



The Business Case for Investing in Climate Change

Climate Financing and
Investment Opportunities for
Climate Change Adaptation



REPUBLIC OF KENYA



Food and Agriculture Organization
of the United Nations



GREEN
CLIMATE
FUND

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Table of Contents

| | |
|--|-----|
| Acknowledgements | i |
| Lists | ii |
| Foreword | iii |
| Abbreviations | iv |
| 01 Economic Costs of Climate Change Impacts in Kenya | 1 |
| 02 Overview of Climate Change Adaptation & Mitigation Sectors and Projects | 2 |
| 03 Kenya Climate Change Adaptation Priority Sectors & Implementation Budgets | 5 |
| 04 Rationale for Private Sector Investment in Climate Change Adaptation | 9 |
| 05 Investment Opportunities for Private Sector in Climate Change Adaptation | 14 |
| 06 Sources of Financing for Climate Change Adaptation | 17 |
| Annexes | 20 |

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The report is intended to guide the implementation of climate change solutions and to improve, enhance and strengthen private sector engagement in climate change mitigation and adaptation in Kenya.

Lists

LIST OF TABLES

| | |
|---|----|
| Table 1: Adaptation & Mitigation Sectors and Projects | 02 |
| Table 2: GESIP Implementation Budget | 07 |

LIST OF FIGURES

| | |
|---|----|
| Figure 1: NAP 2015-2030 Priority Actions Implementation Budget | 05 |
| Figure 2: Kenya Budget Estimate for Mitigation & Adaptation Actions | 06 |
| Figure 3: Allocation of Updated NDC Budget | 07 |

Foreword

The Kenyan economy is dependent on climate-sensitive sectors such as rain-fed agriculture, tourism, water, energy, wildlife, and health whose vulnerability is exacerbated by climate change. Eighty-four per cent of the country is classified as arid and semi-arid, leaving only sixteen per cent of the country's land area as the source of food and livelihood for the population of over 48 million. Climate variability has significant economic costs in Kenya, especially arising from extreme climatic events such as floods and droughts affecting the above sectors. The adverse climatic events cause major socio-economic impacts which affect the whole country and reduce economic growth.

The economic costs of climate change are widespread across all the economic sectors in Kenya. Some of these costs include threats to coastal zones through continued sea-level rise, cost of treating diseases and ailments caused by air and water pollution among other health hazards, increased demand for energy, infrastructure, water resources, grazing land, agriculture, disruption of various value chains, and loss of ecosystem. Climate change adaptation can reduce these economic costs, but adaptation has a cost. The country in the national climate change plans and strategies has prioritised several adaptation and mitigation sectors that are relevant to its circumstances.

The private sector has faced the effects of climate variability and has suffered negative impacts. The sector as a driver of economic growth in Kenya is expected to align itself with the government plans and strategies and prioritise sectors for investing its resources and for raising external financing from local and international sources through debt, equity, and grants. The transition to a low-carbon economy will affect all economic sectors and industries, present significant risks and also create significant opportunities for private sector organisations. In this regard, the rationale for investing in climate change adaptation cannot be disputed.

The motivations for private sector investment in adaptation fall into three broad categories: investing in their supply chain resilience, providing climate adaptation goods and services, and investing in the adaptation of others. This report on the business case for private sector investment in climate change adaptation has been produced as part of a process to develop a private sector strategy to guide the implementation of climate change solutions and to strengthen private sector engagement in climate change adaptation in Kenya.

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Abbreviations

| | |
|--------|---|
| AFC | Africa Finance Corporation |
| AfDB | African Development Bank |
| ASAL | Arid and Semi-Arid Lands |
| BAU | Business as Usual |
| CIDP | County Integrated Development Plans |
| EWS | Early Warning System |
| FAO | Food and Agriculture Organisation of the United Nations |
| GCF | Green Climate Fund |
| GDP | Gross Domestic Product |
| GEF | Global Environmental Facility |
| GESIP | Green Economy Strategy and Implementation Plan |
| IEA | International Energy Agency |
| IFAD | International Fund for Agricultural Development |
| IFC | International Finance Corporation |
| IPCC | Intergovernmental Panel on Climate Change |
| KCB | Kenya Commercial Bank |
| MSME | Micro, Small and Medium Enterprises |
| MtCo2e | Million Tonnes of Carbon Dioxide Equivalent |
| MTP | Medium-Term Plans |
| NAP | National Adaptation Plan |
| NCCAP | National Climate Change Action Plan |
| NDA | National Designated Authority |
| NDC | Nationally Determined Contribution |
| NEMA | National Environment Management Authority |
| ODA | Official Development Assistance |
| PPP | Public-Private Partnerships |
| TCFD | Task Force on Climate-Related Financial Disclosures |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environmental Facility |
| UNFCCC | United Nations Framework Convention on Climate Change |
| UNIDO | United Nations Industrial Development Organization |

01 | Economic Costs of Climate Change Impacts in Kenya

The Kenyan economy is dependent on climate-sensitive sectors such as rain-fed agriculture, tourism, water, energy, wildlife, and health whose vulnerability is exacerbated by climate change. Eighty-four per cent (84%) of the country is classified as arid and semi-arid, which implies 16% of the country's land area is the source of food and livelihood for the population of over 48 million¹. Climate variability has significant economic costs in Kenya, especially arising from extreme climatic events such as floods and droughts affecting the above sectors. The adverse climatic events cause major socio-economic impacts which affect the whole country and reduce economic growth.

Various studies confirm the above comments, for example, the Stockholm Environment Institute 2009 report² on the economics of climate change in Kenya concluded that periodic floods and droughts like what was witnessed between the years 1998 and 2000 were estimated to have economic costs of USD2.8 billion from loss of crops and livestock, forest fires, damage to fisheries, reduced hydro-power generation, reduced industrial production and reduced water supply. The report further concluded that the continued annual burden of extreme weather events in the country would lead to large economic costs possibly as much as \$0.5 billion per year and equivalent to around 2% of Gross Domestic Product (GDP).

Increase in economic costs arising from climate variability has been on an upward trend. Kenya National Climate Change Action Plan (NCCAP) 2018-2022 indicated that the fiscal liability of floods, which are linked to climate change in Kenya, is equivalent to 5.5% of GDP every seven years³, while that of droughts, also linked to climate change, is equivalent to 8% of GDP every five years.

The economic costs of climate change are widespread across all the economic sectors in Kenya. Some of these costs include threats to coastal zones through continued sea-level rise, cost of treating diseases and ailments caused by air and water pollution among other health hazards, increased demand for energy, infrastructure, water resources, grazing land, agriculture, disruption of various value chains, and loss of ecosystem. Climate change adaptation can reduce these economic costs, but adaptation has a cost. The SEI report estimated the cost of adaptation by 2030 to be in the range of USD 1 to 2 billion per year. The estimate has since gone up significantly, the government of Kenya has estimated the cost of adaptation to be USD 43.93 billion in the period between 2020 to 2030 (an average of USD4.4 billion per year).

There are several adaptation actions identified in research and in the government of Kenya's climate change action plans and strategies which are discussed later in this report. Studies done in the country indicate that adaptation has large benefits in reducing present and future damages caused by climate change. In this regard, Kenya has prioritised adaptation in addressing the adverse socio-economic impacts related to climate change.

1 Government of Kenya, Ministry of Environment & Forestry, 2020 Kenya's Updated NDC

2 Stockholm Environment Institute (SEI), 2009. Economics of Climate Change Kenya

3 Government of Kenya, 2018. The second National Climate Change Action Plan (NCCAP) 2018-2022

02 | Overview of Climate Change Adaptation & Mitigation Sectors and Projects

According to the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5)⁴, many adaptation and mitigation options can help address climate change, but no single option is sufficient by itself. Effective implementation depends on policies and cooperation at all scales and can be enhanced through integrated responses that link mitigation and adaptation with other societal objectives.

The report further notes that adaptation and mitigation options exist in all sectors, however, their context for implementation and potential to reduce climate-related risks differs across sectors and regions. For instance, some adaptation responses involve significant co-benefits, synergies, and trade-offs. Considering this fact, countries prioritise adaptation and mitigation sectors that are more relevant to their circumstances. Each of the sectors has a portfolio of projects in which private and public sectors can invest.

Table 1 below indicates the various sectors under both mitigation and adaptation and the possible opportunities under each sector which the private sector can consider in efforts to alleviate climate change impacts.

Table 1: Adaptation & Mitigation Sectors and Projects (Source: various reports e.g., UNFCCC, IPCC, and CPI reports)

| SECTOR | OPPORTUNITIES |
|---|--|
| ADAPTATION | |
| Water and Wastewater | <ul style="list-style-type: none"> • Demand-side management activities reducing water consumption or increasing water use efficiency and supply-side management activities enabling, for example, the expansion of supplies, reducing water losses, or improving cooperation on shared water resources. • Installation of rainwater harvesting equipment and water storage where the water supply is negatively affected by climate change. |
| Disaster risk Management | <ul style="list-style-type: none"> • Early warning/emergency response systems to adapt to increased occurrence of extreme events by improving disaster prevention, and management and reducing potentially related losses and damage. • Construction or improvement of drainage systems or barriers to adapt to an increase in the frequency or severity of floods. • Preparation of organisation-wide climate change vulnerability assessment. |
| Agriculture, Forestry, Land use and natural resource management | <ul style="list-style-type: none"> • Introduction of agricultural adaptation practices, including crop diversification, planting of drought-resistant crops, efficient irrigation, and soil conservation measures that conserve soil moisture. |
| Infrastructure and built environment | <ul style="list-style-type: none"> • Adaptation components to improve the vulnerability to extremes caused by climatic changes in existing infrastructure. |

| SECTOR | OPPORTUNITIES |
|---|---|
| Other adaptation activities | <ul style="list-style-type: none"> • This category can include, for instance, other eligible activities that cannot be classified in the above categories, for example, cross-sector activities such as credit lines earmarked for adaptation activities or other financial services (if not included in the categories above) • Dedicated budget support to national or local authorities for the implementation of climate change adaptation policies • Other awareness-raising and technical assistance activities |
| MITIGATION | |
| Renewable Energy Generation | <ul style="list-style-type: none"> • Installation of solar PV systems • Installation of solar heating systems • Biofuels (including bioethanol) • Biogas and biomass power generation • Geothermal power generation • Production of power from wind • Other renewable technologies |
| Energy Efficiency in Industries and Buildings | <ul style="list-style-type: none"> • Reduction of greenhouse gases emissions resulting from industrial process improvements, and cleaner production (e.g., cement, chemical, etc.), reduction of heat losses and/or increased waste-heat recovery and/or resource efficiency. • Reduction of greenhouse gases emissions resulting from industrial process improvements and cleaner production. • Retrofit of existing industrial, commercial, and residential air-conditioning and refrigeration systems to switch to a cooling agent with a lower potential for global warming. |
| Non-Energy GHG Reductions | <ul style="list-style-type: none"> • Industrial process emissions: Reduction of greenhouse gas emissions resulting from industrial process improvements and cleaner production (for example, cement, chemical, etc.) • Air conditioning and refrigeration: Retrofitting of existing industrial, commercial, and residential infrastructure to switch to cooling agents with a lower global warming potential • Fugitive emissions: Reduction of gas flaring or methane fugitive emissions in the oil and gas industry, coal mine methane capture and storage, etc. |
| Infrastructure, Energy and built environment | <ul style="list-style-type: none"> • Adaptation components in energy projects only: to improve the climate resilience of existing infrastructure, for example, transport infrastructure, energy infrastructure, riverine infrastructure (including built flood protection) and human settlements (for instance, housing – if not part of a wider disaster risk management strategy). • Building resilience into infrastructure such as protection systems for dams to reduce vulnerability to extremes caused by climatic changes |
| Low-carbon technologies | <ul style="list-style-type: none"> • Production of components, equipment, or infrastructure dedicated to the renewable and energy efficiency sectors. |
| Waste and Wastewater | <ul style="list-style-type: none"> • Treatment of wastewater, including wastewater collection networks, that reduces GHG emissions. • Waste management that reduces methane emissions (e.g., waste incineration, landfill gas capture and flaring/power production, etc.). • Waste recycling measures with a demonstrated net mitigation benefit. |

| SECTOR | OPPORTUNITIES |
|---|--|
| Agriculture, Forestry, Land use and natural resource management | <ul style="list-style-type: none"> • Agriculture projects that improve existing carbon pools (reduction in fertilizer use, rangeland management, collection and use of bagasse, rice husks, or other agricultural waste, low tillage techniques that increase carbon contents of soil, etc.) • Rehabilitation of degraded lands • Reduction in energy use in traction (for example, efficient tillage), irrigation, and other agricultural processes • Livestock projects that reduce GHG emissions (such as manure management with bio-digesters producing biogas for heating or cooking) • Afforestation and reforestation of lands; sustainable forest management and conservation • Other sustainable agriculture practices. |
| Sustainable Transport | <ul style="list-style-type: none"> • Programs incentivising the adoption of non-motorized transport (bicycles, pedestrian mobility) among workers, leading to a reduction in the use of passenger cars • Retrofit or replacement of existing industrial vehicles, achieving a substantial increase in energy efficiency (including the use of lower-carbon fuels, electric or hydrogen technologies, etc.) |
| Financial Services | <ul style="list-style-type: none"> • Provision of dedicated micro-finance or credit lines for renewable energy generation • Provision of dedicated micro-finance or credit lines for energy efficiency improvements • Provision of dedicated micro-finance or credit lines for sustainable land-use and agricultural practices • Provision of dedicated micro-finance, credit lines or risk mitigation instruments for any of the other above-mentioned climate mitigation activities. |
| Other mitigation activities | <ul style="list-style-type: none"> • This category can include, for instance, other eligible activities that cannot be classified in the above categories, for example, cross-sector activities such as credit lines earmarked for mitigation activities or other financial services (if not included in the categories above). • Dedicated budget support to national or local authorities for the implementation of climate change mitigation policies. • Other awareness-raising and technical assistance activities. |

03 | Kenya Climate Change Adaptation Priority Sectors & Implementation Budgets

The goal of climate change adaptation in Kenya is to ensure a climate-resilient society. This is to be achieved through mainstreaming climate change adaptation into government medium-term plans (MTPs) and county-integrated development plans (CIDPs) and implementing adaptation actions across all sectors of the economy⁵. **National Climate Change Action Plan 2018-2022 prioritised adaptation actions in agriculture, livestock, water, environment, infrastructure, sustainable livelihoods, energy infrastructure and tourism sectors⁶.** These sectors which are the focus of the country’s climate change action plan are the same that the Kenya private sector should prioritise for investing its resources and for raising external financing from local and international sources through debt, equity, and grants.

The National Adaptation Plan (NAP 2015-2030) estimated the budget needed to implement the adaptation actions prioritised in NCCAP till the year 2030 to be USD 38.3 billion (KES 3.9 trillion). The estimate for the various sectors is shown in figure 1 below. The gaps noted in the NAP are awareness, capacity building, and financing. The responsibility for implementation of NAP lies with the National Government Ministries, Departments and Agencies (MDAs), County Governments, research institutions and academia, civil society, and the private sector.

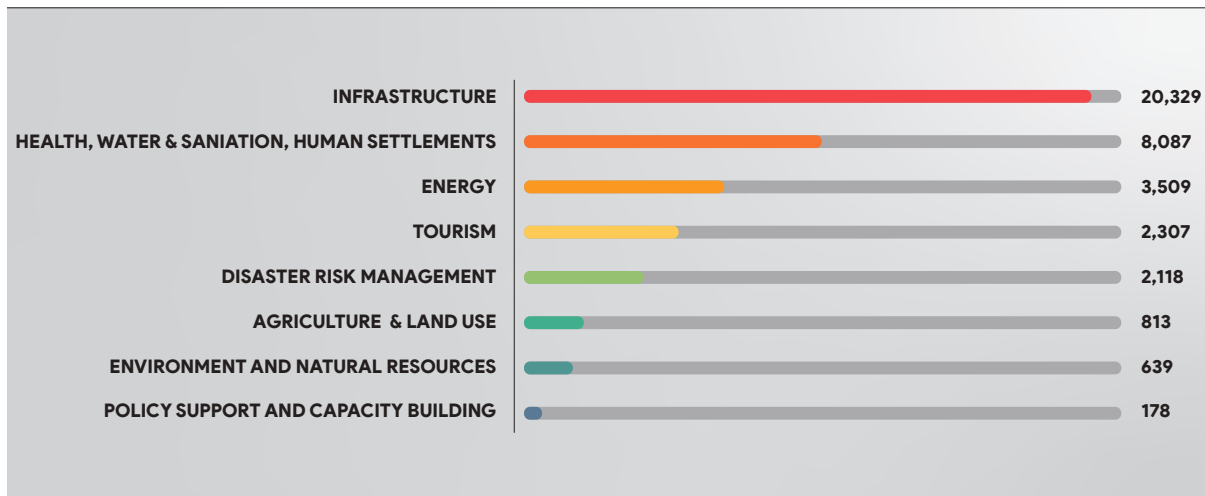


Figure 1: NAP 2015-2030 Priority Actions Implementation Budget (USD million) (Source : NAP 2015-2030)

5 Kenya National Adaptation Plan: 2015-2030, Government of Kenya, July 2016

6 Government of Kenya, 2018. The second National Climate Change Action Plan (NCCAP) 2018-2022

Kenya’s updated Nationally Determined Contribution (NDC) 2020, indicates that the country is committed to enhancing its adaptation ambition to bridge implementation gaps by taking the following actions.

- Enhancing the adaptive capacity and climate resilience across all sectors of the economy.
- Exploring innovative livelihood strategies for enhancing the climate resilience of local communities through the financing of locally-led climate change actions.
- Enhancing risk-based approach to climate change adaptation through the development and application of comprehensive climate risk management tools that would help in addressing and adaptively managing climate risks.
- Addressing residual climate change impacts, loss, and damage, especially in the production sectors of the economy.
- Enhancing generation, packaging and widespread uptake and use of climate information in decision-making and planning across sectors and counties with robust early warning system (EWS).
- Enhancing uptake of adaptation technology, especially for women, youth and other vulnerable groups incorporating scientific and indigenous knowledge.
- Enhancing investment in the ocean and blue economy.
- Institutional strengthening of state and non-state institutions and strengthening tools for adaptation monitoring, evaluation and learning at national, county, and non-state actors for instance academia and research institutions, private sector, and civil society.

The updated NDC estimates that the country will require over USD 62 billion for mitigation and adaptation actions across sectors up to 2030 (see figure below). The estimated cost for mitigation is USD 17,725 million sourced 21% locally and 79% from international support. **The cost of adaptation actions from the years 2020 to 2030 is USD 43,927 million of which the government intends to mobilise 10% from domestic sources while 90% of the cost will require international support in form of finance, technology development and transfer and capacity building⁷.**

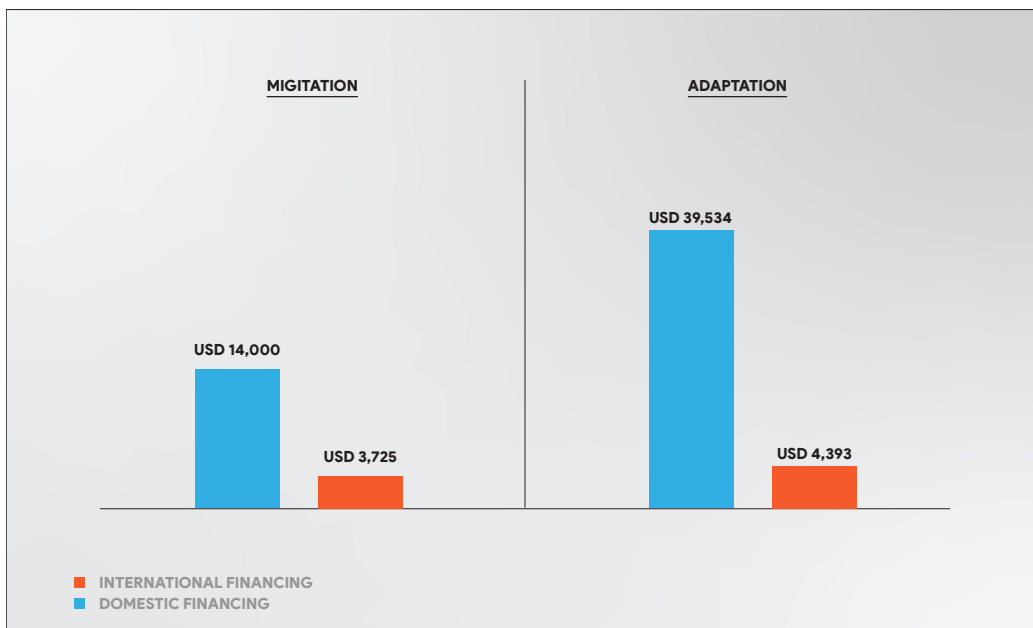


Figure 2: Kenya Budget Estimate for Mitigation & Adaptation Actions 2020-2030 (USD million) (Source: Kenya Updated NDC, 2020)

⁷ Government of Kenya, Ministry of Environment & Forestry, 2020 Kenya’s Updated NDC

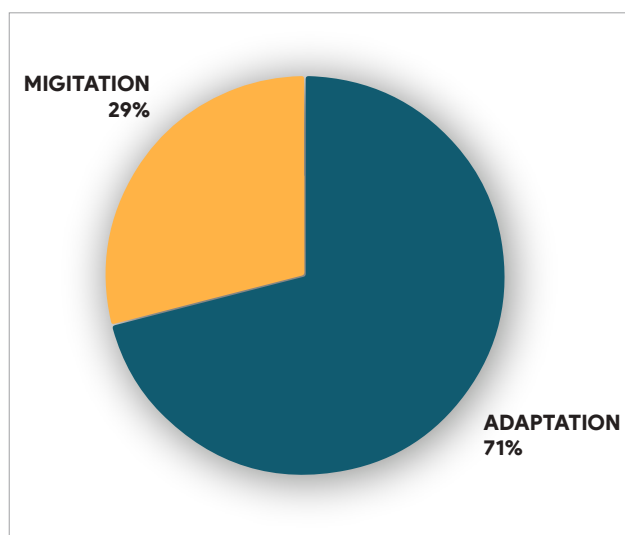


Figure 3: Allocation of Updated NDC Budget (Source: Kenya Updated NDC, 2020)

In 2016, Kenya developed, the Green Economy Strategy and Implementation Plan (GESIP) 2016 – 2030 - a low-carbon, resource-efficient, equitable and inclusive socio-economic transformation. GESIP has five thematic areas and several strategies aimed at accelerating a transition towards a globally competitive low-carbon pathway, as well as defining a road map for eliminating fiscal constraints leveraging international financial mechanisms. Implementation of GESIP strategy was estimated to cost KES 2.4 trillion (USD 24 Billion) (see table 1 below). The funds for the transition will be raised from international and domestic sources as well as from the private and public sectors.

Table 2: GESIP Implementation Budget (Source: Green Economy Strategy and Implementation Plan (GESIP) 2016 – 2030)

| THEMATIC AREA | SECTOR | OUTCOMES | TIME FRAME | COST (KES) |
|----------------------------|--------------------------|--|------------|---------------|
| Sustainable infrastructure | Infrastructure-Transport | Shifts in transport model towards low carbon | 2016-2030 | 200 billion |
| | Water | Improved access to water and sanitation services | 2016-2030 | 300 billion |
| | Energy | Reduced emissions from the electricity sector & pollution from fossil fuels | 2016-2030 | 1,535 billion |
| | Infrastructure-buildings | <ul style="list-style-type: none"> Decreased use of energy and water. Greener & more efficient buildings | 2016-2030 | 5 billion |
| | Infrastructure-other | Increased private investment in sustainable infrastructure | 2016-2030 | 5 billion |
| | Food security | Improved food security & nutrition | 2016-2021 | 150 billion |

| THEMATIC AREA | SECTOR | OUTCOMES | TIME FRAME | COST (KES) |
|---|-------------------|---|------------|-------------|
| Building resilience | Finance | New technologies/methods for public resources management | 2016-2030 | 23 billion |
| | Social protection | Enhanced adaptive capacity of vulnerable communities | 2016-2030 | 50 billion |
| | Disaster risk | Strengthened coordination & DRM | 2016-2030 | 10 billion |
| Sustainable natural resource management | Natural Resource | Increased value of natural resource management in GDP | 2015-2020 | 50 million |
| | | Change in tree cover | 2015-2020 | 50 billion |
| | | Sustainable extractive industry | 2015-2025 | 30 billion |
| | | Resilience of marine & aquatic resources | 2015-2020 | 500 million |
| | Land | Sustainable land management & increased productivity | 2015-2020 | 300 million |
| Resource efficiency | Energy | Increase in national energy efficiency | 2016-2030 | 250 million |
| | Water | Water use efficiency | 2016-2030 | 50 billion |
| | Water | Wastewater management | 2016-2030 | 10 billion |
| Sustainable livelihoods | Green Economy | Mainstream green economy into all forms of education & training | 2016-2019 | 20 million |
| | | Creation of green jobs | 2016-2026 | 100 million |
| | | Green innovation & technology development | 2016-2026 | 200 million |
| | Environment | Reduce environmental-related health risks | 2016-2025 | 100 million |

The country has created national climate action plans with an associated portfolio of projects and budgets. To facilitate implementation, the country could source for financing through various resource streams that are currently fragmented, both in terms of sources and destinations (for example government ministries, budget support, national implementing agencies, private sector, and civil society).

There are a handful of financial instruments and mechanisms, for instance, loans, grants, debt swaps, carbon markets, national and county climate funds, and insurance instruments that the government and private sector could use to finance the mitigation and adaptation actions.

04 | Rationale for Private Sector Investment in Climate Change Adaptation

According to the Task Force on Climate-Related Financial Disclosures (TCFD)⁸, one of the most significant risks that organisations face today relates to climate change. The TCFD recommendations indicate that although it is widely recognised that continued emission of greenhouse gases will cause further warming of the planet and this warming could lead to damaging economic and social consequences, the exact timing and severity of physical effects are difficult to estimate.

Additionally, the large-scale and long-term nature of the above problem to economic decision-making is challenging. Accordingly, many organisations wrongly perceive the implications of climate change to be long-term and, therefore, not necessarily relevant to current decisions. The potential impacts of climate change on organisations, however, are not only physical and do not manifest only in the long term.

The transition to a low-carbon economy will affect all economic sectors and industries, present significant risks and also create significant opportunities for private sector organisations focused on climate change mitigation and adaptation solutions. In 2015, the International Energy Agency (IEA)⁹ estimated that the expected transition to a lower-carbon economy globally is estimated to require around USD1 trillion of investments every year for the foreseeable future, generating new investment opportunities.

Further, the risk-return profile of organisations exposed to climate-related risks will keep changing significantly due to the need for measures to mitigate the physical impacts of climate change, develop climate policies, enact climate adaptation plans and strategies and adopt new technologies. The estimated value at risk due to climate change to the total global stock of manageable assets as of 2015 was estimated at ranging from USD4.2 trillion to USD43 trillion up to the end of the century¹⁰.

Given of the above, the rationale for investing in climate change adaptation cannot be disputed. In addition, there are other reasons why the private sector must be involved in climate change adaptation and investments thereof. Several of these reasons identified in climate change literature are highlighted below.

- The private sector has faced the effects of climate variability and has suffered negative impacts of droughts and flood risks including operational, supply chain and raw materials risks, water and energy supply priorities, financial and market risks, agriculture, food security and rural development, ecosystem threats, poor infrastructure, unreliable weather information and public health¹¹. The sector faces significant exposure to climate risk through its assets, operations, and supply chains, and thus has considerable reason to invest in climate risk management, both to protect itself and also to harness new business opportunities arising from a changing climate.

8 TCFD, 2017. Recommendations of the Task Force on Climate-related Financial Disclosures

9 International Energy Agency, 2015. World Energy Outlook Special Briefing for COP21

10 TCFD, 2017. Recommendations of the Task Force on Climate-related Financial Disclosures

11 Kenya National Adaptation Plan: 2015-2030, Government of Kenya, July 2016

- The private sector is the main driver of economic growth in Kenya. In 2019 the sector contributed 70.5% of total employment in the country¹². Moreover, the future of the economy is largely dependent on the performance of the sector. The Government of Kenya has tried to articulate the important role played by the sector in the various climate change action plans, legal, policy and institutional framework¹³. Nonetheless, the technical interpretation of climate change issues and in particular, climate change adaptation is not yet clear to the sector. This calls for more action in form of building capacities of the actors, knowledge sharing and investments in climate adaptation sectors to be able to deliver the sector's climate obligations to the enterprises and the larger economy.
- Private sector assets, operations and supply chains are at significant risk from climate change. Climate change is exacerbating the existing risks and creating new ones¹⁴, hence integrating climate risk management within existing corporate risk management practices makes good business sense, both to protect against potential risks, but also to harness new business opportunities arising from climate change.
- The private sector is an important source of finance, innovation, technology, and risk management expertise that remains virtually untapped by the public sector in climate change. Given the significant risks that climate change poses to economic growth in Kenya, it is critical to have the private sector involved in managing these risks.
- Globally, the private sector has already started identifying the market opportunities of climate change and investing; for instance, in clean and renewable energy such as wind and solar, energy efficiency within industries, wastewater management, green and climate financing, insurance, and developing and marketing new varieties of climate resilient seeds.
- The above-mentioned investments are not widespread in Kenya and are mainly carried out by large enterprises leaving most Micro, Small and Medium Enterprises (MSMEs), smallholder farmers, fishermen, and artisanal miners behind. Numerous barriers constrain widespread investment in climate-proofing and creating solutions for climate adaptation in the sector. The barriers include capacity constraints (for example, limited capacities to adapt to climate shocks), major information gaps, weak financial markets (for instance high-interest rates and lack of capacity within the sector to write bankable proposals to raise funding) and policy/regulatory constraints, for example, weak implementation of already developed climate policies and laws. The sector is therefore called upon to act to surmount these constraints.
- The fiscal liability of floods, which are linked to climate change in Kenya, is equivalent to 5.5% of the Gross Domestic Product (GDP) every seven years¹⁵, while that of droughts, also linked to climate change, is equivalent to 8% of GDP every five years. The continuous loss of biological resources – owing to factors such as the expansion of human activities into marginal areas and the destruction of forests and wetlands – translates into the

12 KNBS, 2020. Kenya Economic Survey

13 NCCAP 2018-2022, NAP 2015-2030, Vision 2030, NDC, 2020 etc.

14 Acclimatise, 2016. Building Readiness of the Private Sector in Bangladesh for GCF Accreditation

15 Government of Kenya, 2018. The second National Climate Change Action Plan (NCCAP) 2018-2022

loss of economic potential and options for commercial development which implies a loss of business to the private sector but also an opportunity to provide solutions.

- The public sector can help overcome these barriers for instance by developing and implementing policies supportive of the new markets created by climate change, providing access to data, technical support, and low-cost finance for climate adaptation projects (for example risk guarantees such as partial credit guarantees, performance guarantees, political risk guarantees), fiscal incentives (such as tax breaks) and nurturing public-private partnerships (PPPs). Despite the role of the public sector as stated above, the private sector should assume a prominent role in successful partnerships.

In addition to the above reasons, the justification for action on climate change by the private sector is strong in Kenya. Kenya's economy is heavily natural-resource dependent and suffers from the vagaries of climate change and climate variability as evidenced by many local and international studies. The country is already experiencing the effects of climate-related disasters such as droughts and floods which have disrupted various business value chains. In response to these challenges, the government of Kenya and its partners have invested in programmes to adapt to the changing climate and secure the lives and livelihoods of people and communities.

The government of Kenya has developed some of the most progressive policies and laws to guide response to climate change risks. Further, the country has been investing more than KES 280 billion (USD 2.8 billion) of public and private capital in climate-related activities every year since 2018¹⁶. Despite these expenditures, the contribution is way below the financing that Kenya needs annually to meet the targets set in the various national climate change adaptation and mitigation plans.

The updated NDC notes that over the past decade, Kenya has been experiencing successive impacts of climate change resulting in great socio-economic losses estimated at 3.5% of GDP annually, and impeding development efforts. Financing implementation of the first NDC has been from domestic sources although it was fully conditional to international support. The priority mitigation and adaptation actions in the updated NDC will be implemented through the 5-yearly NCCAPs.

Additionally, the updated NDC¹⁷ has raised the target from a 30% emission reduction to 32% by 2030 relative to the business-as-usual (BAU) scenario of 143 MtCO₂eq. The cost of implementing mitigation and adaptation actions in the updated NDC is estimated at USD 62 Billion, with the country committing to raise 13% (USD 8.06) of this budget from domestic sources and 87% (USD 53.94) expected from international support.

¹⁶ Government of Kenya Budget – 2017/18, 2018/19 and 2019/20

¹⁷ Government of Kenya, Ministry of Environment & Forestry, 2020 Kenya's Updated NDC

Resource requirements for mitigation activities for the period 2020 to 2030 are estimated at USD 17.725 billion with the country contributing 21% (USD3.725 billion) from domestic sources and the rest is pegged on international support. Financing adaptation actions up to 2030 are estimated to cost USD 43.927 billion. The country will mobilise 10% of this budget from domestic sources and 90% from international support in form of finance, technology development and transfer and capacity building.

Considering the high costs of climate change mitigation and adaptation stated above and Kenya's public budgetary constraints, relatively high fiscal deficit which has limited the country's overall fiscal space, weak pipelines of bankable projects and limited capacities and funding, engagement of the private sector is required to scale up existing investments in climate change initiatives.

The impacts of climate change vary from sector to sector and industry to industry and therefore the ultimate business case for investment in adaptation in Kenya is sector specific. However, in many regions of the world, enterprises have already begun to make substantial investments in climate change adaptation. These investments are being made for three main reasons¹⁸.

1. To manage risks for business continuity and reputation.
2. To capitalise on new markets and business opportunities.
3. To comply with policies, regulations, and investor interests.

Following on the same steps, different private sector actors in Kenya will have different reasons for investing in climate resilience. For example, agricultural interests in Kenya are more impacted by climate change, and this will continue to get worse as crops fail because of increasing temperatures, variations in rainfall patterns and invasion of migratory locusts searching for food. This will impact many private sector actors throughout the agribusiness value chain, for instance, as they see risks to their operations and supply chains. Larger enterprises may see threats to their reputation, should they fail to demonstrate that they are taking climate change seriously.

While the impacts of climate change pose many risks for businesses in Kenya, addressing these impacts will not only ensure business continuity but will also create a host of new business opportunities. The ability of the private sector to develop new products and services to tackle climate change would enhance the competitiveness of the Kenyan economy.

Kenya NAP, 2015-2030, recognises the need for a timely and coordinated response to climate shocks by the private sector. One of the objectives of the NAP is to enhance the resilience of private sector investment in the national transformation, economic, and social pillars of Vision 2030 to climate shocks. The private sector is expected to respond to this despite the current limited understanding and need for appropriate technical interpretation of climate change issues and in particular, climate change adaptation within the sector. The NAP concludes that there is a need to develop a business case for private sector investment in adaptation.

18 Crawford & Church, 2019

Creating markets in technologies¹⁹ and services that are beneficial to adaptation is a key role for the private sector in the implementation of a national adaptation plan. For instance, technologies and practices for adapting agriculture to climate change range from improved weather forecasts to water conservation, drip irrigation, sustainable soil management, better livestock management, and change in crop types and planting²⁰. Some of these measures may need investment while others primarily require improving awareness and building capacity to deal with new practices.

Provision of climate-resilient goods can include products such as seeds that are more resilient to changing temperatures or rainfall patterns or equipment for monitoring and addressing vector-borne diseases. It can also include the delivery of services, such as the mechanical drying of agricultural goods. All the above directly impact the private financiers as well.

The earlier highlighted risks related to the physical impacts of climate change provide the basis for a business case for financial sector action on climate change. As climate change impacts the enterprises that financial sector actors invest in, their ability to repay loans (or produce a return for equity investors) diminishes. In essence, private financiers have an interest in understanding climate-related risks and ought to have an interest in supporting investments in adaptation and resilience to reduce their exposure.

Whereas climate risks may indicate an imperative to reduce exposure to many of the most climate-impacted areas, much of the impact on future assets will come through weaker growth and lower asset returns across the board²¹. This implies that investors may not be able to avoid climate-related risks by moving out of certain classes of assets. Clearer information on climate risks will therefore assist investors to engage with companies on the resilience of their strategies.

Many of the needs and priorities identified in the Government of Kenya's climate policies and plans are for products and services that could be provided most efficiently and sustainably through collaboration with the private sector.

19 UNFCCC 2005, 5 defines adaptation technology as “the application of technology to reduce the vulnerability, or enhance the resilience, of a natural or human system to the [impact] of climate change”

20 Clements, R., J. Hagggar, A. Quezada, and J. Torres, 2011. Technologies for Climate Change Adaptation – Agriculture Sector. X. Zhu (Ed.). UNEP Risø Centre, Roskilde, 2011

21 GEF & IFC, 2012. Private Sector Engagement in Climate Change Adaptation

05 | Investment Opportunities for Private Sector in Climate Change Adaptation

Ensuring that the private sector understands the emerging opportunities presented by climate change— and not just the costs—will be a crucial communications objective of the government and partners²². Private sector engagement studies point to both the risks of climate change for the sector and the importance and feasibility of adaptive measures to increase climate resilience²³. This section highlights some of the opportunities available to the sector in the context of a changing climate.

Some of the largest areas for private sector activity and investments correspond with development sectors, for instance, infrastructure, agriculture, water resources management, energy, and coastal zone management – these are the most vulnerable to climate change. In Kenya, agriculture and small farms typically constitute a large share of employment and GDP- Agriculture directly contributes 34% to the GDP and adds another 27% through linkages to other sectors such as manufacturing, distribution, and services, about 75% of industrial raw materials and 60% of the export earnings²⁴.

Climate change adaptation in these sectors is intricately linked to the resilience of private enterprises. In addition, identifying climate risks may create business opportunities that arise in connection with adaptation interventions.

Successful private sector engagement in adaptation will catalyse greater and more frequent investments, which could accelerate the replication of climate-resilient technologies and approaches in core development sectors.

Examples, of where private sector investments could contribute to climate change adaptation in Kenya, are highlighted below.

1. In agriculture, investment in more efficient irrigation can improve productivity, reduce vulnerability to drought, strengthen adaptation to flooding and reduce water use and water waste. Biotechnology may contribute towards the development of climate-resilient seeds, and protect livestock from the impact of climate change among other technologies that can help farmers adapt to climate change. Private enterprises could take a greater interest in ensuring the sustainability and climate resilience of agricultural supply chains as part of a larger integrated adaptation approach.
2. Private enterprises own and operate many power-generating plants and other large infrastructure facilities. These long-lived assets are among the investments most at risk from changes in rainfall patterns and intensity, sea level rise, and extreme weather events. To respond, the private sector could invest in adaptation in the coastal resources sector to minimise loss and damage to coastal infrastructure, resources, ecosystems, and livelihoods.

²² Crawford & Church, 2019

²³ GEF & IFC, 2012. Private Sector Engagement in Climate Change Adaptation

²⁴ KNBS, 2020. Kenya Economic Survey

3. The availability of low-cost, high-quality mobile phone services and remotely communicated weather information is one area where the private sector can invest and make it possible to provide earlier warnings of droughts, storms, and extreme weather events. This is possible due to the large investments and transfer of technology required and which telecommunications firms have done across the country even in arid and semi-arid lands (ASALs).
4. In Kenya ASALs occupy approximately 84% of the country. This implies that adequate water supply is a major challenge for the country and thereby negatively impacts agricultural activities. Intergovernmental Panel on Climate Change (IPCC) notes that although it is uncertain how precipitation patterns will change, particularly at the local scale, climate change is happening on top of non-climate drivers of water scarcity, including population growth, increasing per-capita domestic use of water, expansion of irrigated agriculture, industrial growth, and ineffective water resource management²⁵. Most regions are projected to experience more extreme dry and wet conditions, forcing the country to cope with floods and droughts. Both extremes can result in water stress. The private sector can play a role in the water resources sector, adaptation efforts could address problems of reduced supply, flooding, waste, and reduced water quality. Investments would be in technology applications such as the construction and rehabilitation of water resource infrastructure or the adoption of water-efficient technologies and practices in industries and agriculture.
5. The trends in land use, population growth and density, and resource depletion have implications on human health. Interaction with climate change impact could magnify these effects. The potential adverse impact of climate change includes direct effects such as deaths and injuries resulting from extreme events for example floods, changes in the geographic range and seasonality of climate-related health risks such as decreased water security and safety and declining air quality, and the increased incidence of water-borne and vector-borne diseases. This would lead to reduced productivity in labour-intensive smallholder agriculture and other outside labour activities, and reduced crop yields, which may result in malnutrition. The sector can contribute to adaptation technologies to alleviate the effects of climate change on human health through efforts such as advanced information technology in the health sector and protect drinking water supplies from contamination.

Besides climate-proofing of private sector investments which is important, there are also emerging business opportunities in helping communities to reduce their climate risks such as the provision of financial resources for adaptation through investments, financial risk management, and the charitable provision of resources through foundations or corporate social responsibility. The private sector could also play a role in awareness raising and information building through research and dissemination and hence the need for their engagement in adaptation

One of the priorities identified in the climate change adaptation debate is the development of weather and climate networks for real-time observation, local-level forecasting, and the dissemination of information through early warning systems. At a time when climate change is threatening the most vulnerable, this infrastructure is essential in helping the country anticipate and communicate early warnings for severe weather events (such as floods, drought, locust

²⁵ IPCC 2014

invasion and sea level rise), improve food security and agricultural production, and better manage scarce water resources. The private sector like other sectors is impacted by climate variability and continues to experience the negative effects of droughts and flood risks arising from unreliable weather information. Investment in early warning systems by the private sector in Kenya is long overdue.

A viable opportunity for private sector involvement includes the deployment of a network of automated surface weather and climate observation points, which can be used to provide the critical weather information necessary for early warning of severe weather. Climate observation and forecasting, when combined with tailored applications for sectors such as manufacturing, tourism, agriculture and the public, could be useful at the national and county levels to enhance agricultural production, water resource management, and generation of renewable energy.

In addition to the deployment of systems to collect climate information, there is significant potential for using the existing and rapidly growing mobile phone market for real-time communication during extreme events. Such investments can be done within a PPP to ensure that weather and climate networks are maintained with the highest degree of reliability for the public and institutional end-users while reducing the total cost for the country.

The private sector's contribution to technology transfer is essential. However, the focus has been disproportionately focused on mitigation technologies, which are more mature and have more established markets. The private sector in Kenya should take lead on adaptation technologies in the agriculture sector, manufacturing, coastal systems, and early warning technologies to determine climatic variables more accurately. The mobile phone is an example of technology with the potential for private sector-led investments that can provide better services at lower costs to many sectors in the country. The mobile phone market has partly been used in the country to source agricultural inputs and markets for farmers. The sector could also introduce other adaptation technologies to address climate change's impact on coastal resources, human health, transportation, water resources, energy, and disaster risk management.

Penetration of climate-related insurance and micro-insurance products targeting agriculture such as crop and livestock for smallholder farmers, and pastoralists and weather and disaster coverage is still limited yet insurance could provide significant adaptation benefits. Insurance and reinsurance firms may have opportunities to offer new products to address newly recognized risks, such as weather-indexed insurance as well as insurance guarantee mechanisms to small-scale producers and MSMEs to cover risks of climate change. There are also opportunities for the sector to invest in insurance for catastrophic climatic events, research, and development (especially in agriculture) and health spending

Innovative public-private partnerships, as well as more cost-effective hydro-meteorological monitoring, are making insurance products more accessible for the most vulnerable people in Asia and Europe which the private sector in Kenya can benchmark on. However private sector interests are sensitive to policy impacts on nascent markets and roll-out should be gradual with room to adjust future product design in response to policy signals.

06 | Sources of Financing for Climate Change Adaptation

Adaptation can reduce the economic costs of climate change, but it has a cost. The relevance of the private sector in adaptation financing has been documented and discussed in many forums globally and locally, in the context of UNFCCC strategies and by the government of Kenya in the various climate change policy documents. Kenya has already indicated the priority sector sectors that the country will focus on in addressing climate change, for instance, food and nutrition, security, water and blue economy, housing, health and sanitation, manufacturing, transport, energy, wildlife, forestry and tourism, and disaster risk reduction. The national plans of action provide guidelines and indicate that the opportunities for the involvement of the private sector should be sought to ensure the successful implementation of the national adaptation programme of action priorities

The source of finance for climate adaptation could be public or private finance and from local or international entities. Private finance sources include loans from commercial financial institutions, project developers, corporates, and other commercial and institutional establishments. Locally the public sector provides financing for adaptation through partnerships with the private sector in form of PPPs. PPPs are especially the go-to- investment vehicles for capital-intensive projects such as infrastructure and renewable energy projects.

Recent data from National Treasury budget allocations and sources of revenue indicate that investment in climate-related projects from the private sector represents about KES 100 billion (USD100 million) per year of which 35% is contributed by Kenyan firms and 65% by foreign private firms. Most of the finance from foreign private firms is directed to investments in renewable energy. However, climate financing and/or investment information from the private sector is not comprehensive because most data included in the above numbers are for publicly listed firms only that publish integrated financial statements. Many private sector firms especially MSMEs do not publicly publish their financial statements leading to scanty climate financing and investment data.

Private sector financing of adaptation actions is driven by the need to identify additional sources of funds to complement and enhance the effectiveness of government and development partners' funding²⁶. The opportunity for engaging large sources of private investment to address climate change goals is discussed in several international reviews of climate funding including the report of the UN High-Level Advisory Group on Climate Finance and a multi-agency review prepared by the G-20 and led by the World Bank. These reports point to the potential benefits of engaging even exceedingly small amounts of investments from pension funds and other large asset managers, which collectively manage trillions of dollars.

The AGF report concludes that the private sector will play an important role in financing climate change investment and enabling green growth. For this to be achieved there is a need for greater use of multilateral and regional development banks to promote private sector investment in climate finance.

The report notes that capital from Multilateral Development Banks (MDBs) can be spent in a way that leverages further private sector investment by co-investing with the private sector, by

26 GEF & IFC, 2012. Private Sector Engagement in Climate Change Adaptation

offering risk mitigation instruments to private investors, or by piloting and scaling-up innovative offset schemes in the carbon market. The report notes that combining public and private capital could achieve ‘truly transformational investments.’

In Kenya there is a need to initiate policies that the developed world could support financially, to increase private sector low-carbon investment in the country. This could include measures to improve the investor climate like now through the NAP by engaging with those parts of the private sector whose interests align most naturally with the climate resilient opportunities in the country such as agribusinesses, forest management and energy producers, and local and regional investors who focus on these sectors.

International financial institutions provide funding for capital-intensive projects such as infrastructure, and renewable energy with large ticket sizes and channel their funding through governments and commercial banks. In some cases, they also invest directly in huge climate projects that require large capital outlays for example the recently completed Turkana wind power project, one of the largest private investments in Kenya funded by a consortium of investors (KP&P BV Africa, Aldwych International Limited, Norfund, Investment Fund for Developing Countries (IFU) of Denmark, FinnFund and other equity investors).

Corporates and SMEs can also access funding from international finance institutions indirectly through local commercial banks or investment funds with funding from the DFIs. An example is the recent green funding of USD 150 million from the International Finance Corporation (IFC) channelled through KCB for onward lending to climate change projects by SMEs and Corporates. Other DFIs like AFD (French Development Agency) have been channelling funds through Co-operative and Diamond Trust banks for on-lending to renewable and energy efficiency projects.

Development finance provided as Official Development Assistance (ODA) loans and grants is a critical source of finance for Kenya. Public development finance institutions and multinational development banks also play a great role in not only supporting climate adaptation investments but also in the development of climate-related financial products. While much of this funding is long-term debt, short-term debt, and foreign direct investment (FDI) from financial institutions is increasingly seeking to leverage private investment through local and international banks and with private equity investors.

Another source of finance for adaptation is the Green Climate Fund (GCF). GCF invests in adaptation and mitigation projects through its partner organisations – accredited entities. The fund engages directly with the private sector through its Private Sector Facility (PSF). The fund can bear significant climate-related risk, allowing it to leverage and crowd in additional financing. It offers a wide range of financial products including grants, concessional loans, subordinated debt, equity, and guarantees. This enables it to match project needs and adapt to specific investment contexts, including using its funding to overcome market barriers for private finance²⁷.

27 <https://www.greenclimate.fund/>

Kenya Commercial Bank (KCB) is the accredited²⁸ private sector entity in Kenya under the medium to large private sector category and the first financial intermediary for the implementation of climate financing in East Africa. The bank can receive funds from the Fund for on-lending to beneficiary institutions involved in the development of climate-resilient investment assets and/or projects in Kenya and the region. The bank can front projects of between USD 50 Million (KES 5 billion) and USD 250 Million (KES 25 billion).

Regionally private sector entities can also source climate adaptation funding from African Development Bank (AfDB), The Africa Finance Corporation (AFC), IFC and various UN bodies that are accredited²⁹ by GCF such as FAO, UNEP, IFAD, UNDP, UNIDO as well as international organisations that operate in Kenya. The National Environment Management Authority (NEMA) is also a GCF-accredited entity with vast experience in climate change adaptation and mitigation and co-implementing projects ranging from USD 10 million to USD 255 million with local and international organizations.

28 <https://ke.kcbgroup.com/about-us/news-room/business/kcb-receives-gcf-accreditation-to-fund-green-projects>

29 <https://www.greenclimate.fund/about/partners/ae>

Annexes

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