

# **The National Treasury and Planning**

## **Climate Change Indicator Development Guidebook**

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## FOREWORD

Kenya in the last two decades has increasingly continued to experience effects of climate change. The country's high dependence on climate sensitive natural resources for livelihoods and economic sustenance has increased vulnerability of communities. Climate change is not only a threat to the achievement of sustainable development, but also has the potential to reverse the gains achieved towards attaining vision 2030 and implementation of the Big Four Agenda.

Mainstreaming of climate change into development plans puts the country in a better position to address climate change effects in the short, medium and long-term. Kenya has developed the second National Climate Change Action Plan 2018-2022 (NCCAP) that provides priority actions to achieve low carbon climate resilient development. These actions have also been incorporated in the third Medium Term Plan 2018-2022 (MTP III) and second-Generation County Integrated Development Plans (CIDPs). Implementation of these plans will require tracking using appropriate indicators to measure progress and achievements.

The government has embarked on the review and development of the Monitoring and Evaluation framework for the climate change interventions in the various plans. Climate change indicators are a critical component of this framework and will significantly assist the county to assess the Country's progress in implementing both Mitigation and adaptation measures and their contributions to addressing climate change.

It is on this premise that the Government of Kenya has recognized the importance of developing a guidebook for climate change indicators to track climate change interventions. The guidebook provides generic steps for developing indicators as well as a sample of climate change indicators for the various thematic areas. It is envisaged that indicators developed using this Guidebook will enhance timely tracking and reporting of climate change actions both at the national and county level.

## Acknowledgement

The preparation of the Climate Change Indicator Development Guidebook is part of the Kenya Devolution Support Programme, funded by the UKaid's DFID, on **Mainstreaming Climate Resilient Planning, Budgeting and M&E at National and County Levels**. The project is being implemented jointly by UNDP, The State Department for Planning through the Monitoring and Evaluation Department (MED) and Ministry of Environment and Forestry through the Climate Change Directorate.

The Guidebook preparation process was led by the technical officers from The Ministry of Environment and Forestry, The State Department for Planning and UNDP. Several stakeholders drawn from both the national and county level also participated in the consultations and review.

I recognize the important role played by the Director Monitoring and Evaluation, Dr Samson Machuka, in leading the technical team that prepared this guidebook. The team comprised David Kiboi, Lucy Gaithi, Margaret Githinji, Aloyce Ratemo, Elizabeth Wamalwa, Mary Karumba (all from State Department for Planning) David Adegü (Ministry of Environment and Forestry), Ruth Moraa (GIZ), Geoffrey Omedo & Bernard Kimutai (UNDP).

On behalf of the Government of Kenya, I acknowledge and express special thanks to UNDP for the technical and financial support provided towards preparation and publication of the guidebook



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## Abbreviations

CCD-Climate Change Directorate

CIDP - County Integrated Development Plan

CIMES - County Integrated Monitoring and Evaluation System

IPCC - Intergovernmental Panel on Climate Change

MED - Monitoring and Evaluation Department

MTP - Medium Term Plan

M&E-Monitoring and Evaluation

NIMES - National Integrated Monitoring and Evaluation System

NCCAP- National Climate Change Action Plan

NDC-Nationally Determined Contribution

UNDP- United Nations Development Programme

UNFCCC-United Nations Framework Convention on Climate Change

## Definition of Terms

**Climate Change:** A change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods

**Climate variability** refers to variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all spatial and temporal scales beyond that of individual weather events

**Climate Change Adaptation** An adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects that moderate, harm or exploit beneficial opportunities.

**Climate change vulnerability** is the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, its sensitivity, and its adaptive capacity

**Climate change mitigation**: An human-driven intervention to reduce the sources or enhance the sinks of greenhouse gases

**Climate change resilience:** The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous climate change –driven event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions

**Monitoring:** Is the continuous process of checking, observing and keeping track over the extent to which implementation of a programme/ project/ activity, work schedules and targeted outputs are proceeding according to plan, so that timely action can be taken to correct deficiencies detected.

**Evaluation:** It is the process of assessing the relevance, effectiveness, efficiency, impact and sustainability of a Programme or project.

**Outcome:** Is the actual change in conditions/situation as a result of an intervention output(s) such as changed practices as a result of a programme or project.

**Output:** Immediate result from conducting an activity

**Impact:** Are the ultimate long term changes as a result of the implementation of programmes or projects interventions -the difference, positive and/ or negative, the implementation of a programme/project intervention has brought.

**Results:** are the outputs, outcomes, or impacts, intended or unintended,

positive or negative of development interventions

**Targets:** Is the set level of expected achievement at a specified point in time

**Baseline:** Is the initial status prior to the intervention of the programme or project.



## Section 1: Introduction

This document is a climate change indicator guidebook that aims to guide public and private entities at national and county level to develop indicators for tracking climate change actions. The Climate Change Act 2016 obligates the national and county governments to mainstream climate change actions across all sectors of the economy. Section 9 of the Act provides for the measurement, reporting and verification of low carbon development strategies by the climate change Directorate in collaboration with other agencies at the national and county government levels. The Act also requires Public and Private Entities to regularly report on climate change actions.

The guide book provides a step-by-step guide to help users in developing, selecting and applying a common set of climate change indicators to measure, evaluate and report on the progress and outcomes of various interventions. In addition, it's intended as a generic tool with no prescriptive character, the handbook proposes analytical frameworks and indicators that form the basis for the customized design of sets of indicators. The target audience is wide, and includes managers, decision makers, practitioners, evaluators, researchers and development partners

The guidebook has three sections: Introduction which covers the background of Climate change globally and locally; Monitoring and Evaluation of climate change and Rationale of the guidebook. Section 2 covers development of climate change indicators and section three provides a sample of climate change indicators.

### 1.1. Background

Extreme weather and climate events attributed to climate change have been observed globally since the 1950s. The climate change effects include: heat waves, droughts, floods, cyclones and wildfires, sea level rise, melting of glaciers and snow, among others. Climate change is a serious global challenge that demands a global solution. The international response to climate change is founded upon the **United Nations Framework Convention on Climate Change (UNFCCC)** that entered into force in 1994. Kenya, being an active player in international efforts to combat the effects of climate change, signed the UNFCCC on 12<sup>th</sup> June 1992 and ratified the Convention on 30<sup>th</sup> August 1994.

Parties to the UNFCCC meet annually in a decision-making body called

the Convention of Parties (COP) to review the implementation of the Convention. The Paris Agreement is an outcome of the 21<sup>st</sup> session of the COP. It aims to strengthen the global response to the threat of Climate Change in the context of sustainable development and its efforts to eradicate poverty. Kenya ratified the **Paris Agreement** on 26th December 2016 and this binds Kenya to the implementation of the **Agreement** as provided in the Kenyan constitution. The Paris Agreement is domesticated in Kenya through the Nationally Determined Contribution (NDC) that sets out the country's actions towards achieving the global goal as set out in the **Paris Agreement**.

## 1.2 Overview of climate change in Kenya

There is a complex and variable climate in Kenya, ranging from warm and humid in the coastal regions to arid and semi-arid in the interior of the country. The central and western highlands have a temperate climate with medium to high rainfall and are the productive zones with high to medium agricultural potential (about 18% of Kenya's land area). The Low lands have unevenly distributed rainfall. Twenty-three of Kenya's 47 Counties are considered as arid or semi-arid lands (ASALs). The arid areas are predominantly pastoral; while the semi-arid areas are mainly agro-pastoral with integrated crop/livestock production systems.

However, Kenya's climate has been changing. For instance, temperatures have increased by 0.5-2 degrees Celsius over the past 100 years. The frequency of cold days, cold nights and frost has decreased while that of hot days and hot nights as well heat waves have increased. Rainfall patterns have also changed with the long rains season becoming shorter and drier, while the short rain season has become longer and wetter. Overall annual rainfall has reduced. The frequency of flood has increased from an average of three or less events per year during the 1980s, to over seven events per year in the 1990s and 2000s.

Subsequently, Kenya has had its share of climate-related impacts in recent years. These include but are not limited to: prolonged droughts; frost in some of the productive agricultural areas; hailstorms; extreme flooding; receding lake levels; drying of rivers; sea-level rise, and depletion of glaciers on Mount Kenya. These impacts have led to large economic losses: loss of lives, diminished livelihoods, reduced crop and livestock production, and damaged infrastructure, among others. They have also led to displacement

of communities and migration of pastoralists into and out of the country, resulting in conflicts over transboundary natural resources; competition over scarce resources resulting in human-wildlife conflicts and widespread disease epidemics. Drought and flooding crises not only demonstrate how vulnerable Kenya is to climate change, but also present an opportunity for the country to develop appropriate response strategies and activities towards making communities safer and resilient.

Kenya's economy is dependent on climate-sensitive sectors such as agriculture, water, energy, tourism, wildlife and health. Given that Kenya is a lower middle-income economy, its ability to shield these sectors is limited leading to increased vulnerability to climate change impacts.

Thus, climate change is likely to negatively impact Kenya's future development and achievement of the goals of Kenya Vision 2030 – the long-term development blueprint – and the Government's Big Four agenda for 2018-2022 which focuses on ensuring food and nutrition security, affordable and decent housing, increased manufacturing and universal healthcare. Mainstreaming of climate change into development plans puts the country in a better position to address these effects of climate change in the short, medium and long-term.

### **1.2.1 Response to Climate Change in Kenya**

Kenya has demonstrated commitment to addressing climate change issues through the enactment of the Climate Change Act 2016. The Act provides a regulatory framework for an enhanced response to climate change. It obligates the national and county governments to mainstream climate change measures across all sectors of the economy. Further, climate change has also been integrated in the MTP III and CIDP II.

Kenya has also developed the second NCCAP 2018-2022 that provides priority actions to achieve low carbon climate resilient development. This plan builds on the first Action Plan (2013-2017) and provides a framework for Kenya to deliver on its Nationally Determined Contribution (NDC) under the Paris Agreement. NCCAP 2018-2022 guides the climate change actions at the National and County Governments, the private sector, civil society and other actors.

The government and other stakeholders have been implementing many interventions that have direct or indirect relevance to climate change

adaptation and mitigation. The interventions cover a wide range of sectors including agriculture, water, energy, infrastructure among others. However, assessing the progress and results of these interventions has been a challenge partly due to inadequate capacity to identify climate change actions and their appropriate indicators.

It is from this background that the government of Kenya has acknowledged these challenges and prioritized the development of a guidebook for climate change indicators to track climate change interventions. Monitoring and evaluation (M&E) of climate change actions is necessary to demonstrate the benefits being realized from such interventions and that lessons learnt assist in the improvement of sector climate change plans and programmes.

### **1.3. Monitoring and Evaluation of Climate Change in Kenya**

The State Department for Planning coordinates the implementation of a National Integrated Monitoring and Evaluation System (NIMES). The NIMES' institutional framework comprises of Ministries, Departments and Agencies (MDAs) while at the County level there is the County Integrated Monitoring and Evaluation System (CIMES). Under NIMES, the State Department of Planning has developed the national indicator handbook for MTP implementation and a CIDP indicator Handbook for the counties. Though these handbooks feature some climate change related indicators; they are not adequate to track climate change actions. In addition, there are no guidelines on how to develop such indicators. Therefore, the climate change indicator guidebook would be useful to practitioners at all levels.

### **1.4 Rationale/Statement of the Problem**

The Climate Change Act provides for the coordination of Measurement, Reporting and Verification processes by the Climate Change Directorate. The Act requires public and private entities to regularly report on climate change actions. Further, the Cabinet Secretary in charge of climate change is expected under the Act to report to parliament on the status of implementation of international and national obligations to respond to climate change, biannually.

Implementation of MTPIII, NCCAP 2018-2022, and the second generation CIDPs climate change actions need to be tracked using smart indicators. Justifying resource allocation to implement climate change mitigation and adaptation measures particularly at the county level, demands that there be related indicators to signal attainment of the intended goals. Development of these indicators requires certain level of skills and understanding which

is currently inadequate. Additionally, climate change mainstreaming and monitoring has scientific, institutional, socio-economic and financial implications that may lead to subjectivity in identifying correct indicators. Hence there is need to provide a guide on how to develop indicators to track climate change actions.

This guidebook provides generic steps for developing indicators as well as a sample of climate change indicators for the various thematic areas. It is envisaged that indicators developed using this Guidebook will enhance the tracking of climate change actions towards achievement of the Country's Low Carbon climate resilient Development Pathway.

## Section 2: Developing Climate Change Indicators

This chapter presents an overview of indicators, types of indicators and the indicator development process. Indicators are a key element of an M&E framework as they provide a basis for tracking progress and results. In this guidebook, indicators and performance indicators are used interchangeably to mean the same thing.

### 2.1 Climate Change Indicators

An indicator or performance indicator is a measurable variable that allows for the assessment of progress made and the level of achievement of results. It is a sign of progress /changes that result from the implementation of a project. Establishing practical indicators for climate change projects is complicated due to the mid to long-term period of both mitigation and adaptation projects/ programmes as well as the uncertainty related with the impacts which could only be obtained at an undefined distant future. These actions may also not be aimed at direct mitigation or adaptation to specific climate change issues but may contribute to future actions that achieve the ultimate objectives of mitigation and adaptation. While mitigation projects' performance may be measured in a common unit in tonnes of carbon dioxide equivalent (CO<sub>2</sub>eq) , adaptation projects lack a standard metric for measurement, which makes tracking and aggregating results across different sectors and localities quite challenging. Therefore, in order to effectively identify indicators related to climate change actions, practitioners need to clearly identify climate change projects based on their anticipated impact. Climate change mitigation and adaptation projects and programmes require a clear established baseline in order to effectively to set targets and track progress.

There are three types of climate change projects. The first type consists of direct projects. These projects are designed explicitly to mitigate greenhouse gas emissions, to adapt to existing and/or anticipated changes in climate, or to take the steps necessary to meet those objectives. Climate change direct projects may include establishing a climate risk or early warning information system, a project that mitigates greenhouse gases (GHGs), or setting up the institutional structures and mechanisms to enhance effective response to climate change. In this case, indicators should be included that either show direct impact on adaptation or mitigation, or progress towards reaching those goals.

The second type of climate change projects are those with multiple benefits.

These include those that have a broader development agenda but have clear mitigation or adaptation components in addition to the broader agenda. For example, an electricity generation and distribution system reform could be designed to promote energy efficiency thus reducing costs as well as contributing to overall emissions reduction. An agricultural project may promote crop and land management practices that reduce long-term vulnerability to climate change, but also improve short-term profitability. Although not the sole focus of the project, in these cases there are actions that clearly link to climate change and that provide additionality. In this case, the monitoring and evaluation system should include indicators explicitly measuring these benefits.

The final type of projects comprises those in which benefits for mitigation or adaptation to climate change are incidental. These projects include many general development projects as well as specific ones, particularly in the areas of agriculture, energy, transport, tourism, etc. While such projects may have incidental climate change benefits, to the extent that they would have been undertaken without any change whatsoever in design, evaluation or implementation, they would not provide additionality. In general, if no climate change-specific outputs or outcomes are identified outside of general development, then clearly one cannot identify corresponding indicators.

The broad spectrum of projects from the pure climate change-focused projects to those with only incidental indirect effects necessitates for skills in identifying appropriate indicators.

## 2.2 Importance of Indicators

Indicators play a critical role within monitoring and evaluation systems.

- Indicators offer the benefit of comparability - compare climate change trends between counties, regions and countries as well as in the same location across time.
- Indicators offer simplicity as they provide easily accessible concise information and gives attention to key issues such as climate change or gender inequality
- Indicators are strong advocacy tools as they point to areas where climate change intervention is needed or where the interventions are not having desired effects.

- Indicators are powerful tools for monitoring and evaluating climate change project outcomes and impacts, making sure the project ‘stay on track’
- Indicators determine the data to be collect in order to measure progress and compare obtained and planned results.
- Climate change indicators provide guidance on the implementation of climate change response actions (adaptation, mitigation and support actions), whether in the form of policies, projects, programmes or business ventures. Support actions involve climate change measures towards capacity building, technology and climate finance.
- Climate change indicators help fulfil Kenya’s international reporting obligations of reporting on the climate change achievements to the United Nations Framework Convention on Climate Change (UNFCCC), through National Communications (NCs) and Biennial Update Reports (BURs).
- Indicators help in demonstrating the country’s climate finance readiness and provide a strong platform for attracting international climate finance flows from multilateral and bilateral development partners.

## 2.3 Types of Indicators

Indicators are broadly categorized into qualitative and quantitative. Qualitative indicators are descriptive and reveal more about the effect of the result. They are often helpful in determining what is working and what can be improved e.g. Level of empowerment, poverty level. Quantitative indicator is a measure expressed in numerical terms; the unit of measurement will vary according to the context e.g. money, time, percentage

Performance Indicators correspond to three levels of results: output, outcome and impact. Output indicators measure the immediate results from implementing a project activity. Outcome indicator measures the intermediate results. It describes the actual change in conditions or practices as a result of a programme or project outputs as seen in table 2.1. An Impact indicator measures long term effects/changes produced directly or indirectly, intended or unintended, positive or negative. An Index is composed of a set of related variables. An example is the climate change index which gives an annual view of the trend of climate change globally. It combines several

key climate change parameters on atmospheric carbon dioxide, sea-level, temperatures and sea ice.

In certain situations data for direct indicators may not be available; not feasible in terms of the time it takes to collect or the cost is too high; the issue to be monitored is too complex or abstract and data is very sensitive. In such cases indirect measures (proxy indicators) are used e.g. Household income is a proxy indicator used to measure resilience on climate change which is an abstract/complex issue.

Table 2.1 Presents examples of indicators at different levels of results

**Table 2.1: Examples of Indicators**

<b>Agriculture Sector</b>		
<b>Programme Name: Irrigation</b>		
<b>Objective:</b> To increase food production		
	<b>Results</b>	<b>Indicator</b>
<b>Outcome</b>	Increased food production	Tonnage of produce e.g. maize, beans , wheat, rice etc.
<b>Outputs</b>	new area put under irrigation	Hectares of new area put under irrigation
	dams constructed/de-silted for irrigation	Number of dams constructed/de-silted for irrigation
	irrigation equipment supplied	Number of irrigation equipment supplied
	irrigation groups supported/trained	Number of irrigation groups supported/ trained

## 2.4 Indicator Development Process

Indicators should be developed in a consultative process during the planning phase of the project/programme. Setting indicators with key stakeholders has several advantages which include;

- It results in more realistic, meaningful and achievable indicators.
- It highlights the different information needs and ideas of change (why and how) of different stakeholders and groups (e.g. youth, Persons with

Disabilities, women, men etc.).

- It helps to increase stakeholder ownership of projects, awareness, mutual learning and empowerment.

The following section presents the steps in developing key indicators. These are;

### **Step 1: Identify what to measure**

Identify the programme or project results you want to measure. This includes outputs, outcomes and impacts. Table 2.1 gives a sample of results.

### **Step 2: Identify possible measures of the results**

Identify all possible measure of the result. Let every stakeholder provide measures from their perspective and information need.

### **Step 3: Assess each possible indicator for its appropriateness and against the criteria (SMART)**

Assess and select the indicators that meet the SMART criteria explained below:

***Specific:*** The indicator should accurately describe what is intended to be measured and should not include multiple measurements.

***Measurable:*** The indicator has the capacity to be counted, observed, analysed, tested or challenged. It quantifies change and is generally reported in numerical terms such as counts, percentages etc.

***Attributable:*** The change measured by the indicator is contributed to by the intervention.

***Relevant / Realistic:*** The indicator should capture the essence of the desired result. An indicator is relevant to the extent that it captures or measures a facet of the results that it is intended to measure.

***Time-bound:*** The indicator is attached to a time frame and should state when it will be measured.

### ***Other considerations when selecting indicators;***

The selected Indicators should further be assessed against;

- Ease of data collection and analysis i.e. Availability, Sources , cost, Methods, time, Equipment and expertise needed
- Reliability or Consistency is the ability to measure the results over time. Values stay constant as long as they are collected in identical conditions, no matter who does the collecting. They should consistently produce the same result if it is applied repeatedly to a situation that has not changed.

### **POINTS TO NOTE:**

- Indicators should reflect appropriate level of disaggregation to capture differences e.g.by gender, age, regional area, ethnic groups and other categories
- In the event that data for the selected indicators is not easily available; not feasible in terms of the time it takes to collect or the cost is too high; the issue to be monitored is too complex or abstract and data is very sensitive then consider using proxy indicators.
- Allow international comparison-indicators need to reflect Kenya’s specific goals, but where possible should also be consistent with those used in international indicator programmes so that comparisons can be made.
- Compel interest and excite - the indicator should resonate with the intended audience.

### **Step 4: Select the ‘best’ indicators**

In consultation with stakeholder, agree on the final set of indicators. Keep the indicators at a reasonable and manageable number. It is best to maintain a small number of meaningful, useful and adequate indicators to track progress. Also note that though each output has one indicator, outcomes and impacts may have more than one but ideally not more than three.

### **Step 5: Establish Baselines and Targets**

For selected indicators, define the baseline and targets. Where the baseline is not available and the indicator is the best choice agreed upon, a survey should be conducted to establish the baseline.

## 2.5 Emerging Developmental issues

Emerging issues in development that include gender and Human Rights have now become critical areas of interest in achieving developmental milestones. Subsequently, there is need to define indicators to track progress in implementation of related interventions.

There are important gender perspectives in all aspects of climate change. Women in developing countries are highly dependent on local natural resources for their livelihood and are disproportionately vulnerable to and affected by climate change. Thus, climate change indicators should be sensitive to gender issues. Gender Monitoring indicators measure gender related changes over time e.g., status, roles, access and control. They comprise of gender sensitive and gender specific indicators. Gender-sensitive indicators compare the situation of women to that of men or data disaggregated by gender while gender Specific indicators measure interventions specifically targeted at either gender.

Human Rights Indicators give specific information on the state of an event, activity or outcome. The focus includes monitoring changes in peoples' lives on issues of inequality, equity, exclusion and discrimination by measuring the extent to which vulnerable groups are reached by development interventions. In addition, Human rights indicators assess level of participation and empowerment through people's ability to claim their rights and influence decisions that affect them. Climate change interventions aims at improving the quality of life thereby addressing human rights issues. Therefore, climate change issues are largely human rights issues.

## ANNEX

\* The amount of greenhouse gas (GHG) emissions reduction in CO<sub>2</sub> equivalent is a mitigation co-benefit indicator for all thematic areas.

Thematic Area 1: Disaster Risk Management	
Outcomes	Indicators:
Climate resilience of the vulnerable members of society enhanced	Average household income(Kshs) Fatalities from climate related disasters(human and livestock) Proportion of the population accessing early warning information
Outputs	Social protection mechanisms established.
	The National Emergency Fund operationalized
	Early warning systems established
Outputs	Dykes, Dams and water pans constructed
	Number of Dykes, Dams and water pans constructed
Thematic Area 2: Food and Nutrition Security	
Outcome 1: Increased crop productivity	Number of bags per Ha ( e.g. for maize, rice, beans , potatoes, wheat)
Outputs	appropriate agriculture input subsidies issued
	Area under irrigation increased
Outcome2: Enhanced agricultural resilience	Acreage Under Irrigation Percentage of agricultural losses related to extreme climate events

<b>Outputs:</b>	climate-oriented insurance coverage increased	insurance	Number of farmers with crop and livestock insurance
	Water harvested for irrigation purposes	irrigation purposes	Amount of water harvested
	Sustainable land management practices	land management practices	Number of farmers adopting sustainable land management practices
<b>Outcome 3: Increase livestock productivity</b>			
<b>Outputs</b>	Rangeland Reseeded	Rangeland Reseeded	Average production per animal
	water harvested and stored	water harvested and stored	Hectares of rangeland reseeded
<b>Millions of cubic metres of water harvested and stored in ASALs</b>			
<b>Thematic Area 3: Water and the Blue Economy</b>			
<b>Outcome 1: Increased access to clean and safe water.</b>			
<b>Outputs</b>	Water infrastructure developed	Water infrastructure developed	Proportion of households with access to clean and safe water disaggregated by rural and urban
	Households connected to water supply systems	Households connected to water supply systems	Number of Dams, Water pans and boreholes constructed
<b>Percentage of households connected</b>			
<b>Outcome 2: Enhanced protection and conservation of coastal and marine biodiversity</b>			
<b>Outputs</b>	Restored and rehabilitated mangrove forests	Restored and rehabilitated mangrove forests	Percentage of marine area protected and conserved
	seawalls constructed	seawalls constructed	Acreege of mangrove forests restored and rehabilitated
	deep/offshore fishing fleet acquired	deep/offshore fishing fleet acquired	Number of Kilometres of seawall constructed
<b>Number of deep/offshore fishing fleet acquired</b>			
<b>Thematic Area 4: Forestry, Wildlife and Tourism</b>			
<b>Outcome 1: Increased forest cover</b>			
<b>Outputs</b>	Area of land afforested or reforested	Area of land afforested or reforested	Percentage Area under Forest cover
			Hectares of land afforested or reforested

<b>Outcome 2: Enhanced wildlife management</b>		Number of human-wildlife conflict incidences
<b>Outputs</b>		Number of wildlife climate related mortalities
dispersal areas and migratory pathways secured		Percentage of dispersal areas and migratory pathways secured
wildlife surveillance systems installed		Number of surveillance systems installed
<b>Thematic Area 5: Health</b>		
<b>Outcome: Reduced Incidences of climate change and pollution related diseases</b>		Incidences of water borne, vector-borne and respiratory diseases
<b>Outputs</b>		Number of mosquito nets/drugs /water filters distributed
Scaled-up community health interventions (distribution of mosquito nets, drugs, water filters etc.)		
Functioning waste management systems		Number of households connected to the sewer system
Green spaces created		Number of urban areas/counties with operational solid waste management systems
<b>Outcome 2: Increased health insurance coverage</b>		Number of green spaces created
<b>Outputs</b>		Percentage of the population with health insurance cover
Health sensitization forums conducted		Number of forums conducted
SACCOs health cover Linked to NHIF health cover		Number of SACCOs linked
<b>Thematic Area 6: Manufacturing</b>		
<b>Outcome: clean and efficient industrial production</b>		Number of industries adopting green and efficient production technologies
<b>Outputs</b>		Number of energy audits conducted
energy audits conducted		

	water efficiency audits conducted	Number of water efficiency audits
	Green production systems installed	Number of Green Production systems installed
<b>Thematic Area 7: Energy and Transport</b>		
<b>Outcome: Increased production of renewable energy</b>		
<b>Outputs</b>	Renewable energy plants installed	Number of renewable energy plants installed (disaggregated by type)
<b>Outcome 2: Increased use of clean energy solutions</b>		Proportion of households using alternative clean fuels (solar, wind, biogas etc.)
<b>Outputs</b>	Subsidised solar lanterns distributed	Number of subsidised solar lanterns distributed
	Improved biomass stoves(charcoal and wood) distributed	Number of Improved biomass stoves distributed
	Awareness forums on Improved biomass stoves conducted	Number of awareness forums on Improved biomass stoves conducted
<b>Outcome 3: safe and efficient public transport system</b>		
<b>Outputs</b>	Bus Rapid Transport (BRT) infrastructure Constructed	Average commuter time spent Road fatalities
	non-motorised transport infrastructure constructed	Kilometres of BRT constructed
	Standard Gauge Railway (SGR) extended	Kilometres of non-motorised transport infrastructure constructed
	Low carbon aviation and Maritime technologies installed	Kilometres of Standard Gauge Railway (SGR) extended
		Number of Low carbon aviation and maritime technologies installed