establishment of vessel reception facilities that will ensure ozone depleting substances and vessel equipment containing such are handled and disposed appropriately.

Promote investments into low carbon ship bunkering infrastructure

4.1.3 Health and sanitation

Recognizing the threats that climate change and other environmental risks are posing to the health of Kenyans the government will undertake the following actions.

Combat increased incidence of malaria and other vector borne diseases. Climate change has resulted in an increase in the number of cases of malaria. The national and county governments will provide funding for research and innovation to control mosquitoes in an environmentally friendly manner, to help combat the increased malaria incidence.

partial root zone drying⁶² are technologies with potential for saving water which will be beneficial compared with the sprinkler irrigation system currently used by farmers. The government will therefore provide incentives to promote technologies for water-efficient irrigation systems

Reduction of post-harvest losses:

A lack of adequate storage of agricultural produce and poor post-harvest practices translate into low commodity prices, poor access to credit, and an inefficient agricultural value chain for small-scale farmers in Kenya. The result is to exacerbate food insecurity and increase the hunger risks posed by climate change.

To reduce post-harvest losses, the government will promote agro-processing and provide incentives that are aimed at increasing adoption of post-harvest storage technologies and equipment such cooling plants, on-farm storage technologies such as hermetic bags.

Green technology in crop production. The full potential of arable land productivity in Kenya has not yet been realized. Moreover, it is rare across Kenya to apply and utilize green technologies and strategies to promote sustainable productivity, even though these measures would improve food security. The government will incentivize the use of green technology and applying sustainable strategies in agricultural production. In particular, the policy will promote through fiscal policy interventions the use of *integrated crop management technology, organic farming and the use of low carbon emission equipment for cultivation*.⁶³

Livestock production. The government will explore opportunities and fiscal incentives to promote the adoption of improved adaptive and resilience technologies to increase livestock production and productivity by 2030. Additionally, the PES, discussed in section 4.25, will also have a strong impact on the land-use decisions and practices of farmers across the country.

Cooperative development and climate smart agricultural practices. Kenya faces ever growing fluctuations in climate and food prices which directly affect households' food acquisition and allocation. This raises food safety concerns. Additionally, population growth puts increasing pressure on land that is available for cultivation, thus exacerbating food insecurity in the country. In particular, population pressure has led to arable land fragmentation which translates into inefficient allocation of resources (labor and capital) leading to increased cost of production, and unsustainable farming.⁶⁴ To support advancements including land consolidation and mechanization and, hence, promote large-scale crop, livestock and fisheries production and value

⁶² Casa, R. and Roupheal, Y. (2014). Effects of partial root-zone drying irrigation on yield, fruit quality, and water-use efficiency in processing tomato. *The Journal of Horticultural Science and Biotechnology*, 89(4), 389-396.

⁶³ Deere & Company. (2017). Incentivizing sustainability in Agriculture. Press release. Retrieved 18th February 2021 from <https://digital.hbs.edu/platform-rctom/submission/a-deere-world-incentivizing-sustainability-in-agriculture/>

⁶⁴ Giertz, A., Caballero, J., Galperin, D., Makoka, D., Olson, J., and German, G. (2015). Kenya Agricultural Sector Risk Assessment.

incentives that support the adoption of bioengineering⁶⁵ for road infrastructure through the private and public sector (county and national) collaboration.

Integrate the circular economy into infrastructure development

The use of recycled materials in Kenya's infrastructure remains low yet these materials present significant social economic benefits and opportunity to enhance sustainability and resilience of infrastructure. To realize the sustainable development benefits, the government will provide fiscal incentives in the use of recycled materials in infrastructure development.

Support the circular economy in construction. To encourage the use of recycled materials within the construction sector (see the example below of Australian state of Victoria), the government will provide incentives for building materials locally manufactured using more than 40% recycled content in their production. The government will also provide incentives to encourage the establishment of facilities for the collection for resale and re-use of construction waste and materials. The government will also impose fees or levies on contractors to fund construction waste disposal that does not meet prescribed procedures of re-use and re-sale.

Support green building development. The government will provide incentives to developers that meet the requirements for green buildings specifications/codes. These include the design, production, importation and sale of alternative green building and construction technologies and materials. This will also include solar passive architecture to improve aeration and lighting in buildings (Energy Management Regulation, 2012). In addition, the government will incentivize research and development, for innovative technologies on green buildings and sustainable.

Supporting Adoption of Water and Energy Efficient Infrastructure: The government will incentivize construction of water and energy efficient buildings. In addition, all the design of new public buildings will integrate water and energy efficient measures in their construction and functioning.

4.1.7 Renewable Energy

To promote Renewable energy production and deployment and increase consumer connectivity the government will:

Phase-out fossil-fuel-based thermal electricity. The government will provide fiscal incentives needed to lower the cost of renewable energy relative to fossil fuel intensive energy sources. This

⁶⁵ A subset of green infrastructure that uses vegetation to serve an engineering function. The most common uses of bioengineering include soil surface protection against erosion, soil stabilization, and improved drainage functions.

Development of alternative transport fuels. Incentivize production of alternative transport fuel sources such as bio fuels (biogas, bioethanol, bioLPG, biodiesel) and green hydrogen.

4.1.11 Waste management

The government's actions in greening waste management value chain will be consistent with the Sustainable Waste Management Policy of 2021 and Sustainable Waste Management Policy Act, 2022. The government will provide the following fiscal actions:

Development of Material Recovery Facilities (MRF). Provide incentives for waste recovery facilities, circular economy, incentivize sanitary landfills and disincentivize dumpsites

Incentives for private sector engagement in waste management. The government will provide incentives to promote private sector involvement in the waste management sector, including tax incentives, removal of investment barriers, creation of a conducive investment climate, and incentivize access to finance.

Encouraging circular business models. The government is keen in providing a range of incentives to promote circular business models. These include incentivizing adoption of EPR regulations, encourage recycling, offering preferential use of recovered materials over virgin materials, and promote the procurement and use of recycled goods. Support innovative waste to energy technologies

4.2 Enhanced green financial intermediation actions:

4.2.1 Green investment bank

The government will develop a green investment bank that will provide a range of funding instruments and associated incentives to support the public and private sector in overcoming barriers to making green investments at scale. The institution will help address the perception and/or reality that the capital costs and risks of green investments are too high, and the returns too low. It would provide a range of financial instruments which could potentially include *credit guarantees, risk-reduction facilities, debt equity and blended finance*. It could also offer support and expertise to financing recipients and provide incentives to develop innovative financial instruments such as green bonds, blue bonds, resilience bonds and transactions using carbon credits.

The government will consult closely on the institutional design of a green investment bank. Considerations include which sectors it might focus on, the extent to which it might provide concessional versus market-priced capital, the products it might provide, and its appropriate institutional home and governance arrangements. The government currently expects that the new

Clean cooking targeting to achieve Universal Access to Modern Energy Cooking Services by 2028.

To expand the clean cooking market and ensure clean cooking for all, partial subsidies and performance-based incentives are required to support affordability and pay for public benefits; explore fiscal instruments that catalyse and spur market innovations that can deliver affordable clean-cooking solutions at scale.

A range of incentives are desired to unlock and accelerate the transition to modern and clean cooking. The options that will be considered include:

Incentives for clean cooking fuels and technologies. The government will incentivize and encourage the production, access and use of clean cooking fuels and technologies. This will include targeted incentives across the clean cooking supply and demand value chains. The intervention measures will aim to enhance affordability, availability, safety, efficiency while reducing exposure to household air pollution. Examples of appropriate innovative approaches include “pay-as-you-go” or “pay-as-you-consume” models, and other innovative models such as the “Mwananchi gas” program and smart metering for LPG. These incentives will also support efficient biomass conversion technologies and reduction of upfront costs of clean cooking solutions.

Enabling Markets for clean cooking services: To ensure a sustainable and inclusive market system for clean cooking solutions, there is need to develop standards, establish stove testing infrastructure across the country to support voluntary labelling and certification system and regulations to incentivize local production of cooking products and curb the proliferation of counterfeit imported products.

Investment in R&D of renewable energy: The Government will support investment in Research, Development and innovation on renewable energy as a means to close inherent information gaps and embrace informed policy and decision making. This will also include incentive options for private sector to conduct R&D.

Integration of cooking into national electrification programs: To support the mainstreaming of electric cooking, it is imperative that cooking is embedded into electrification programs to leverage from successes in both on and off-grid electrification. Towards this end, fiscal incentives could be considered to promote the uptake of electric cooking. These would include duty exemptions and VAT zero-rating for energy-efficient e-Cooking appliances (such as electric pressure cookers) and establishment of dedicated e-Cooking tariffs.

institution will be given a clear mandate to support climate change mitigation and adaptation and green growth, but it will be important to ensure coherence with existing and planned funding institutions in Kenya.

The government recognizes the importance of developing robust governance and accountability mechanisms, and appropriate staffing structures, if the institution is to be successful in gaining the confidence of the private sector and leveraging significant new capital flows. Throughout, we will look to build on the growing international experience of green investment banks observed across the world, and the critical factors supporting their success.

There is a range of other complementary fiscal actions that the government intends to explore to promote green investments.

To direct investment to products and projects that have positive environmental impact, the government will set up the Green Investment Register (GIR). The GIR will be a database of green investments (building from a recent report, *The landscape of Climate Finance in Kenya on the road to Implementing Kenya's updated NDC, 2021*⁶⁷), comprising national priority projects in the green sector, flagship green projects and green public-private partnerships. Establishing this database, and the information management system enabling investors to access it and intensive resources mobilization, could potentially be early activities taken forward by Kenya Green Investment Bank (KeGIB).

The government will promote green public procurement at national and county government level by developing guidelines to include environmental parameters in procurement.

The government will reform and increase financial support of research and development in the innovation and production of green technologies. Public funds that support green research, such as NRF, NETFUND, and the National Climate Change Fund (NCCF), will be capitalized and expanded to support innovation and local production/assembly of green technologies, ensuring complementarity between these initiatives and KeGIB. Particular attention will be paid to research on and development of battery energy storage, energy optimization technologies, grid infrastructure, light electric train, electric vehicles, tree growing and management, water harvesting schemes, small to medium irrigation systems, green buildings, payment for ecosystem, credit guarantees based on investors nature capital potential, demonstration projects and field trials, and the expansion of charging infrastructure.

The government will work with industry leaders to identify green innovation and technology needs and review the research policies and strategies in order to align them with prioritized green

⁶⁷ CPI (2021) *The Landscape of Climate Finance in Kenya*. Available at: <https://www.climatepolicyinitiative.org/publication/the-landscape-of-climate-finance-in-kenya/>

CHAPTER 5: IMPLEMENTATION, GOVERNANCE AND INSTITUTIONAL ARRANGEMENTS

As the implementation of the green fiscal incentive policy takes effect, it is essential to establish a robust monitoring, evaluation, and learning framework. This framework will enable the policy's impact to be closely monitored, and its effectiveness periodically evaluated to draw essential lessons that will enhance its efficacy over time. The evolving market context requires a flexible and adaptable approach to governance and institutional arrangements, and the policy's success will depend on the ability to respond to changes and emerging challenges. The matrix below provides an overview of the policy's implementation process.

GREEN FISCAL ACTIONS TO REDUCE EMISSIONS						
Policy Area/Sector	Policy (Fiscal) Action	Policy (Fiscal) Activities	Key Performance Indicator	Lead Actors (see table legend)	Time Frame	Cost
Cross-cutting	Green investment bank	<ul style="list-style-type: none"> Design, develop and institute a green investment bank Develop credit guarantee instruments and schemes to enhance access to finance by green investments Develop financing mechanisms/instruments to support access to concessional credit lines for green investments Consult on priority sectors for green investments Develop a green register and information system of prioritized national green investments portfolio (legibility list) 	<ul style="list-style-type: none"> Amount (KES) mobilized and lent via green investment bank GHG reductions attributable to green investment bank investments Percentage increase in green investments Number of resilient infrastructures Number of beneficiaries accessing the investment Capitalization levels 	<ul style="list-style-type: none"> NT MOTI MOEF 	•	•
	Carbon tax	<ul style="list-style-type: none"> Design and legislate for carbon tax in government budget Decide carbon tax rate, coverage, and how to allocate revenues 	<ul style="list-style-type: none"> Revenues raised through carbon tax GHG reductions achieved through carbon tax 	<ul style="list-style-type: none"> NT MOEF 	•	•

GREEN FISCAL ACTIONS TO REDUCE EMISSIONS						
Policy Area/Sector	Policy (Fiscal) Action	Policy (Fiscal) Activities	Key Performance Indicator	Lead Actors (see table legend)	Time Frame	Cost
Water and the Blue Economy	Enhance water harvesting, storage and flood mitigation	<ul style="list-style-type: none"> Implement fiscal measures to reduce acquisition/installation cost of equipment used for water harvesting, storage and flood-mitigation infrastructure 	<ul style="list-style-type: none"> Amount of new equipment sold to farmers and agricultural companies 	<ul style="list-style-type: none"> NWHTSA MOWSI NT 	•	•
	Promote water efficiency	<ul style="list-style-type: none"> Institute fiscal measures for innovations and equipment that promote efficient use of water 	<ul style="list-style-type: none"> Sales of water-use efficient equipment 	<ul style="list-style-type: none"> MOWSI MOTI 	•	•
	Elimination of invasive species	<ul style="list-style-type: none"> Develop fiscal policies to encourage research and innovations on the utilization of invasive species (such as hyacinth and mathenge weed) as raw materials 	<ul style="list-style-type: none"> Amount of grants commissioned for relevant research 	<ul style="list-style-type: none"> MEF, MOTI KIRDI 	•	•
	Promote sustainable fishing and restoration of coastal ecosystems	<ul style="list-style-type: none"> Impose tax measures on large-scale fishing companies and trawlers to promote sustainable fishing Implement appropriate fiscal policies for the restoration of shallow coastal water ecosystems, such as mangroves, tidal marshes and sea grass beds 	<ul style="list-style-type: none"> Fish stock levels Mangrove, tidal marsh and sea grass area and carbon sequestration 	<ul style="list-style-type: none"> State Dept for Fisheries KFS NT 	•	•
	Restoration of degraded wetlands	<ul style="list-style-type: none"> Develop fiscal instruments to encourage private sector participation in the restoration of degraded wetlands 	<ul style="list-style-type: none"> Number of private companies engaged in wetlands restoration 	<ul style="list-style-type: none"> MEF NEMA MOWSI 	•	•
Health and Sanitation	Combat increased incidence of Malaria	<ul style="list-style-type: none"> Research grants availed for bio-control of mosquitoes 	<ul style="list-style-type: none"> Research reports identifying methods and techniques for bio-control of mosquitoes 	<ul style="list-style-type: none"> MOH KEMRI 	21/22-26/27	TBD

GREEN FISCAL ACTIONS TO REDUCE EMISSIONS						
Policy Area/Sector	Policy (Fiscal) Action	Policy (Fiscal) Activities	Key Performance Indicator	Lead Actors (see table legend)	Time Frame	Cost
	Green technology in crop production	<ul style="list-style-type: none"> Incentivize the use of green technology in agricultural production – electric trucks, integrated crop management technology, organic farming 	<ul style="list-style-type: none"> Number of county governments that adopt the agricultural training under their extension activities Sales of electric tractors 	<ul style="list-style-type: none"> NT MOALFC 	FY 2022/2024	TBD
	Cooperative development for sustainable agriculture	<ul style="list-style-type: none"> Incentivize cooperative development that supports strategies including land consolidation and mechanization and, hence, promotes large-scale crop production and value addition 	<ul style="list-style-type: none"> Number of farmers trained in sustainable agriculture Acres of land consolidated under cooperatives 	<ul style="list-style-type: none"> NT MOALFC 	FY 2022/2024	TBD
	Land rehabilitation	<ul style="list-style-type: none"> Explore government programs to protect and rehabilitate degraded lands 	<ul style="list-style-type: none"> Acres of land rehabilitated 	<ul style="list-style-type: none"> MOEF, MOALFC 	•	•
	Livestock production	<ul style="list-style-type: none"> Explore policies and fiscal incentives to promote adaptive technologies 	<ul style="list-style-type: none"> Agricultural productivity (production per acre of pasture) 	<ul style="list-style-type: none"> MOALFC 	•	•
Forests, Wildlife and Tourism	Promote tree planting	<ul style="list-style-type: none"> Consider options for promoting tree planting on public and private lands, to reach 10% of land covered by forest 	<ul style="list-style-type: none"> Forest cover percentage of total land 	<ul style="list-style-type: none"> MOEF 	•	•
	Reduce pressure on forests	<ul style="list-style-type: none"> Promote investments in sustainable bioenergy and clean cooking fuels 	<ul style="list-style-type: none"> Market share of bioenergy as cooking and heating fuel 	<ul style="list-style-type: none"> MOEF 	•	•
	Ecological fiscal transfers	<ul style="list-style-type: none"> Explore EFTs as part of funding strategy for county governments 	<ul style="list-style-type: none"> Change in deforestation rate by county 	<ul style="list-style-type: none"> MOEF NT 	•	•

GREEN FISCAL ACTIONS TO REDUCE EMISSIONS						
Policy Area/Sector	Policy (Fiscal) Action	Policy (Fiscal) Activities	Key Performance Indicator	Lead Actors (see table legend)	Time Frame	Cost
Electricity	Phase out fossil-based thermal energy.	<ul style="list-style-type: none"> Fiscal incentives to encourage setting construction waste/materials re-use facilities Incentives for importation/ local manufacture and sale of water-saving devices Ministry of Energy to identify thermal power plants that require phase-out Negotiate with independent power providers for a mutual plan for phase-out Accelerate development of green power generation options Accelerate the process of hybridization of the existing isolated power stations with solar/wind 	<ul style="list-style-type: none"> Number of power plants with agreed timelines for phase-out 	<ul style="list-style-type: none"> MOE MOITE NT County governments 	•	•
	Support geothermal development	<ul style="list-style-type: none"> Provide concessional funding or public support to pre-investment geothermal resource assessments 	<ul style="list-style-type: none"> Funds mobilized/ allocated for geothermal developments 	<ul style="list-style-type: none"> MOE MOITE NT 		
	Expand off-grid electricity solutions	<ul style="list-style-type: none"> Consider tax exemptions and credits for off-grid renewable energy installations 	<ul style="list-style-type: none"> Off-grid renewable energy installed and connected capacity 	<ul style="list-style-type: none"> MOE MOITE NT 		
	Incentives for electricity connection	<ul style="list-style-type: none"> Design consumer-level incentives that promote electricity connectivity 	<ul style="list-style-type: none"> Number of households connected to electricity grid 	<ul style="list-style-type: none"> MOE NT 		

GREEN FISCAL ACTIONS TO REDUCE EMISSIONS						
Policy Area/Sector	Policy (Fiscal) Action	Policy (Fiscal) Activities	Key Performance Indicator	Lead Actors (see table legend)	Time Frame	Cost
		vehicles, motorcycles and their spare parts				
	Support for charging infrastructure	<ul style="list-style-type: none"> Offer incentives for electric vehicle and e-mobility infrastructure 	<ul style="list-style-type: none"> Number of electric vehicle chargers installed 	<ul style="list-style-type: none"> MOT NT 		
	Congestion charging	<ul style="list-style-type: none"> Explore congestion charging in major cities 	<ul style="list-style-type: none"> Congestion charging schemes adopted Changes in traffic following implementation of congestion charge 	<ul style="list-style-type: none"> NT City governments 		
	Transport fuel taxation	<ul style="list-style-type: none"> Consider changes in transport fuel tax rate, particularly in combination with carbon tax 	<ul style="list-style-type: none"> Fuel-use changes compared to growth in vehicle miles traveled 	<ul style="list-style-type: none"> NT MOT 		
Waste management	Develop a comprehensive financing strategy	<ul style="list-style-type: none"> Establish a waste management fund mechanism to incentivize sustainable approaches as part of a broader finance strategy 	<ul style="list-style-type: none"> Funds distributed to sustainable waste management companies 	<ul style="list-style-type: none"> MOEF NT 		
	Incentives for private sector engagement in waste management	<ul style="list-style-type: none"> Explore incentives to encourage private sector firms into waste management sector 	<ul style="list-style-type: none"> Number of private firms operating in waste management and meeting sustainability criteria 	<ul style="list-style-type: none"> MOEF NT 		
	Effluent fee charges	<ul style="list-style-type: none"> Consider effluent fees to promote greener waste management 	<ul style="list-style-type: none"> Revenue raised through effluent charges 	<ul style="list-style-type: none"> MOEF NT 		
	Encouraging circular business models	<ul style="list-style-type: none"> Explore circular business model incentives 	<ul style="list-style-type: none"> Rate of recycling among Kenyan households and businesses 	<ul style="list-style-type: none"> MOEF NT 		

MoH	Ministry of Health
MoITE	Ministry of Industrialization, Trade and Enterprise
MoT	Ministry of Transport
MoTI	Ministry of Trade and Industry
MoWSI	Ministry of Water, Sanitation and Irrigation
MTPs	Medium Term Plans
MTW	Ministry of Tourism and Wildlife
NACOSTI	National Commission for Science, Technology and Innovation
NAMA	National Appropriate Mitigation Action
NCCAPs	National Climate Change Action Plans
NDC	Nationally Determined Contributions
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority
NEMA	National Environment Management Authority
NRF	National Research Fund
NT	National Treasury
NWHSA	National Water Harvesting and Storage Authority
PBK	Pyrethrum Board of Kenya
PET	polyethylene terephthalate
PIM	Public Investment Management.
R&D	Research and Development
SDG	Sustainable Development Goals
T2GS	Tree Growing Guarantee Scheme
TACs	Total Allowable Catches
TSOF	Three Stone Open Fire
TSS	Total suspended Solids
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Organization
USA	United States of America
USD	United States Dollar
VAT	Value Added Tax
VoCA	Voluntary Conservation Agreements
WFW	Working for Water
WHO	World Health Organization
WWDA	Water Works Development Agency