



**EAST AFRICAN CIVIL SOCIETY FOR
SUSTAINABLE ENERGY AND CLIMATE
ACTION
(EASE&CA)**

KENYA NATIONAL BASELINE STUDY REPORT

SEPTEMBER 2019



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**EASE –CA Project
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INFORSE-East AFRICA
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The Baseline Studies are based on the Studies of the NGO cooperation Project "Promoting the Implementation of the Paris Agreement in East Africa (PIPA) in 2017-18.

The series of the EASE-CA Baseline Studies are:

- National Baseline Studies: Uganda, Kenya, and Tanzania
- East Africa Regional and International Baseline Study.
- Local Baseline for three districts in Uganda

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More on the EASE-CA Project: www.inforse.org/africa/EASE.htm

Acronyms and abbreviations

AFOLU	Agriculture, Forestry, and Other Land Use
AFR 100	African Forest, Landscape restoration Initiative
AYICC	African Youth Initiative on Climate Change
BAU	Business-As-Usual
BRT	Bus Rapid Transit
CCLK	Climate Change Legislation in Kenya
CCD	Climate Change Directorate
CH4	Methane
CIC	Climate Innovation Center
CO2e	Carbon Dioxide Equivalent
COP	Conference of the Parties
CSA	Climate Smart Agriculture
CVF	Climate Vulnerable Forum
EASE-CA	East African CSOs for Sustainable Energy & Climate Action
EPRA	Energy and Petroleum Regulatory Authority
ERC	Energy Regulatory Commission
FCPF	Forest Carbon Partnership Facility
FiT	Feed in Tariff
FREL/FRL	Forest Carbon Partnership Facility
GCF	Global Climate Fund
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GESIP	Green Economy Strategy and Implementation Plan
GHG	Green House Gas
GW	Gigawatt
INDC	Intended Nationally Determined Contribution
INFORSE	International Network for Sustainable Energy

IPCC	Intergovernmental Panel on Climate Change
KAM	Kenya Association of Manufacturers
KIRDI	Kenya Industrial Research and Development Institute
LEDS	Low Emission Development Strategies
LULUCF	Land Use, Land Use Change and Forestry
MtCO ₂ e	Metric tons of Carbon dioxide equivalent
ME&F	Ministry of Environment and Forestry
MEP	Ministry of Energy and Petroleum
MTP	Medium Term Plan
MW	Megawatt
MRV	Measuring, Reporting and Verification
NAP	National Adaptation Plan
NAMA	Nationally Appropriate Mitigation Actions
NACOSTI	National Commission for Science, Technology and Innovation
NCCAP	National Climate Change Action Plan
NCCRS	National Climate Change Response Strategy
NDC	Nationally Determined Contribution
NIE	National Implementing Entity
NFM	National Forest Monitoring System
NPEA	Nuclear Power and Energy Agency
NRF	National Research Foundation
PA	Paris Agreement
PIPA	Promoting Implementation of Paris Agreement
REDD+	Reducing Emissions from Deforestation and Forest Degradation
REREC	Rural Electrification and Renewable Energy Corporation
SE4All	Sustainable Energy for All
SDGs	Sustainable Development Goals
SGR	Standard Gauge Railway
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

Executive summary

This report is an update of the baseline study carried out in early 2017 during implementation of the project titled “Promoting Implementation of the Paris Agreement (PIPA) in East Africa”

East African Civil Society for Sustainable Energy & Climate Action (EASE&CA) is a three-year project (July 2019-July 2022) implemented in Tanzania, Kenya and Uganda under the support of CISU. The main objective of the EASE&CA project is to increase access to sustainable energy and other climate solutions to local communities in Uganda, Kenya and Tanzania with both women’s and men’s full and effective participation and leadership for improved livelihoods and reduction of poverty. This will be realized by combining Civil Society Organization (CSO) activities at local, national and international levels in ways, where they reinforce each other. The project primarily works towards Sustainable Development Goal (SDG) 1 (poverty), SDG5 (gender), SDG7 (clean energy), SDG 13 (climate action), SDG 17 (partnerships).

The overall objective of the Baseline Study is to document the current status of sustainable energy and other climate actions at the national level to establish a benchmark against which achievement of EASE-CA will be measured. Further, the study aims to identify opportunities for advocacy and lobbying for increased access to sustainable energy and other climate actions and to map out CSOs and SMEs in sustainable energy and other climate solutions. The methodology of the study included a combination of literature review and stakeholder consultations.

The adoption of the Paris Agreement at the 21st session of the Conference of the Parties (COP 21) to the United Nations Framework Convention on Climate Change (UNFCCC) was a historic moment, providing a universal platform for all countries, developing and developed, to take action towards an agreed common goal. The Paris Agreement sets the goal of holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change, and to achieve no net emissions in the second half of the century.

Parties to the Paris Agreement are expected to determine at the national level, based on their circumstances, what actions they are willing and able to take to achieve this goal, and communicate this through their Nationally Determined Contributions (NDCs). In this context, NDCs are national climate change action plans that detail road-maps for achieving GHG emission reduction targets and adaptation goals. Kenya has developed a National Climate Change Response Strategy (NCCRS 2010), National Climate Change Action Plan (NCCAP 2018-2022), Climate Change Act (2016), Energy Act 2019, a framework Climate Change Policy and a National Adaptation Plan (NAP), which provide

a vision for low-carbon and climate resilient development pathway. Kenya is operationalizing these policies and plans through the implementation of climate change actions in various areas such as afforestation and reforestation, geothermal and other clean energy development, energy efficiency, climate smart agriculture, and drought management.

In order to enhance citizen action on climate change mitigation, adaptation and resilience, existing climate change governance framework should be interrogated to trigger its implementation. The Climate Change Act, 2016 provides overarching climate legislation with regard to; policy coordination and oversight, response measures and actions, public participation and access to information as well as financial provisions.

Periodic analysis to unpack complex issues and research to facilitate evidence-based advocacy will uphold the relevance of civil society contribution in policy-making processes as well as implementation of actions. Partnerships with government, private sector, and academia/research institutions will be instrumental in providing synergy in policy making, research and implementation hence well-informed decisions and prudent utilization of resources with respect to the Country climate action needs.

CHAPTER ONE

INTRODUCTION

Throughout the entire modern age, mankind has used fossil fuels to meet its energy requirements. Coal, oil and natural gas have lit homes and powered machinery for centuries, driving civilization forward. But as human development accelerated, the unsustainability of such energy became apparent. Global fuel supplies deteriorated and the atmosphere became more polluted. The search for renewable sources of energy began, to ensure a sustainable future.

Today, our civilization stands at a critical juncture. We are on the cusp of adopting clean energy at a scale never seen before. But for renewable power to continue its rapid advancement, the right decisions need to be taken.

When clean energy first made headway in the global scenario, questions were raised about how stable and scalable it was. At a macro level, unstable policies for powering future growth were exacerbated by technological immaturity and lack of funding. Nevertheless, clean energy installations continued to grow, albeit slowly, until a dramatic leap a few years ago.

Today, a fifth of the world's electricity is produced by renewable energy. In 2016, there were 160GW of clean energy installations globally. This is 10% more than in 2015, but they cost almost a quarter less. New solar power gave the biggest boost, providing half of all new capacity, followed by wind power, which provided a third, and hydropower, which gave 15%. It was the first year in history that added solar capacity outstripped any other electricity-producing technology.

An unprecedented drop in the cost of producing clean energy has occurred in the last couple of years. It is becoming the cheapest source of power for more and more countries. Both solar and wind power have undergone an annual average percentage drop in cost of production in the mid to high teens. These heady declines in cost are likely to continue over the next decade.

Given its increasing affordability, the applications and use cases of renewable energy have broadened. Alongside electricity production, it is providing new solutions for mobility and energy security worldwide.

The commercial energy sectors in Kenya are largely dominated by petroleum and electricity, with wood fuel providing the basic energy needs of the rural communities,

urban poor, and the informal sector. An analysis of the national energy shows heavy dependency on wood fuel and other biomass that account for 68% of the total energy consumption (petroleum 22%, electricity 9%, others account for 1%). Electricity access in Kenya is low despite the government's ambitious target to increase electricity connectivity from the current 15% to at least 65% by the year 2022.

Kenya has an installed capacity of 2.3 GW. Whilst about 57% is hydro power, about 32% is thermal and the rest comprises geothermal and emergency thermal power. Solar PV and Wind power played a minor role contributing less than 1% until the Turkana Wind Park was inaugurated in 2019. However, hydropower has ranged from 38-76% of the generation mix due to poor rainfall. Thermal energy sources have been used to make up for these shortfalls, varying between 16-33% of the mix.

This generation energy mix comprises 52.1% from hydro, 32.5% from fossil fuels, 13.2% from geothermal, 1.8% from biogas cogeneration and 0.4% from wind, respectively. Current electricity demand is 1,600 MW and is projected to grow to 2,600-3600 MW by 2020.

Households in Kenya use the following source for lighting:

- Electricity - about 15% of the national populace.
- Use of electricity in urban areas as the source of lighting - 42%; although kerosene lamps still remain the main source of lighting for 55% of households.
- Kerosene for lighting in rural households - 87%

Societies and nations around the globe need to reduce anthropogenic greenhouse gas emissions to avoid worsening climate impacts and reduce the risk of creating changes beyond our ability to respond and adapt. The United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol has for many years governed the global climate change agenda with mixed outcomes. In order to increase ambition, the global community agreed to the Paris Agreement on December 12, 2015 during the 21st session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC).

The Paris Agreement sets the goal of holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change, and to achieve no net emissions in the second half of the century. Parties to the Agreement are expected to determine at the national level what actions they are willing and able to take to achieve this goal, and communicate this through their Nationally Determined Contributions

(NDCs). In this context, NDCs are national climate change action plans that detail roadmaps for achieving GHG emission reduction targets and adaptation goals. Parties are expected to submit a new NDC every five years, and each NDC should represent an increase in ambition.

Even though the Paris Agreement is a treaty under international law, only certain provisions of it are legally binding. In a broad sense, the Agreement reflects a hybrid approach that blends bottom-up flexibility aimed at achieving broad participation by the community of nations, with top-down rules that promote accountability and ambition. The Paris Agreement entered into force in November 2016. Kenya ratified the Agreement in December 2016.

Kenya, like other countries in the region, is bearing the brunt of climate change impacts and the associated socio-economic losses. The fact that Kenya's economy is highly dependent on its natural resource base and climate-sensitive sectors including agriculture, energy, transport, tourism and water, makes it highly vulnerable to climate change and variability. Bearing the greatest brunt of climate change and variability are the vulnerable groups including the poor, women, elderly, children, youth and physically challenged persons. In recent decades, Kenya has witnessed an increasing frequency and intensity of extreme weather and climate events such as droughts and floods. Future projections of rainfall and temperature indicate increasing frequency and intensity of droughts and floods, which could threaten efforts towards sustainable development.

1.1 Summary of current NDC

Intended Nationally Determined Contribution (INDCs) are the actions and targets that countries have signaled they will undertake to help keep global temperatures from rising more than 2 degrees Celsius. The INDCs are not legally binding commitments, however; they ultimately play a critical part in determining whether the world achieves an ambitious 2015 agreement thus it is put on a path toward a low carbon, climate-resilient future.

Kenya submitted its Intended Nationally Determined Contribution (INDC) in 2015 as part of its obligations as a signatory and party to the United Nations Framework Convention on Climate Change (UNFCCC). Following the unexpected early entry into force of the Paris Agreement (PA) in November 2016, all INDCs became anchored in the PA as five-year NDC iterative cycles. When Kenya submitted its ratification instruments in December 2016, it confirmed its earlier submitted INDC to be its NDC. As such all, the information contained in its now Nationally Determined Contribution (NDC) remain current, which reiterates that adaptation is Kenya's priority response to climate change. The specific NDC sectors are based on the IPCC guidelines: energy, transportation, industrial

processes, waste, agriculture, forestry and other land use (AFOLU). The greenhouse gasses (GHGs) Kenya priorities are Carbon Dioxide (CO₂), Methane (CH₄) and Nitrous Oxide (N₂O) (King'uyu, CC Directorate, Ministry of Environment and Natural Resources).

In Kenya, the phenomenon of climate change is already unmistakable and intensifying at an alarming rate, as is evidence in the countrywide temperature increases and rainfall irregularity and intensification. Climate shocks in Kenya such as floods and drought have increased in frequency over the last decade they contribute to economic losses estimated at 3% of the country's Gross Domestic Product (GDP). The two rains known to commence within the same weeks every year are now unpredictable (NCCRS, 2010). Consequently, these extreme events have had negative socio-economic impacts on almost all sectors such as health, agriculture, livestock, environment, hydropower generation and tourism. Drought is the prime recurrent natural disaster in Kenya where more than 80% of the country's landmass is arid and semi-arid land (ASAL) with poor infrastructure, and other developmental challenges (CCLK, 2016).

Kenya's pledge to reduce emissions involves both mitigation and adaptation based on the country national circumstances. With Kenya bearing the brunt of climate change impacts and the associated socio-economic losses, the NDC represents Kenya's aspiration to increase the resilience to climate change by introducing a comprehensive program for adaptation action across sectors in support of livelihoods and economic well-being of the Kenyan people.

1.2 Objective of the Baseline Study

The overall objectives of this study are to assess the current national situation with regards to sustainable energy and other climate actions to identify relevant national processes for CSO engagement, and to map stakeholders (particular CSOs), and their involvement aiming increased implementation.

The Study will be used as basis for designing effective intervention including development of policy recommendations in the framework of the EASE-CA project in 2019-22.

1.3. Methodology of the study

The Baseline Study was conducted via literature review. This involved available written national information such as reports, policy, strategies, plans, papers and the Baseline Study prepared to the PIPA project in 2017-18.

CHAPTER TWO

ENABLING POLICIES AND LEGAL FRAMEWORKS FOR ADOPTION OF SUSTAINABLE ENERGY IN KENYA

2.1 Global frameworks

2.1.1 Nationally Determined Contributions (NDCs)

Anchored within the historic Paris Agreement (2015), Nationally Determined Contributions (NDCs) are the actions and targets that countries have signaled they will undertake to help keep global temperatures from rising more than 2 degrees Celsius. The NDCs are not legally binding commitments, however; they ultimately play a critical part in determining whether the world achieves an ambitious 2015 agreement.

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The specific NDC sectors are based on the IPCC guidelines: energy, transportation, industrial processes, waste, agriculture, forestry and other land use (AFOLU). The specific actions are documented as below:

Table 1: Proposed actions in the Kenya NDC

Strategic Action	Sector
Expansion in geothermal, solar and wind energy production, other renewables, and clean energy options	Energy
Enhancement of Energy and resource efficiency across the different sectors	Energy
Clean energy technologies to reduce overreliance on wood fuels.	Energy and Forestry
Make progress towards achieving a tree cover of at least 10% of the land area of Kenya.	Forestry
Low carbon and efficient transportation systems	Energy and transport
Sustainable Waste management systems	waste
Climate smart agriculture in line with the National CSA Framework	Agriculture

The greenhouse gases (GHGs) Kenya prioritizes Carbon Dioxide (CO₂), Methane (CH₄) and Nitrous Oxide (N₂O) (King'uyu, CC Directorate, Ministry of Environment and Forestry). Kenya's total greenhouse gas (GHG) emissions are relatively low, standing at 73 MtCO₂eq in 2010 out of which 75% are from the land use, land-use change and forestry (LULUCF) and agriculture sectors (Kenya INDC, 2015). This may be explained by the reliance on wood fuel by a large proportion of the population coupled with the increasing demand for agricultural land and urban development. The other significant emissions are from the energy and transport sectors, with the waste and industrial processes contributing negligible amounts.

Therefore, Kenya seeks to abate its greenhouse gas emissions by 30% by 2030 relative to the BAU scenario of 143 MtCO₂eq (Kenya NDC, 2015). The NDC also proposes reducing vulnerability and addressing adaptation in different priority sectors, including agriculture, infrastructure, waste, transport, and energy.

To achieve this target, Kenya aims to produce 5,530MW of geothermal power or 26% of total potential. Making it Kenya's largest source of clean energy by 2030. Other options include expansion of solar and wind production and other renewables. GHG emissions from transport are projected to grow significantly from 6 MtCO₂e in 2010 to almost 18 MtCO₂e in 2030 (NCCAP, 2013). Other projections are as shown in the table below.

Table 2: Emission reduction potential by sector: Technical potential and NDC 30% GHG emission reduction targets

Sector	2015			2030		
	SNC BAU Baseline	Revised Baseline	% Change	SNC BAU Baseline	Revised Baseline	% Change
Energy Demand	6.6	6.9	4.5%	9.9	10.9	10.2%
Transportation	9.1	10.6	15.5%	21.0	24.2	15.6%
Electricity Generation	1.2	1.1	-10.9%	41.6	35.5	-14.6%
Industrial Processes	3.1	3.5	12.4%	5.5	6.3	13.1%
Agriculture	31.6	32.6	3.1%	38.7	39.6	2.2%
Waste	2.4	2.4	-0.7%	4.8	4.8	-1.0%
LULUCF	26.0	26.0	0.0%	22.1	22.1	0.0%
TOTAL	80.1	83.0	3.7%	143.6	143.3	-0.2%

Source: Government of Kenya (2015), Second National Communication, page 172

More specifically, Kenya's mitigation NDC is based on its National Climate Change Action Plan, 2018-2022 (NCCAP), which sets out a low carbon development pathway that supports efforts towards the attainment of Vision 2030.

Plans to review the NDC

The implementation of NDC in Kenya is anchored on the Country's policies, programs, visions, strategies and actions that are subject to be reviewed regularly. Besides, COP 21 of December 2015 outcome proposes the review of NDC in each country by 2023 beginning from 2018. In Kenya, the review of the NDC is set to take place in March 2020 (Climate Change Directorate).

2.1.2 Nationally Appropriate Mitigation Actions (NAMAs)

NAMAs refer to a set of policies and actions that countries undertake as part of a commitment to reduce greenhouse gas emissions. The term recognizes that different countries may take different nationally appropriate actions on the basis of equity and in accordance with common but differentiated responsibilities and respective capabilities. It also emphasizes financial assistance from developed countries to developing countries to reduce emissions.

NAMA was first used in the Bali Action Plan as part of the Bali Road Map agreed at the United Nations Climate Change Conference in Bali in December 2007. Kenya has since been implementing several projects in line with reduction of emissions and even submitted the geothermal project for funding to a tune of about 48 billion Kenya shillings.

2.1.3 Low Emission Development Strategies (LEDS)

Low emission development strategies (LEDS) are development frameworks that promote sustainable social and economic development while reducing greenhouse gas emissions over the medium to long term. Kenya has developed policies that align with these LEDS outcomes. For example, Kenya Vision 2030 includes a National Climate Change Action Plan highlighting the importance of developing a secure, climate resilient national grid that can support Kenya's development ambitions. Kenya has a 5-year domestic planning and implementation timeframe for this initiative. In addition, Kenya's Draft National Energy and Petroleum Policy (2015) aims to ensure an affordable, competitive, sustainable, and reliable supply of energy to meet national development needs at the lowest cost, while protecting and conserving the environment (MEP, 2015). Kenya's Climate Change Act emphasizes the need to reduce greenhouse gas emissions and encourage the use of renewable energy as a mitigation measure.

However, the country has also developed and launched the *Green Economy Strategy and Implementation Plan (GESIP 2016-2030)* in place of a LEDS document. The document provides the overall policy framework to facilitate a transition to a green economy and outlines the need to mainstream and align green economy initiatives across the economic, social and environmental spheres. It provides a blueprint for enhancing low-carbon, resource efficient, equitable and inclusive socio-economic transformation. Furthermore, it focuses on binding social economic constraints towards attaining Kenya Vision 2030 and is aligned with the outcomes of the United Nations Conference on Sustainable Development (Rio+20).

The document outlines 5 thematic areas of intervention and these are:

1. *Promotion of sustainable infrastructure*: Includes increasing share of renewable energy in the national grid to about 70%; climate proofing infrastructural designs; promote use of bio-energy at household level, public institutions and commercial enterprises
2. *Building resilience*: Includes improving access to markets and relevant infrastructure for vulnerable communities; technology development and transfer including promotion of locally available technologies; growth of fast maturing, high value trees
3. *Sustainable natural resource management*: Includes promotion of nature based enterprises; promote community participation in conservation

4. *Promoting resource efficiency*: Includes developing sector specific energy efficiency indicators and benchmarks; continually review national and county policies to respond to new technologies and frameworks; managing waste as a resource
5. *Social inclusion and sustainable livelihoods*: Promote green innovation and technology development; accelerate creation of green jobs; mainstream green economy in all forms of education and training

Other proposed measures to realize mitigation targets includes the REDD+ process is also a measure that presents a great opportunity to reduce forest sector emissions by providing innovative approaches, including incentives that support the implementation of a comprehensive sustainable forest management and conservation strategies. Hence, Kenya's participation in the REDD+ process is premised on the conviction that the process holds great potential in supporting a number of development goals in the country. Including realization of the constitution objective of increasing forest cover to a minimum of 10%, access to international carbon finance to support investment in the forestry sector, design policies and measures to protect and improve forest resources (Gichu, 2017). This is in the realization of the national climate change goals and contribution to global climate change mitigation and adaptation efforts. In addition, REDD+ is connected to a number of policies with the same objective such as the National Forest program and Climate Change Action Plan, among others.

2.2 National frameworks

2.2.1 Kenya's constitution 2010

Under the fourth Schedule of the Constitution of Kenya 2010, the Ministry of Energy, on behalf of the National Government, is responsible for energy policy and regulation of electricity and gas reticulation while County Governments are responsible for planning and development of electricity and gas reticulation and regulation.

Energy is one of the key enablers of the Vision 2030 and energy security remains a matter of national priority. The Third Medium Plan 2018-2022 identifies energy as one of the enablers for transformation into "a newly-industrializing, middle-income country providing a high quality of life to all its citizens in a clean and secure environment". Access to competitive-priced, reliable, quality, safe and sustainable energy is essential for achievement of the Kenya Vision 2030.

2.2.2 National Climate Change Action Plan (2018-2022)

Kenya first drafted a climate change action plan in 2013. The document is a 5-year action

plan that was developed for the implementation of the National Climate Change Response strategy (NCCRS 2010). The National Climate Change Action Plan (NCCAP) 2018-2022 is a successor of the 2013-2017 action plans. And like its predecessor, guides Kenya's climate change actions, including the reduction of greenhouse gas emissions. The Plan is a requirement by the Climate Change Act, 2016, which seeks to further Kenya's development goals by providing mechanisms and measures to achieve low carbon climate resilient development, in a manner that prioritizes adaptation. The Plan also sets out initiatives that foster movement towards the achievement of Kenya's Nationally Determined Contribution (NDC) under the Paris Agreement. The country's NDC includes greenhouse gas emission reductions of 30% by 2030 from the "business as usual" scenario, mainstreaming of climate change adaptation into the Government's planning processes, and implementation of adaptation actions.

The strategic actions outlined in the NCCAP (2018-2022) are aligned to the current government's Big 4 agenda on Food, nutrition and Security, Affordable housing, Affordable healthcare and enhanced manufacturing. The actions are also aligned to the Country's development blue print Vision 2030, which informs the programs outlined in the 5 year Medium Term Plans and the Global Goals.

Some of the actions within the NCCAP (2018-2022) include:

Action	Expected Results Adaptation/ mitigation by 30th June 2023	Adaptation/ Mitigation
1. Infrastructure		
Reduce fuel consumption and fuel overhead costs	<ul style="list-style-type: none"> ■ Standard Gauge Railway (SGR) from Nairobi to Mombasa electrified; ■ 30% of freight from Mombasa to Nairobi shifted from road to rail; ■ Roadmap for the improvement of heavy-duty truck efficiency developed, including increased use of low-rolling resistance tyres, super structure fittings etc. and, development of vehicle standards; ■ Light-duty vehicle fuel economy improved through labeling, promotion of fuel-efficient driving, and improved traffic management. 	Mitigation
Encourage low-carbon technologies in the aviation and maritime sectors	<ul style="list-style-type: none"> ■ Shore power infrastructure for four berths installed to provide power to ships while at berth instead of using their engines; ■ 2 new aircraft (B787) which have fuel efficient engines purchased; 	Mitigation

	<ul style="list-style-type: none"> ■Service Charter on Sustainable Aviation Fuels (certification and use of biodiesel production for captive use at the airports) implemented by 2020; ■0.5 MW solar power plant installed at Moi International Airport and commissioned by 2018. 	
Develop an affordable, safe and efficient public transport	<ul style="list-style-type: none"> ■70 km of BRT for Nairobi Metropolitan Area designed, constructed and implemented in 5 routes; ■Use of electric hybrid vehicles (buses) piloted and appropriate incentives provided for their use; ■SGR extended from Nairobi to Naivasha; ■Feeder public transport to BRT, commuter rail, and SGR developed and provided for the public; ■150 km of non-motorized transport facilities constructed, including pedestrian and bicycle access within, and to town centers and transit stations. 	Mitigation
Climate proof transportation infrastructure	<ul style="list-style-type: none"> ■Climate information used in infrastructure planning, and transport resilience plans developed; ■Feasibility study on constructing roads that systematically harvest water and mitigate floods undertaken; ■4,500 km of roads climate-proofed 	Adaptation
2. Energy		
Transition to clean cooking with such alternative fuels as LPG, ethanol, and other clean fuels promoted in both rural and urban areas	<ul style="list-style-type: none"> ■Number of households using LPG, ethanol, or other cleaner fuels for cooking increased to 2 million, through a programme that promotes: <ul style="list-style-type: none"> •Development of a depot with LPG storage tanks, bottling machines, and stock cylinders of various sizes; •Loan programme through micro-finance institutions to assist with up-front costs of cookers and cylinders; •Local manufacture and servicing of clean cookers; •Tax-relief incentives for manufacturers; 	Mitigation

	<ul style="list-style-type: none"> •Training and loans for local service; •Local businesses stocking and delivering LPG to consumers; •Engagement of women and youth groups to brand cooking cylinders procured by government; •Increased production of such non-forest biomass fuel briquettes as agricultural waste, sawdust and human waste, with emphasis on women and the youth. Actions linked to climate change priority 3: Forestry, Wildlife, and Tourism; climate change priority 5: Health, Sanitation and Human Settlements, and climate change priority 6: Manufacturing. 	
Increased renewable energy for electricity generation, in a manner that is climate resilient and accounts for the needs of rural areas	<ul style="list-style-type: none"> ■2,405 MW new renewables developed, including: <ul style="list-style-type: none"> •Geothermal – prioritized as base load generation that is climate resilient; •Biomass / Co-generation; •Hydro; •Solar; •Wind. 	Mitigation
increased generation capacity for captive renewable energy	<ul style="list-style-type: none"> ■Captive renewable energy generation plants developed, where such electricity as direct use of geothermal resources to power various industrial applications like boilers and dryers is used by the developers. 	Mitigation
Improved energy efficiency and energy conservation	<ul style="list-style-type: none"> ■Losses in electricity transmission and distribution reduced from 18% to 14%; ■3.3 million Compact Fluorescent Light (CFL) distributed to households through CFL initiative; ■Energy efficiency and conservation projects delivered, which focus on: <ul style="list-style-type: none"> •Efficient lighting; •Energy efficiency in buildings; •Minimum energy performance standards; •Distribution of clean lighting. 	Mitigation
Uptake of clean biomass (charcoal and wood) cook stoves, briquettes, and other	<ul style="list-style-type: none"> ■Number of households using improved biomass cook stoves increased by 4 million through a programme that promotes: 	Mitigation

<p>clean cooking alternatives promoted in rural areas</p>	<ul style="list-style-type: none"> •Loan programme through micro-finance institutions to assist with the up-front cost of cook stoves; •Local manufacture and servicing of clean cook stoves, through tax-relief incentives for manufacturers, and training and loans for local service providers; •Local businesses that stock improved cook stoves, with an emphasis on women-led businesses. <ul style="list-style-type: none"> ■Biogas technology scaled up to increase access to clean energy through the construction of 6,500 digesters for domestic use and 600 biogas systems in various schools and public facilities. ■Increased production of such non-forest biomass fuel briquettes as agricultural waste, sawdust, and human waste, with emphasis on women and the youth. Actions linked to climate change priority 3: Forestry, Wildlife, and Tourism; climate change priority 5: Health, Sanitation and Human Settlements, and climate change priority 6: Manufacturing. 	
<p>Promote industrial symbiosis in industrial zones</p>	<ul style="list-style-type: none"> ■Scale-up of industrial symbiosis and environmentally sound technologies and practices in existing and upcoming Industrial Zones in Nairobi, Machakos, Mombasa, Kilifi, and Kwale Counties through waste diversion, and energy and transport efficiency measures, which will contribute to avoided GHG emissions and GHG emission reductions. Linked to climate action 5: Health, sanitation, and human settlements and, climate action 7: Energy and transport. 	<p>Mitigation/adaptation</p>
<p>Optimize manufacturing and production processes</p>	<ul style="list-style-type: none"> ■Optimization of manufacturing processes promoted; and ■A sustainable charcoal system promoted by encouraging the uptake of efficient kiln technologies to increase yields to 30-42% and, the establishment of a charcoal certification and labelling scheme 	<p>Mitigation</p>

Increase energy efficiency	<ul style="list-style-type: none"> ■Number of companies participating in energy efficiency initiatives doubled to 1,000 (including 1,000 energy audits); ■Minimum Energy Performance Standards developed for five more appliances, and existing testing facilities up-scaled to include these five appliances. 	Mitigation
Improve water use and resource efficiency	<ul style="list-style-type: none"> ■Number of companies participating in water efficiency initiatives increased to 200 (including 200 water audits). 	Mitigation
3. Forestry		
Afforest and reforest degraded and deforested areas in Counties	<ul style="list-style-type: none"> ■An additional 100,000 hectares of land afforested or reforested, including via agroforestry; ■Planting of one million trees per county per year through such initiatives as: <ul style="list-style-type: none"> •Annual National Tree Planting Day; •Revived Green Schools Programme (GSP) – 10% of school land areas planted with trees; •Increased tree nurseries and production and availability of seedlings; •Tree planting (with appropriate species, including indigenous species); •Forest management and planning; •Silviculture interventions; •Promotion of agroforestry - linked to climate change priority 1: Food and Nutrition Security; •Expansion and protection of mangrove forest cover (for coastal adaptation and blue carbon sequestration) including implementation of the National Mangrove Ecosystem Management Plan - linked to Action 3: Water and Blue Economy; •Fast-tracking the signing and implementation of respective Transition Implementation Plans (TIPs) 	Mitigation/adaptation
Reduce deforestation and forest degradation	<ul style="list-style-type: none"> ■Deforestation and forest degradation reduced through enhanced protection of an additional 100,000 million hectares of natural forests through such initiatives as: 	Mitigation/adaptation

	<ul style="list-style-type: none"> •Community/participatory forestry management; •Limiting access to forests; •Preventing disturbances through improved enforcement and monitoring; •Developing alternative technologies to reduce demand for biomass, such as clean cooking, briquetting, and efficient charcoal production). <p>Linked to climate change priority 6: Sustainable charcoal production and climate change priority 7:Promotion of clean cooking;</p> <ul style="list-style-type: none"> •Carbon stock enhancement (enrichment planting) in existing forests; •Financial innovations, including payments through ecosystem services and carbon markets; and •Development of the REDD+ architecture through multi-stakeholder engagements, including a national strategy and investment plan, safeguards information system, National Forest Monitoring System (NFMS) and Forest Reference Level (FRL) for improved forest monitoring and measurement 	
<p>Restore degraded forest landscapes (ASALs and rangelands)</p>	<ul style="list-style-type: none"> ■Restoration of up to 200,000 hectares of forest on degraded landscapes in ASALs and rangelands through such initiatives as the GCF Dry land Resilience Project, including: <ul style="list-style-type: none"> •Enhanced natural generation of degraded lands through conservation and sustainable management; •Ecosystem-based adaptation through rangeland and forest landscape restoration and sustainable management. (sites include rangelands, woodlands/forests, wetlands, and croplands); •Initiation of restoration processes on 33% of land area in seven Counties. •Analysis of priority landscapes and existing restoration successes; and 	<p>Mitigation</p>

	<ul style="list-style-type: none"> •Economic analysis of restoration options, and identification of financing options to scale up landscape restoration 	
Promote sustainable timber production on privately-owned land	Area under private sector-based commercial and industrial plantations increased from 71,000 hectares to at least 121,000 hectares	Mitigation
4. Agriculture		
Climate-proof coastal infrastructure	<p>Implement the “Greening of the Mombasa Port” plan, and build resilience and mitigate GHG emissions through:</p> <ul style="list-style-type: none"> •Installation of solar panels; •Waste management; and •Rain water harvesting. 	Mitigation/adaptation
Improve productivity in the livestock sector through the Implementation of CSA interventions	<ul style="list-style-type: none"> ■Efficiency in dairy management improved for 267,000 households; and ■Manure management improved through the adoption of biogas technology by 80,000 households, and at least 200 abattoirs. 	Mitigation
Improve productivity in the fisheries through Implementation CSA interventions	<ul style="list-style-type: none"> ■Insurance packages piloted and developed for the fisheries sub-sector; and •Aquaculture production increased: •Number of cages for fish farming increased from 3,450 to 8,000; •Number of fish ponds increased by 16,000; and •Number of farmers using low-carbon (recirculating) aquaculture systems increased from 20 to 180. 	Adaptation
Improve resilience of coastal communities	<ul style="list-style-type: none"> ■Deep/offshore fishing fleet increased from 9 to 68 to improve coastal fisheries by: •Addressing overcapacity of artisanal fishing vessels; •Rehabilitating and restoring mangrove forests; and •Conserving at least 15% of coastal and marine areas, especially areas of importance for biodiversity and ecosystem services. 	Adaptation

2.2.3 Climate Change Act (2016)

The Climate Change Act of 2016 provides a structured and legal framework for action on climate change in Kenya. It establishes a Climate change council that is headed by the President of the Republic and also establishes a climate change fund. The Act also directs for the development of National Climate Change Action Plan, to guide the country towards a low carbon climate resilient trajectory.

The Act also outlines for the integration of Climate Change into all disciplines into various disciplines and subjects in schools and training institutions

2.2.4 NDC Partnership (2018)

The NDC Partnership's Climate Action Enhancement Package is a new offering designed to deliver targeted, fast-track support to countries to enhance the quality, increase the ambition, and implement nationally determined contributions

Under the Paris Agreement, countries revise their NDCs every five years to cut greenhouse gas emissions to limit Earth's temperature rise and implement solutions to adapt to the effects of climate change. The updating of NDCs presents countries with significant opportunities to align their climate and development agendas to promote sustainable growth, but also presents challenges in reinventing policies and operations and mobilizing enough investment.

2.2.5 Energy Act

The Energy Act, 2019 was enacted in response to calls to consolidate the laws relating to energy; promote renewable energy; promote exploration, recovery and commercial utilization of geothermal energy; regulate midstream and downstream petroleum and coal activities, among others. It is expected to create an enabling environment for the Government's Big Four Agenda.

The commercial energy sectors in Kenya are largely dominated by petroleum and electricity, with wood fuel providing the basic energy needs of the rural communities, urban poor, and the informal sector. An analysis of the national energy shows heavy dependency on wood fuel and other biomass that account for 68% of the total energy consumption (petroleum 22%, electricity 9%, others account for 1%). Electricity access in Kenya is low despite the government's ambitious target to increase electricity connectivity from the current 15% to at least 65% by the year 2022.

2.2.6 Energy and Petroleum Regulatory Authority

It establishes the Energy and Petroleum Regulatory Authority ("**EPRA**") in place of the Energy Regulatory Commission ("**ERC**"). You will have seen a media blitz in the Kenyan dailies informing the public of the rebranding from ERC to EPRA.

This change shall not affect any right, privilege, obligation or liability acquired by any licensee or other person in any contract or under any written law prior to commencement of Energy Act, 2019.

All rights, duties, obligations, assets and liabilities of ERC existing as at the commencement of the Energy Act, 2019 shall be automatically and fully transferred to EPRA and any reference to the ERC in any contract or document shall be deemed to be a reference to EPRA.

2.2.7 Rural Electrification and Renewable Energy Corporation

It establishes the Rural Electrification and Renewable Energy Corporation ("**REREC**") as successor to the Rural Electrification Authority ("**REA**").

In addition to overseeing the implementation of the Rural Electrification Program, REREC's extended mandate includes developing and updating the renewable energy master plan; establishing energy centers in the Counties; developing, promoting and managing use of renewable energy (excluding geothermal); coordinating research in renewable energy; developing appropriate local capacity for renewable technologies; offering clean development mechanisms such as carbon credit trading, among others.

2.2.8 Energy and Petroleum Tribunal

The Energy and Petroleum Tribunal ("**Tribunal**") replaces the Energy Tribunal that existed under the repealed Energy Act.

The scope of the Tribunal has been expanded to hear and determine disputes and appeals relating to the energy and petroleum sector arising from the Energy Act, 2019 and any other statute. Under the repealed Energy Act, the Energy Tribunal could only hear appeals from decisions of the ERC.

The Tribunal now also has power to grant equitable reliefs including but not limited to injunctions, penalties, damages, specific performance and power to, on its own motion or upon application by an aggrieved party, review its judgments and orders.

2.2.9 Nuclear Power and Energy Agency

The Nuclear Power and Energy Agency ("NPEA") takes over from the Kenya Nuclear Electricity Board that existed under the repealed Kenya Nuclear Electricity Board Order.

Local Content Requirements

The Energy Act, 2019 imposes local content requirements on energy projects and states that *"every person carrying out any undertaking of works under the Act shall comply with local content requirements in all of its operations"*.

EPRA is required to issue guidelines and format for the preparation of local content plans. In addition, the Energy Act, 2019 requires that the local content plan should ensure that:

- (i) first consideration is given to services provided within the County and goods manufactured in Kenya, where the goods meet the relevant specifications;
- (ii) qualified and skilled Kenyans are given first consideration with respect to employment at all levels of the value chain; and
- (iii) Adequate provision is made for the training of Kenyans on the job.

2.2.10 Renewable Energy Feed-in Tariff System

The Energy Act, 2019 provides for a Feed-in Tariff ("FiT") System aimed at catalyzing the generation of electricity through renewable energy sources; encouraging local distributed generation thereby reducing demand on the network and technical losses associated with transmission and distribution of electricity over long distances; encouraging uptake of, and stimulating innovation in, renewable energy technology; and reducing greenhouse gas emissions. The Cabinet Secretary, Ministry of Energy has power to pass regulations to implement the Feed in Tariff System. The regulations for the administration and implementation of the FiT System are not yet in place but may include regulations on: the technical and operational requirements for connection to the grid; duration of the feed-in-tariff approval; tariff to be paid by distribution licensees to licensees under the FiT System; and the priority of purchase by distribution licensees of electrical energy generated using renewable energy sources.

What the Energy Act provided in relation to:

1. Renewable energy

- providing an enabling framework for the efficient and sustainable production, distribution and marketing of biomass, solar, wind, small hydros, municipal waste, geothermal and charcoal;
- promoting the use of fast maturing trees for energy production including biofuels and the establishment of commercial woodlots including peri-urban plantations;
- promoting the use of municipal waste for energy production;
- promoting the development of appropriate local capacity for the manufacture, installation, maintenance and operation of basic renewable technologies such as bio-digesters, solar systems and turbines;
- harnessing opportunities offered under clean development mechanism and other mechanisms including, but not limited to, carbon credit trading to promote the development and exploitation of renewable energy sources;
- promoting the utilization of renewable energy sources for either power generation or transportation;
- Promoting the production and use of gasohol and biodiesel.

2. Geothermal

No one shall sink a well, tap, take, use or apply geothermal resources for any industrial or commercial purpose unless is granted authority or license under this Act. Any royalty received by the National Government from geothermal energy produced under this section shall be paid into the Treasury of the National Government and apportioned between the National Government, County Government and the local community as follows.

- (a) The county government's share shall be equivalent to 20% of the royalties: Provided that the amount allocated in accordance to this sub-section shall not exceed the amount allocated to the County Government by Parliament in the financial year under consideration.
- (b) The local community's share shall be equivalent to 5% of the royalties and shall be payable through a trust fund managed by a board of trustees established by the local community in accordance with regulations under this Act: Provided that the amount allocated above shall not exceed one quarter of the amount due to the County Government by Parliament in the financial year under consideration.
- (c) The remaining 75% shall be treated as National revenue to be dealt with in accordance with Article 203 of the Constitution.

CHAPTER THREE

LONG-TERM TARGETS ON CLIMATE, ENERGY AND DEFORESTATION

Ministry of Environment and Natural Resources highlights the long-term climate targets for Kenya as well as how Kenya is transitioning to a low carbon economy. Kenya has embraced a low emission and climate resilient development pathway through its NDC. Therefore, the country aims to undertake ambitious mitigation that will reduce its greenhouse gas emissions by 30 percent by 2030. Besides, Kenya is a member of the Climate Vulnerable Forum (CVF) a 48-country platform who during COP22 committed to 100% renewable energy by 2050.

3.1 Projects and programs in realization of the NDC in Kenya by sectors

Devolution

Adaptation consortium under the Strengthening Adaptation and Resilience to Climate Change in Kenya Plus (StARCK+) programme. The intended outcome is that the programme leads to the rapid scale-up of innovation and investment in low-carbon and adaptation/resilience products, services and assets (IPEGLOBAL, 2017).

Energy

Develop an additional 2,275 MW of geothermal capacity by 2030 through a support programme aimed at encouraging private sector investment. The programme could include: additional grants for the early phases of geothermal development, access to loans for latter stage development, risk mitigation instruments, capacity building programmes, and harmonization and improvement of the regulatory framework.

On efforts to realize this priority, there are several projects in progress; Geothermal power development in Olkaria, Menengai, Morendat Malewa, Dongo-Kundu, Kilifi, Kwale, Meru/Isiolo; Suswa, Longonot, Eburru, Menengai, Arus and Bogoria, , Korosi and Chepchuk, and Paka. Preliminary results indicate significant potential of geothermal power in these prospects. Other high potential areas earmarked for further exploration work in the north rift include Emurau angogolak, Barrier volcanoes, Namarunu volcanic field, and Badlands Volcanic field and Lake Magadi geothermal area in the South, among others Lake.

Turkana Wind Power Project; installation of wind energy storage facility in Marsabit; connection of electricity to public institutions; Reforestation of Upper Tana and Sondu Miriu river catchments; Sustainable Energy for All.

Science Technology and Innovation

Prototype and innovation testing by the Kenya Climate Innovation Centre and African Enterprise Challenge Fund, UNDP Low Emissions, Climate Resilient Development Project. The project is facing challenges on capacity building, financing, and knowledge on climate smart technologies.

Infrastructure

Improvement of shipping and maritime facilities programme, Roads 2000 programme, standard gauge railway, improvement of living and working conditions in government buildings, development and maintenance of coastline infrastructure, Research in Appropriate Building Technology Capacity Building Programme. The gaps experienced in this project are technology, finance and capacity building.

Land Reforms

Kenya is on the process of preparing Land Use Policy, National Spatial Plan concept, Revision of Kenya National Atlas, Development of Community Land Bill, County Spatial Plans. The gaps experienced include financing, capacity building, and awareness.

Education and Training

Kenya Global Partnership for Education, Primary Education Development project targeting the arid and semi-arid areas, Digital Learning Programme, Education Reforms, Education for Sustainable Development.

Environment and forestry

Implementing a resilience framework to support climate change adaptation in the Mt. Elgon Region of the Lake Victoria Basin Project; Lake Victoria Environment Management Programme (LVEMP); Planning for Resilience in East Africa through policy, adaptation, research and economic development programme (PREPARED); Climate for Development in Africa Programme; Catalysing Forest and Landscape; rehabilitation for climate resilience and biodiversity conservation in East Africa; Global Early Warning System for Climate Change project.

Priority mitigations under NCCAP-Undertaking a programme of work to restore forests on 960,000 hectares up to 2030 including: inter alia dry land forest restoration activities; awareness raising, consultation and demonstration; capacity building; development, testing and application of compensation and benefits-sharing mechanisms; measuring, monitoring and reporting; and research.

Population, Urbanization, and Housing

UNDP, UNEP, UN-HABITAT Support to low carbon climate resilient development for poverty reduction in Kenya, Shauri Moyo Housing Project, Kenya Informal Settlements Improvement Project, Kisumu Housing Project. The aim of the project is to enhance the adaptive capacity of the population, urbanization, and housing sector. The gaps in this project are lack of enabling policy, awareness and capacity building.

Agriculture

The sector as a priority to convert 281,000 hectares of existing arable cropland and grazing land that have medium or high agricultural potential to agroforestry by 2030 through a programme of work that includes: research to identify appropriate agroforestry practices; technological development; extension services and training of extension workers; capacity building and education for farmers; pilot projects; research to determine potential in more marginal lands; and measuring, monitoring and reporting. To achieve the targets efforts are in progress to increase the resilience of the agricultural value chain through Kenya Climate Smart Agriculture Programme; Mitigation of Climate Change in Agriculture Programme; Climate Smart Agriculture, STARCK+; Building climate change resilience and food security programme; Economic Stimulus Programme: Agriculture, Kenya Agricultural Productivity, and Agribusiness Project Kenya: Adaptation to Climate Change in Arid Lands. The major gaps identified in these programmes and projects are technology, awareness, capacity building and financing.

Livestock development

The adaptation action is to enhance the resilience of the livestock value chain. Kenya has undertaken the following programmes and projects in the livestock sector; UNDP, Sustainable Land Management - Agro-Pastoral Kenya (2010-2015); Risk Insurance, Index Based Livestock and Crop Insurance, Complementary livestock redistribution, production, and animal health interventions support to improve pastoralists' livelihood project, Dairy NAMA, Regional Pastoral Resilience Project. The gaps identified in these programmes and projects include financing, awareness, technology and capacity building.

Oil and Mineral Resources

To integrate Climate Change adaptation into the oil and mineral resources, Kenya has made steps in developing of the Mining bill and facilitated a Magadi siltation project at Lake Magadi (Ministry of Environment and Natural Resources, 2017). The climate change policies and strategies remain instrumental in influencing the development of NDC hence without them there is limited development expected.

Water and Sanitation

Implementation of the National Water Master Plan (2014), Kenya Water Security and Climate Resilience Project, Adaptation to Climate Change in Arid and Semi-Arid Lands (KACCAL), Adaptation Consortium, Western Kenya Community Driven and Flood Mitigation Project, Capacity Development for Effective Flood Management Project, Water Infrastructure Solutions from Ecosystem Services Underpinning Climate Resilient Policies and Programme. The aim of implementing this projects was to mainstream climate change adaptation in the water sector. Challenges experienced include finance, capacity building, and awareness creation.

Gender, Vulnerable Groups, and Youths

The main action of this group is to strengthen the capacity of vulnerable groups i.e. women, orphans and vulnerable children, the elderly and person with a disability. The projects and programmes implemented in Kenya include; Hunger Safety Net Programme; Adaptation Consortium; Ending Drought Emergencies; National Drought and Disaster Contingency Fund; African Risk Capacity; Kenya Coastal Development Project; Integrated Programme to build resilience to climate change and adaptive capacity of vulnerable communities in Kenya; Arid Lands Support Programme; Rural livelihoods adaptation to climate change in the Horn of Africa Project; Adaptation Learning Programme for Africa; Women and Youth Enterprise Fund.

Health

Piloting Climate Change Adaptation to Protect Human Health in Kenya Project the project was implemented in the highlands of Kenya specifically Kericho, Nandi, Trans-nzoia and Kisii. The time frame of the project was 2010 to 2014. The gaps experienced in the project were capacity building, finance, and technology (World Health Organization, 2017)

3.2 Projects and programmes in realization of the NDC in Kenya under NAMAS

The Low Emission Capacity (LECB) programme, European Commission, Federal Ministry of Environment, Nature Conservation, United Nations Development Programme (UNDP), Building and Nuclear Safety (BMUB) are implementing a project in Kenya. The project has played a key role in helping Kenya prioritize and develop concepts of six Nationally Appropriate Mitigation Actions (NAMAs) in the energy and the waste sectors respectively. In supporting mitigation actions in Kenya, the project is working towards identifying opportunities for Nationally Appropriate Mitigation Actions (NAMAs) and designing low-emission Development Strategies (LEDS) in the context of national priorities. Besides, it is also designing systems for measuring, reporting, and verification (MRV) of proposed actions and means to reduce GHG emissions (Climate Change Adaptation, 2017).

Biogas Market Development for low-carbon Energy Access in Kenya

The purpose of this NAMA is to promote the use of biogas technology as a low-cost greenhouse mitigation technology through the development of a commercial small-scale biogas sector in Kenya. The NAMA aims to install 60,000 bio-digesters over six years through a coordinated market development approach that reduces financing barriers and improve the reliability of the technology.

Accelerated Geothermal Electricity Development in Kenya

This NAMA purpose to accelerate geothermal resource development in Kenya by scaling up private sector investment and participation. The NAMA aims to target an estimated installed capacity of 820 Megawatts (MW) of geothermal development, over half of the 1500 MW outlined in the Government's 5000 MW+plan.

Clean Energy Cook Stoves and Solar Lighting

The purpose of the NAMA is to increase access to clean energy technologies, specifically renewable energy and clean cooking in rural households. The NAMA also enables the private sector to participate actively in the manufacture and distribution of the clean energy technologies; and create an enabling market environment that encourages distribution of the clean energy technologies to end-users supported by an appropriate financing model.

Circular Economy Solid Waste Management Approach for Urban Areas in Kenya

This NAMA aims to improve Municipal Solid Waste management in the major urban areas of Kenya through a circular model of waste management in the greater Nairobi metropolitan region. In this respect, the NAMA facilitates the diversion of at least ninety percent of collected waste away from disposal sites to various recycling practice.

Bus Rapid Transit (BRT) Plus System for the Nairobi Metropolitan Region

The purpose of the NAMA is to support the development of a Bus Rapid Transit plus (BRT+) system for greater Nairobi by incorporating a single route for an electric bus rapid transit system (eBRT). The NAMA aims to improve access to clean, efficient, and safe public transport.

Mass Rapid Transit System for Nairobi

The purpose of the NAMA is to support a transformational change towards lower energy consumption (i.e., increase fuel efficiency) and fewer greenhouse gas emissions per passenger per kilometer from urban passenger transport. The NAMA aims to shift a significant share of individual travel to commuter rail and a new Bus Rapid Transit (BRT) system.

3.3 LEDS/Low Carbon Development Projects in Kenya

Table 4: Examples of LED projects initiated in Kenya

NAME	Agency/Company/ Organization	Sector	Focus Area	Program Start & End	Accomplishme nt s/progress
Kenya- Enhancing Capacity for Low Emission Development Strategies	United States Agency for International Development, United States Environmental Protection Agency, United States Department of Energy, United States Department of Agriculture, United States Department of State	Climate, Energy, Land	Renewable Energy, Buildings, Energy Efficiency	2014- 2017	The Climate Change Act 2016. In 2016, \$13 million in funds through the USAID Development Credit Authority. Manufacture and distribution of solar lighting kits in the country, 21,000 Rural Households Gained Access to Clean, Renewable Energy in Kenya
The project aims to support Kenya's effort to pursue long-term transformative development and accelerate sustainable climate resilient economic growth while slowing the growth of greenhouse gas (GHG) emissions. Therefore, the project correspondingly contributes to the implementation of National Climate Change Action Plan (NCCAP) that has the overarching goal of enhancing low carbon climate resilient development in Kenya.					
Promoting Low Emission Urban Development Strategies in Emerging Economy Countries (Urban LED S Project)	European Commission and UN-HABITAT	Climate	Energy efficiency	2015- 2017	The Third Medium Term Plan (MTP III) 2018-2022 which Focuses on delivering the "Big Four" initiatives.
The Project further explores vertical integration, addressing climate change between different levels of government, and includes advocacy and support activities at the global level					

3.4 REDD+ Process

The REDD+ process is one of the key strategies that aims to promote conservation, sustainable management of forests and enhancement of forest carbon stocks. Therefore, this presents a great opportunity to reduce forest sector emissions by provision innovative approaches, including incentives that support the implementation of a comprehensive forest management and conservation strategies. To ensure the REDD+ strategy meets its main objective guided by the United Nations Framework Convention on climate change (UNFCCC), Kenya is in the process of developing a country driven and participatory process that delivers the following pillars of REDD+; Forest Reference Levels (FREL/FRL), REDD+ strategy and implementation framework, National Forest Monitoring System (NFMS) and Safeguards Information System (SIS). The development of the above documents has shown Kenya's REDD+ readiness efforts. Therefore, in support of this process Kenya has received technical and financial support from a number of development partners including the United Nations program on REDD+ (UN-REDD), the Forest Carbon Partnership Facility (FCPF), Japan (JICA) and the Clinton Climate initiative (Gichu, National REDD+ Coordinator).

The Kenyan Government through the Kenya forest service is conducting two projects geared towards emission reduction. Chyulu hills REDD+ project that covers 400,000 ha with an annual emission reduction of 200,000 tons and the Kasigau Wildlife works project that covers 200,000 ha with an annual emission reduction of 1.2 million tons (Gichu, 2017). Besides, there are negotiations going on for other projects in the North, part of Kenya.

3.5 Kenya SE4ALL

Kenya installed generation capacity is projected to increase from 1,645 MW in 2012 to about 14,676 MW by 2030 basing on the reference scenario. The strategy is to diversify the base-load from hydro to other sources of energy mainly geothermal. The expected power supply from various sources will be composed of 80.11% renewable energy by 2030 increasing energy solutions to all Kenyans especially the poor (Ministry of Energy and Petroleum, 2016)

Table 5: Kenya SE4ALL Target until 2030 under each SE4ALL goal

Universal access to modern energy services		Doubling global rate of improvement of energy efficiency	Doubling share of renewable energy in global energy mix	
Percentage of population with electricity access	Percentage of population with access to modern cooking solutions	Rate of improvement in energy intensity	Renewable energy share in Total Final Energy Consumption	
			Power	Heat
100% ⁴¹	100%	-2.785% ⁴² /year	80%	80%

Source: SE4ALL Action Agenda (2016)

3.6 The Kenya biogas programs

Although there are several thousand bio digesters installed in Kenya, most of them operate below capacity or are currently in disuse due to management, technical, socio-cultural or economic problems.

Biogas is widely used in institutions due to their high potential of waste utilization for biogas generation. Several pilot programs have been established. The Kenyan biogas programs (2009-18) by the end of 2017, 17,134, biogas were constructed benefiting some 103,000 people. During the phase I, the biogas was subsidized but in the phase II, it offered result-based incentives to financial institution that could then provide loans to farmers. To incorporate more women, the program trained women masons, sought to reach women customers, and also encouraged participation in the national biogas users' association.



CHAPTER FOUR

CLIMATE FINANCING

Climate finance is an important enabling aspect of our efforts to address climate change. The Paris Agreement sets a goal of mobilizing USD 100 billion per year by 2020 to support mitigation and adaptation activities in developing countries. Significant financial resources from the public and private sectors are expected to be channeled towards climate activities. The Kenya NDC and affiliated plans (NCCAP-GESIP) require financial resources to be able to implement the projects and programs proposed in these documents.

4.1 Global financing mechanisms

In accordance with the principle of common but differentiated responsibility and respective capabilities set out in the UNFCCC, developed country Parties (Annex I Parties) are to provide financial resources to assist developing country Parties in implementing the objectives of the UNFCCC. To facilitate the provision of climate finance, the Convention established a financial mechanism to provide financial resources to developing country Parties.

The financial mechanism also serves the Kyoto Protocol and the Paris Agreement. The Convention states that the operation of the financial mechanism can be entrusted to one or more existing international entities. The Global Environment Facility (GEF) has served as an operating entity of the financial mechanism since the Convention's entry into force in 1994. At COP 16, in 2010, Parties established the Green Climate Fund (GCF) and in 2011 also designated it as an operating entity of the financial mechanism. The financial mechanism is accountable to the COP, which decides on its policies, programme priorities and eligibility criteria for funding.

In addition to providing guidance to the GEF and the GCF, Parties have established four special funds: the Special Climate Change Fund (SCCF), the Least Developed Countries Fund (LDCF), both managed by the GEF, and the GCF under the Convention; and the Adaptation Fund (AF) established under the Kyoto Protocol in 2001. At the COP21 in 2015, the Parties agreed that the operating entities of the financial mechanism – GCF and GEF – as well as the SCCF and the LDCF shall serve the Paris Agreement. Parties are currently working on modalities for the Adaptation Fund (AF) to serve the Paris Agreement. Under the Kyoto Protocol, other Climate Finance mechanisms include the Clean Development Mechanism (CDM), the Joint Credit Mechanism (JCM) and the

Emissions Trading schemes (ET). However, this baseline report focuses on the GCF as the main financing mechanism for projects and programs.

4.1.1 Green Climate Fund (GCF)

The Green Climate Fund (GCF) is a fund set as a mechanism to assist developing countries in adaptation and mitigation practices to counter climate change. The Fund is a unique global initiative to respond to climate change by investing into low-emission and climate resilient development. GCF was established by 194 governments to limit or reduce greenhouse gas emissions in developing countries, and to help adapt vulnerable societies to the unavoidable impacts of climate change. Given the urgency and seriousness of the challenge, the Fund is mandated to make an ambitious contribution to the united global response to climate change. The Green Climate Fund supports projects, programs, policies and other activities in developing countries using thematic funding windows. It is intended to be the centerpiece of efforts to raise Climate Finance of \$100 billion each year up to the period 2020.

GCF Access Modalities

- Accredited national and sub-national implementing entities that meet the Fund's standards – in case of Kenya: NEMA
- Accredited international and regional entities under international access: African Development Bank and Development Bank of Southern Africa
- Accredited UN bodies. The UN bodies accredited so far are UNDP, UNEP, WMO, WFP, World Bank
- Accredited private sector entities e.g. Acumen Fund, HSBC, Deutsche Bank, Credit Agricole, Africa Finance Corporation AFC

Status of GCF Funding in Kenya

In Kenya National Environment Management Authority (NEMA) is the National Implementing Entity (NIE) for the US\$10 million Adaptation Fund project that assists vulnerable communities to adapt to climate change. Thus, NEMA-Kenya is now one of the 33 institutions globally authorized to carry out GCF projects. The National Treasury is the National Designated Authority (NDA), or the national focal point, for the GCF.

GCF Mitigation result areas

- Energy access and power generation (E.g. on-grid, micro-grid or off-grid solar, wind, geothermal, etc.)
- Low emission transport (E.g. high-speed rail, rapid bus system, etc.)
- Buildings, cities, industries, and appliances (E.g. new and retrofitted)

energy-efficient buildings, energy-efficient equipment for companies and supply chain management, etc.)

- Forestry and land use (E.g. forest conservation and management, agroforestry, agricultural irrigation, water treatment, and management, etc.)

NEMA Accreditation Credentials

- Micro-scale, project size of US\$ 10 million irrespective of the size of the GCF contribution
- Project management
- Full grants; No conditional need for co-finance or leveraged finance

NEMA GCF Proposal design process

- GCF Programme design process in Kenya, steered by National Treasury and in their role as NDA and NEMA as the Accredited Entity.
- Process conceived through a consultative process mainly with NDA, NIE - NEMA, and MENR, with and technical support from CDKN, WRI, UNEP.
- Overall objective is to enhance direct flow of climate finance into Kenya with a focus on GCF

Observers of the GCF in Kenya

The institutions accredited to observe the NEMA GCF process in Kenya include;

- Transparency International (TI)
- Pan African Climate Justice Alliance (PACJA)
- Indigenous Peoples Network of Kenya

4.2 National enabling policy for climate finance

4.2.1 National Climate Finance Policy (2018)

The purpose of the National Policy on Climate Finance is to improve Kenya's ability to mobilize and effectively manage and track adequate and predictable climate change finance. The policy sets out a guiding framework to enhance the national financial systems and institutional capacity to effectively access, disburse, absorb, manage, monitor and report on climate finance in a transparent and accountable manner. The policy is Kenya's initial step towards a coordinated effort to identify, attract and use climate finance to further climate change and national sustainable development goals.

The Policy sets out a number of strategic interventions that can encourage the mobilization of climate finance and increase financial flows. These interventions include the establishment of a national climate finance platform (a Climate Change Fund) that can support the mobilization, coordination and tracking of climate finance in Kenya including both domestic and international resources. This will improve transparency and accountability. The policy encourages building capacity to develop bankable projects and effectively manage and implement those projects. Improved fiduciary standards and management, and application of environmental and social safeguards will encourage participation in climate finance investments and benefits sharing. Capacity building will help national and county governments to implement the Policy; and assist civil society and the private sector to be strong partners in implementation. Active participation in the international negotiations on climate finance and new market mechanisms will enable Kenya to remain informed and well positioned to act on opportunities that arise through the carbon market, development partners and international climate funds. (NCFP 2018)

4.2.2 Climate finance landscape in Kenya

Kenya has been successful in accessing international climate finance. At least 15 different public agencies support climate change activities within the country, including those with resources from climate finance. Multilateral institutions, such as the World Bank and African Development Bank (AfDB), are key players providing, for example, low-carbon infrastructure investment in the renewable energy sector. Kenya is also looking at opportunities to secure funding from the Green Climate Fund and has to that end nominated the National Treasury to act as Kenya's National Designated Authority (NDA) to the GCF.

Kenya has recently received support on climate finance readiness from the Africa Climate Change Fund (ACCF) of the AfDB to support the development of project concept notes and proposals to advance low-carbon, climate-resilient development in the forestry, agro-forestry and agriculture sectors. These proposals are to be presented to domestic and international funding sources for consideration. Major bilateral financial partners supporting climate change activities in Kenya include the United Kingdom's Department for International Development (DFID), French Development Agency (AFD), Danish International Development Agency (Danida), German international development agency (GIZ), Japan International Cooperation Agency (JICA), Swedish International Development Cooperation Agency (SIDA), and the German government-owned development bank (KfW). Kenya is also a UN-REDD Programme partner country and a participant of the Forest Carbon Partnership Facility.

Bilateral development partners also support REDD+ initiatives. The cumulative public expenditure commitment in Kenya from development partners over 2005-2015 is estimated to be USD 2.29 billion.

Carbon markets have incentivized international private sector investment in mitigation activities. Kenya has hosted several innovative projects through the CDM and the voluntary carbon market. Many voluntary market projects focus on cook stoves to improve household energy efficiency and forestry sector projects. While the CDM has played an important role in Kenya in encouraging private sector investment, evidence suggests this market holds very little promise to generate investments before 2020 because of a decline in demand and uncertainty around the functioning of new market-based mechanisms created under the Paris Agreement. Market readiness activities and a strong engagement in UNFCCC negotiations on markets are of great importance.

The private sector is investing heavily in geothermal activity, biomass, solar and small hydroelectric projects; and is increasingly engaged in providing financial and insurance services. The unlocking of private sector investment has been encouraged through various fiscal incentives. For example, importing, constructing and selling photovoltaic cells are exempted from duty and tax, and the government has given ten year tax holidays for small-scale solar projects. The government can consider additional economic and financial instruments to leverage private sector investments into low carbon and climate resilient initiatives. These include guarantees to enable small- and medium-sized enterprises to access funds from financial institutions; and guarantees, insurance and concessional loans to address the barriers associated with risky investments and up-front investment costs.

The Universal Green Energy Access Program

A Sub-Saharan African programme aiming to implement projects in five countries Benin, Kenya, Namibia, Nigeria and Tanzania. The overall program development objective is to contribute to universal access to electricity in Sub-Saharan Africa by scaling up investments in renewable energy from local financial markets and the international private sector.

More specifically, the program targets are to:

- To reduce the emission of CO₂ through increased access to clean electrical energy for predominantly rural population in the Target Region of UGEAP
- Reduce the emission of CO₂ by replacing fossil fuel based energy production (on- or off-grid) with renewables, supplying clean energy for expanding energy demand and/or contributing to the stabilization of the national grid with an additional capacity
- To work with and through local financial institutions in an innovative structure to enable, local banks to provide long-term loans in local currency or USD for businesses that provide clean electricity solutions.

- As a public-private partnership instrument, multiply the amount of public capital through private investment by at least 2 times, thereby significantly increasing impact.

The project began on 30/06/2017 and end in 30/09/2032. The Universal Green Energy Access Program is to be managed by Deutsche Bank group entities and its total budget is 500 million. The projects target beneficiaries are medium enterprises (SMEs) and households. In Kenya, the UGEAP is a 24 months programme equivalent to 2 years. The total budget of the cost is US\$ 20 million.

KawiSafi Ventures Fund in East Africa

The project is ongoing currently implemented in Kenya and Rwanda. The project focuses on the off-grid energy sector in East Africa to provide universal access to energy to people located beyond the foreseeable grid connection and at the bottom of the economic pyramid. It also addresses issues to do with lack of electricity and high kerosene use through offering affordable clean household solar energy solutions such as solar lanterns, solar home systems and solar mini-grids (60-70% of investment). The project targets 15,000,000 beneficiaries with a total budget of \$110.0m. Acumen is the implementing entity of this project.

Funding (mitigation and adaptation) from other external sources

a) Menengai geothermal development project: Green energy in motion

The project was approved in 2011 and it was to end in 03/05/2016. The project aimed at providing reliable, clean and affordable electricity to thousands of households and industries in Kenya. The project received a funding of US \$502.9 million from African Development Bank Group (AFRICAN DEVELOPMENT BANK GROUP, 2017).

The specific objectives of this project were;

- To increase geothermal energy production capacity by 400 MW.
- To provide a reliable, clean and affordable electricity supply to 500,000 households and 300,000 micro-enterprises.
- To accelerate the energy transition of the Kenyan economy through increasing the proportion of geothermal in the national energy mix.
- To reduce the frequency of power outages caused by the volatility of hydroelectric production.

The expected outcomes from the project were:

- Rate of access to electricity increased by 20%.
- Geothermal energy production capacity increased by 26%.
- CO2 emissions reduced by 2 million tonnes.

- Cost per kilowatt reduced by 22%.
- Accelerated energy transition.

b) Kenya Climate Smart Agriculture Project

It is a 5 years project 2017-2021 funded by the World Bank. The project aims to increase agricultural productivity and build resilience to climate change risks in the targeted smallholder farming and pastoral communities in the country. The total budget for the project is sh25.9 billion.

c) Lake Turkana Wind Power Project

The Project is ongoing and is expected to be complete by mid-2017. The total project cost is estimated at USD 680 million and includes the cost of the envisaged 400 km transmission line from Lake Turkana to the Susua sub-station near Nairobi, as well as the cost of upgrading 200 km of roads and various bridges. The project will benefit Kenya by providing clean and affordable energy that will reduce the overall energy cost to end consumers. Furthermore, the project will allow the landlocked Great Rift Valley region to be connected to the rest of the country through the improved infrastructure linked to the wind farm, including a road, fiber-optic cable, and electrification. This zero-emission project will also contribute to filling the energy gap in the country, enhancing energy diversification and saving 16 million tons of CO₂ emission compared to a fossil fuel-fired power plant.

The *main objective* of the project is to provide clean, reliable, low-cost power by increasing Kenya's national power generation capacity to approximately 17%.

Expected Outputs:

- 310 MW wind farm comprising 365 turbines
- A 33 kV electrical collector network
- 428 km transmission line from Lake Turkana to Susua sub-station

The project is financed through the equity debt (25%), mezzanine debt (5%) and senior debt (70%). African Development Bank is expected to provide a long-term senior loan of USD 150 million.

4.2.3 Climate Technology Development and Transfer

Kenya has undertaken a technology needs assessment. Several institutions handle different aspects of technology and research matters:

The National Commission for Science, Technology and Innovation (NACOSTI), National Research Fund (NRF), Kenya Innovation Agency (KENIA) and the Kenya Institute of Research Development and Innovation (KIRDI). KIRDI is Kenya's UNFCCC Designated National Authority (DNA) on Technology. Kenya has also developed Technology Action Plan (TAP) with support from Global Environment Facility (GEF), United Nations Environment Programme (UNEP) and the UNEP Risoe Centre (URC) in collaboration with Environmental Development Action in the Third World (ENDA Senegal). The TAP focus is to assess the technology needs for climate change mitigation and adaptation in Kenya.

In Kenya, the Climate Innovation Centre (CIC) is housed at the Strathmore University. The University of Nairobi (UoN) Kenyatta University, Jomo Kenyatta University of Agriculture and Technology (JKUAT) and all the rest of the public and private universities hold regular innovation and/or engineering exhibitions and a variety of platforms (Wandera, Climate Change Focal Point, SusWatch Kenya).

4.2.4 Stakeholders Involved in NDC, LEDS and Climate Finance

The main stakeholders in the NDC development and implementation include development partners, people/public, private sector, Academia, Government, Media, and CSOs. The institutional arrangements areas were conceptualized in the NCCAP. The development partners play a various role such as financing potential projects aimed at climate resilience, design programs and offer technical expertise where necessary. Kenya, for example, has received technical and financial support from a number of development partners including the United Nations Program on REDD+ (UN-REDD), the forest Carbon Partnership Facility (FCPF), Japan (JICA) and the Clinton Climate Initiative (Ministry of Environment & Natural Resources, 2016).

The private sectors play a critical role in mobilizing financial resources and technical capacities, influence government efforts, engage CSOs and community efforts in climate adaptation projects. An example of private sectors that have engaged CSOs and community efforts include GIZ, which has funded projects such as; adapting to climate change by adopting risk management strategies. Besides, the private sector also develops innovative climate services and adaptation technologies. In Kenya, the Kenya Association of the manufacturer (KAM) has been instrumental in influencing Environmental laws and Energy Environmental policies. The Kenya Industrial research and development Institute (KIRDI) has conducted environmental research and consultancy work for industry, community organizations and government agencies in line with vision 2030.

The Academia role is to conduct research in regard to climate change issues and provide technical support to the government and CSOs on Climate project and policies. The

University of Nairobi Prof. Daniel Olago, for example, is leading a consortium that is carrying out a research related to

DFID funded programme termed “Improving water security for the poor”. The programme aims to increase water security for 2.5-5 million poor people by 2021 and to develop and test an interdisciplinary risk-based framework (Prof. Wandiga). Egerton University in Kenya has also made strides in the implementation of the NDC by conducting a project on Enhancing Biogas Energy Contribution in Kenya a project that was conducted 2012-2014 with support from National Council for science and technology (NCST)

The government in collaboration with other stakeholders participate in developing relevant policies and strategies geared towards climate resilience such as the National Climate Change Action Plan (NCCAP 2013-2017). It also plays an active role in the global climate change discourse and response including the signing of the climate agreements such as the Paris Agreement, which happens to be the world’s first binding universal agreement during COP-21. The government through the Ministry of Environment and Natural Resources and in particular the state department of Environment in partnership with other stakeholders have a role to play in the full implementation of the Climate Change Act 2016.

Civil society equally plays key roles in pushing for new laws, programmes, policies or strategies on climate change, in holding governments to account on their commitments; in identifying the lack of joined-up government responses to climate change; and in ensuring that national policy making does not forget the poor and vulnerable. Media also performs an active role in reporting and raising awareness on NDCs as well as providing the public with media briefs on climate proceedings.

Some of the media stations that have a soft spot for climate change issues in Kenya include KTN, NTV, K24 and Citizen TV. Ordinary people as one of the stakeholders that play a significant role in reaching the targets set in reducing emissions by sharing information on concrete tools and lifestyle choices that make biggest impacts. Nonetheless, they report on environmental challenges that require urgent solutions.

Public sector – national line ministries and their agencies, the Council of Governors (CoG), research and academia, civil society and development partners are represented at all levels in the conceptualization and development of LEDS and climate finance.

CHAPTER FIVE

CSO IN THE EASE-CA PROJECT

There are organizations in Kenya participating in the EASE-CA project through the activities they undertake. Some of these organizations include:-

The Kenya Forest Working Group (KFWG) which aims at increasing the forest cover to meet 10% national target through sound forest management and conservation practices in Kenya. Therefore, it promotes sustainable forest management in the country through research, advocacy, networking, and partnership development for improved livelihood for all Kenyans. However, its strongest function is to provide a watchdog role through its forest monitoring activities and related advocacy actions, as well as influencing policy and preparing communities for participatory forest management. Currently, in collaboration with Kenya Forest Service, they are implementing a project dubbed “Miti Mingi Maisha Bora Project”. It is a 5-year project supported by the Government of Kenya. The overall objective of the project is “A reduction in poverty by ensuring that the forest sector contributes effectively and sustainably to improve the lives of the poor, restoring the environment, and aiding the economic recovery and growth of Kenya, within the context of Vision 2030’ (Jack Bamboo, KFWG).

The Green Belt Movement is also undertaking activities geared towards low emission development such as tree planting, advocacy, and networking, environmental conservation and women for change (capacity building). The Green Belt Movement has had a long working relationship with like-minded stakeholders including the Government of Kenya in climate change programs and REDD+ activities. Some of the REDD+ activities that the organization partners with the government are: carbon projects in Aberdare forest, Mt. Kenya forest and the Mau forest. The organization has also been contributing to the development of the National REDD+ process as a partner including the development of System for Land Emission Estimation for Kenya (SLEEK) at a technical level (Green Belt Movement, 2017).

Green Africa foundation is also one of the CSOs in Kenya that has played a critical role in supporting low emission development through conducting a project on enhancing environmental sustainability and climate change through low carbon emission and the project was carried out between 2015-2017. The project's target is to enhance resilience to climate change and environmental sustainability by vulnerable communities in Kenya.

The project idea to be implemented in Kitui, Nakuru and Garissa Counties where 5,000 households will be provided with the solar lanterns and the rocket stove based model

jikos. The project goal is “to anchor Kenya into the international carbon credit trading through a pragmatic programme which ensures direct benefits to the rural households and ensures their resilience to climate change impacts” (John Kioli, Green Africa Foundation).

Kenya Climate Working Group (KCCWG) - They are currently implementing advocacy projects in Climate Change and Energy in Kitui and Kajiado County. The timelines of the projects is 2016-2017 with a possibility of extension. They involve;

- Capacity building women groups through training on alternative livelihoods and clean energy-related enterprises.
- Supporting county governments to mainstream sustainable energy into their county actions and plans
- Review of County Integrated Development Plans to assess the level of gender and climate change mainstreaming.
- Piloting establishment of county-specific climate change bill

Anglican Development Services- is a religious based organization working on a water project to increase water security to the poor. They are also working with the county government of Kitui to set up county climate change fund.

Transparency International (Kenya) - It is a non-profit organization in Kenya with the aim of developing a transparent and corruption free society through good governance and social justice initiatives. Currently, the organization is developing a tool with indicators to track NDC progress in the country.

Caritas Kitui- They are currently implementing projects in water, food security, livelihoods and disaster risk reduction, justice and peace, environmental management, promotion of renewable energy and alternative income generating projects for the poor. They are also conducting a project in providing cook stoves to schools and households.

Global Alliance of Clean Cook Stoves is a partnership with countries and CSOs working with national partners, such as the Clean Cook stoves Association of Kenya (CCAK), and Kenya’s Ministry of Environment, Water, and Natural Resources, and the Ministry of Health to promote the adoption of clean cook stoves and fuels among 5 million households by 2020.

CSOs involved in climate policy in the country

Kenya Climate Working Group (KCCWG) - is a forum that brings together Civil Society Organizations in Kenya and donor partners, government departments and agencies working on climate change and for climate justice. They aid in creating synergies, harmonizing and strengthening of efforts in the design and implementation of activities that address Climate Change lobbying and advocating for favorable national policies in the promotion of climate justice for all, especially the most vulnerable. The main objective of this Network is to advocate and campaign for a positive policy and legislative framework that puts into account the effects of climate change on human (Kenya's) development. It also, support and coordinate civil society organizations, and the Government of Kenya to participate meaningfully in the climate change debates at the local, national, regional and international level, including Subsidiary bodies and Conferences of Parties (COP) (Wanja, Projects officer KCCWG).

Climate Change Network Kenya (CCN Kenya)

The organization aims to influence and participate in the development and implementation of appropriate sustainable development, climate change sensitive policies, projects and activities to minimize the vulnerability of peoples due to climate change; and work collectively with other actors towards inclusive sustainable development.

Southern Voices on Adaptation is a coalition of climate networks and partners in the Global South. It supports 14 partner networks from Asia, Africa and Latin America in developing and testing the Joint Principles for Adaptation as a benchmark for good national adaptation policies. The Southern Voices on adaptation dates back to COP15 in Copenhagen and has been strengthening partner networks in the Global South to advocate for climate change policies, nationally and globally, benefiting poor and vulnerable people.

The Pan African Climate Justice Alliance (PACJA) is an African coalition of civil society organizations that promotes and advocates for climate-friendly and equity-based development. It comprises of over 300 non-governmental organizations, community-based organization, foundations, trusts, Faith-Based Organization, national and regional networks. The core mandate of PACJA is climate change advocacy across Africa with Kenya hosting the continental secretariat while running various projects nationally. PACJA is currently running a project called 'Implementing the Paris Climate Change Agreement' and the main goal of the project is to support the implementation of the Paris agreement by enhancing transparency and accountability on the national commitments towards a zero carbon and climate resilient future.

PACJA has also a project in the pipeline to develop a tool that will monitor the implementation of Kenya's climate policy such as the NCCAP, NAP, NDC and the Climate fund.

Major CSOs active in climate issues but not in national climate policy

The Kenya Water and Sanitation Network (KEWASNET) whose vision is a society with access to safe water and sanitation, and their mission is to promote good governance in the water and sanitation sector thereby increasing access to services. They work to influence the policy environment to ensure Kenyans have access to affordable and safe water and sanitation services in a sustainable context. They also strengthen Civil Societies for effective engagement in the sector and enhance institutional development and sustainability.

Environmental Liaison Center International envisages societies living in ecological abundance. The organization aims to strengthen the capacity of civil society organizations to sustainably manage environmental resources, support governance and enhance livelihood and economic opportunities for communities. Previously the organization has held different projects in relation to the NDC and LED. Some of the projects include enhancing community environmental stewardship with a focus on resource conservation, environment energy and people program that ended in the year 2016. The activities under this project comprised of energy production, eco-stoves, and biogas production. Currently, ELCI is implementing a program on climate change and energy based on the 2015 Paris conference outcome that aims at emission reduction. The program objective is to provide effective tools and leadership for communities, CSOs and private sector to adapt to and mitigate the effects of climate change. Besides, it aims at Promoting access to clean energy in line with SDG no. 7 and in consideration of SDG no. 8, as well as the United Nations Sustainable Energy for All Initiative (SE4ALL).

The African Youth Initiative on Climate Change (AYICC) is a network of African based youth's organization. It brings on board rural youth groups, university groups, schools and like-minded individuals. The initiative was formed in 2006 in Nairobi, Kenya during the second International Conference of Youth preceding the UNFCCC, COP 12. The initiative performs a climate change advocacy role; linking climate change with key development challenges, such as poverty alleviation, agriculture, health, education, economic growth, urbanization and migrations, governance among others. Besides, they also develop and increase the capacity of youth in climate change mitigation and adaptation as well as influencing policy dialogues related to youth and sustainable development (from national to international levels).

Kenya Climate Finance Network hosted by Transparency International aims at developing a transparent and corruption free society through good governance and social justice initiatives. In the five-year period of 2012-2017, TI-Kenya priority is on addressing corruption in the following sectors, climate finance governance, water, education and humanitarian aid.

Institute of Environment and Water Management (IEWM)-Contributes to Kenya Gender & Climate Change Working Group, intervening to support inclusion of gender in climate policy

Care International- focuses on community climate change adaptation strategies in Africa,

Clean Cook stoves Association of Kenya- is a non- government organization whose mission is to facilitate the increased innovations in design, testing, production, marketing & use of clean cook stoves and fuels through better government policies increased public awareness and capacity building programs.

Community Action for Nature Conservation- is a non-governmental organization legally registered in Kenya subscribing to the universal values and practices of good governance. The organization also played a key role in training African legislators on climate policy, including six Kenyan ministries with a reference on Kenyan CC strategy. It has also conducted Climate Finance Budget Review for United Nations Development Programme UNDP.

ONKARU WRUA-The main mission of this organization is to mobilize communities to protect water and wetlands by building ownership. It also works with regional water bodies and promotes climate change awareness.

Lighting Africa project -by World Bank that empowers lives through offering off-grid energy as a sustainable solution to energy-poverty in Sub-Saharan Africa

Umande Trust organization- is actively involved in water supply, sanitation, and environmental services in close partnership with communities in Kenya's Urban Centers.

The Kenya Climate Justice Women Champions (KCJWC) - is a woman led institution advancing climate justice for all in Kenya with a special focus on gender- responsive approaches to adaptation and mitigation of climate change.

CHAPTER SIX

OPPORTUNITIES FOR CSOs

There is a huge gap between policy formulation and implementation. In order to enhance citizen action on climate change mitigation, adaptation and resilience, existing climate change governance framework should be interrogated to trigger its implementation. The Climate Change Act, 2016 provides overarching climate legislation with regard to; policy coordination and oversight, response measures and actions, public participation and access to information as well as financial provisions.

On the other hand, the National Climate Change Action Plan (2018-2022) provides key adaptation and mitigation priorities for the country as well as the financial needs in the implementation of the Plan which includes the NDC realization.

Periodic analysis to unpack complex issues and research to facilitate evidence-based advocacy will uphold the relevance of civil society contribution in policy-making processes as well as implementation of actions. Partnerships with government, private sector, and academia/research institutions will be instrumental in providing synergy in policy making, research and implementation hence well-informed decisions and prudent utilization of resources with respect to the Country climate action needs.

In addition, access to information continues to pose a threat to the development priorities of the nation. The information could be in terms of the lack of awareness on the existing legislations by communities as well as decision makers in government. As well as, lack of information on available technologies.

Most of Kenya's plans- citing the NDC and the GESIP- are reliant on external sources of funding and partnerships in order for the country to achieve its targets as outlined in the NDC document. They are therefore dependent on climate financing and partnerships with, for instance, private sector players and the Civil Society.

6.1 Main barriers for CSO involvement in national climate policy

- Inadequate knowledge on climate change policies related issues amongst the CSOs. Technical knowledge limits CSOs to participate in meaningful policy discussions to share their views.
- Poor coordination and communication among government ministries and other relevant institutions leading to confusion affecting the flow of information

- Inadequate inclusion and synergy for partnership with CSOs where the government prefers to conduct other climate processes in isolation and involves civil societies in the later stages.
- Inadequate involvement of CSOs in the policy formulation and Implementation. Only about 35% of CSOs are involved in policy issues and implementation.
- Underfunding/ inadequate funding in climate change related courses despite the emerging issues and trends that arise
- Data capture not harmonized thus hindering smooth climate information flow. The universities are hubs for research and knowledge sharing, same as CSOs and research institute. Despite the rich information database, there isn't a common pool for the data, which makes it inaccessible or not useful.
- Prevalent corruption in all sectors of the economy thus affecting relations among stakeholders.
- Poor working relationship between government and CSOs. Most CSOs play a watchdog role in implementation and formulation of policies and activities by the government, which more often doesn't arguer well with the government thus creating hostility. To counter this challenge, most entities have adopted a participatory approach in project implementation.
- Inadequate policy enforcement of laws and policies to secure sustainable management of the environment and natural resources. Kenya has various policies and acts related to climate change, some have already been approved while others are being drafted but despite this, enforcement is very low.
- Financial constraints, government and CSOs/NGOs overdependence on donor/grants to implement climate change interventions.

6.2 Overcoming Barriers

There is need to initiate capacity-building programs and other support to increase the CSO involvement in climate policy. Therefore, there is a call for:

- More awareness creation on climate change challenges and options
- Build capacity of CSOs to generate data that will influence climate change policies
- Build capacity of journalists to improve reporting on climate change matters.
- Grassroots organizations need capacity building especially to improve advocacy skills and resource mobilization.
- Build capacity of CSOs to improve research methods needed to provide more evidence.

- Build capacity of CSOs to enable them tap the resources that are available but require specific skills and knowledge to tap into, for example from GEF & GCF.
- Awareness creation on the Paris Agreement (PA), NDCs, LEDs, SDGs and SE4ALL
- There is need for policies and legal instrument harmonization

6.3 CSOs Opportunities in EASE&CA project implementation

- Opportunity to participate in development of capacity building program for CCC, County governments and Climate Change Directorate (CCD) on NDC implementation.
- Opportunity to participate in development of effective information sharing system between the line ministries, county governments, CSOs and CCD on mitigation actions e.g. (MRV)
- Opportunity in building capacity, review of gaps and improve the evidence base on climate change issues
- Opportunity in appraising mitigation policy options together with other relevant stakeholders.
- Opportunity to review the strategic priorities for each key sector together with other stakeholders.
- Opportunity to participate in development of mitigation sector action plans as well as county mitigation and sectorial action plans
- Opportunity to provide support and resources for mitigation actions
- Opportunity to identify avenues for financing of mitigation actions
- Opportunity to participate in review and updating of the NDCs

EASE-CA PROJECT RECOMMENDATIONS AND CONCLUSION

The EASE-CA project strives for inclusion of CSO viewpoints in the LEDS development and the development of more ambitious NDCs as there exists different skills, knowledge, and experience in the field of climate change within the civil society groups that have not been adequately harnessed. The majority of civil societies in Kenya are trying to familiarize themselves with the NDCs, LEDS, SE4ALL and GCF because they appear as new concepts to them, though interesting. There is still low involvement of civil societies in the development and implementation of national climate policies because only a few CSOs have been given the privilege to participate.

Major obstacles to the CSOs involvement in national policy formulation and implementation are inadequate knowledge on climate change issues, poor coordination and communication among stakeholders, financial constraints and prevalent corruption in all sectors of development that affects stakeholder's relation. Therefore, there is need for capacity building in terms of knowledge to empower CSOs on climate policies, strategies, and commitments such as the NDCs, LEDS, SE4ALL and GCF. There is also need for inclusion and synergy for partnership amongst stakeholders and bridging of the gap of poor coordination by promoting meaningful partnership amongst different stakeholders such as the government, private sector, CSOs, academia, and media. This is needs also to be scaled up through the East African CSOs for a stronger networks and bargaining power internationally.

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