Covenant of Mayors
in Sub-Saharan Africa

NAKURU COUNTY
COUNTY OF UNLIMITED OPPORTUNITIES

SUSTAINABLE ENERGY ACCESS AND CLIMATE ACTION PLAN

Nakuru County, Kenya

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Nakuru County,
Kenya

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Abbreviations

AFOLU	Agriculture, Forestry and Other Land Use
BAU	Business as usual
BEI	Baseline Emissions Inventory
BOD	Biological oxygen demand
CDD	Community-driven development
CFA	Community Forest Association
CGN	County Government of Nakuru
CH_4	Methane
CHP	Combined Heat and Power
CIDP	County Integrated Development Plan
CIP	Climate Information Platform
CIRIS	City Inventory Reporting and Information System
CO2	Carbon dioxide
CO_2(b)	Biogenic CO_2
CO_2e	CO_2 equivalents
CoM SSA	Covenant of Mayors in Sub-Saharan Africa
CSA	Climate Smart Agriculture
CSAG	Climate Systems Analysis Group
DRE	Distributed renewable energy
DRM	Disaster Risk Management
EC	European Commission
EPRA	Energy and Petroleum Regulatory Authority
ETS	Emissions Trading Scheme
EU	European Union
GCF	Green Climate Fund
GCoM	Global Covenant of Mayors for Climate & Energy
GHG	Greenhouse gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPC	Global Protocol for Community-scale Greenhouse Gas Emission Inventories
GWP	Global Warming Potential
HHS	Household Survey
ICLEI Africa	ICLEI-Local Governments for Sustainability-Africa
IE	Included elsewhere
IPCC	Intergovernmental Panel on Climate Change
IPPU	Industrial Processes and Product Use
JRC	Joint Research Centre
KIHBS	Kenya Integrated Household Budget Survey
KMD	Kenya Meteorological Department
KNBS	Kenya National Bureau of Statistics
$ktCO_2$-eq	Kilotonnes (one thousand tonnes) of CO_2-equivalents
LED	Light-emitting diode
LPG	Liquified petroleum gas
LULUCF	Land Use, Land Use Change and Forestry
MTP	Medium Term Plan
MWh	Megawatt hours
N_2O	Nitrous oxide
NAP	National Adaptation Plan
NASWAMA	Nakuru Solid Waste Management Association
NAWASSCO	Nakuru Waste and Sanitation Services Company
NCCAP	National Climate Change Action Plan
NDC	Nationally Determined Contribution
NE	Not estimated
NMT	Non-motorised transport
NO	Not occurring
PV	Photovoltaic
RVA	Risk and Vulnerability Assessment
SCODE	Sustainable Community Development Services
SDGs	Sustainable Development Goals
SEACAP	Sustainable Energy Access and Climate Action Plan
tCO_2e	Metric tonnes of CO_2 equivalents
UCT	University of Cape Town
WRUAs	Water Resource User Associations

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Foreword from the Governor of Nakuru County

Governor, County Government of Nakuru, Kenya

HE Hon. Lee Kinyanjui

It is my pleasure to sign off on Nakuru County's Sustainable Energy Access and Climate Action Plan (SEACAP). This goes to reinforce the numerous strides being made by the County Government of Nakuru in reducing the emission of greenhouse gases, adapting to the current and future impacts of climate change, while improving access to clean, sustainable and affordable energy. It also contributes to meeting the national targets stated in Kenya's Nationally Determined Contributions (NDCs) and other strategic plans of the country. Through the development of the SEACAP, Nakuru has once more shown its position as a leading county in Kenya in addressing the impacts of climate change.

I acknowledge the support from the national government, especially from the Climate Change Directorate; the Ministry of Energy; Ministry of Devolution; the Council of Governors; Kenya National Bureau of Statistics; Kenya Power and Lighting Company; amongst others. My profound appreciation also goes to all departments and stakeholders who have participated in one way or another, especially the Nakuru County Department of Water, Environment, Energy and Natural Resources, which has shown so much dedication and has played a leading role in this process.

The Nakuru County SEACAP will reinforce existing plans, policies and strategy documents both at national and subnational levels. Some of these documents at the county level include the Nakuru County Climate Change Act, 2021; the Nakuru Climate Change Fund Regulations; Nakuru Climate Change Action Plan, 2018–2022; Nakuru County Climate Change Policy; Nakuru County Water and Sanitation Act, 2021; Nakuru County Waste Management Act, 2021; and the Nakuru County Waste Management Policy; as well as ongoing climate actions such as the rehabilitation, greening and beautification of county recreational parks, solid waste disposal sites, tree-growing programmes, establishment of new green parks, and climate-smart agriculture, among others within the county.

It goes without saying that climate action planning can only be effectively tackled through a bottom-up approach, and that the national government cannot do it on its own. The climate crisis also demands a unified approach from national government, county government, development partners and private sector actors. The processes must be inclusive and participatory to ensure all voices are heard, especially those of the vulnerable groups in our communities.

99

... THIS GOES TO REINFORCE THE NUMEROUS STRIDES BEING MADE BY THE COUNTY GOVERNMENT OF NAKURU IN REDUCING THE EMISSION OF GREENHOUSE GASES, ADAPTING TO THE CURRENT AND FUTURE IMPACTS OF CLIMATE CHANGE, WHILE IMPROVING ACCESS TO CLEAN, SUSTAINABLE AND AFFORDABLE ENERGY ...

The development of Nakuru County's SEACAP has been a great achievement, thanks to a collaborative effort from all our stakeholders, who worked together to set very ambitious, yet practical, targets and actions to mitigate and adapt to the impacts of climate change while improving access to energy. Nakuru is indeed a county of unlimited opportunities and we can only realise these targets if we continue working together.

We as the people of Nakuru County need to come together towards a climate-proof future for our beloved county and implement these climate actions so that the SEACAP does not become a document for archiving. Instead, this plan needs integration into the sector plans and county's integrated development planning; only then can we ensure that our SEACAP becomes a living guide for all of us.

I am proud that Nakuru County has joined more than 260 forerunning cities in Africa that are committed to tackle challenges of climate change and Energy access. Since becoming a CoM SSA signatory in 2020, Nakuru County has benefitted from capacity building and an improved understanding of climate change and climate action planning, sharing lessons with other CoM SSA cities, and the development of the Nakuru County SEACAP. I therefore urge other counties in Kenya, and all local governments in sub-Saharan Africa, to join the CoM SSA network of cities and work together to combat the impacts of climate change in the region.

Furthermore, I urge all citizens of Nakuru to pay special attention to the locals at the grassroot level, by communicating in a language in which they can understand. I also encourage all residents of Nakuru County to be climate change ambassadors at home and in the different parts of life, as we can only overcome the climate change crisis through joint effort; no action is too small or too big.

My profound appreciation goes to GIZ, the implementer of the Covenant of Mayors in Sub-Saharan Africa (CoM SSA) initiative, which is co-funded by the European Union and the Federal Ministry of Economic Cooperation and Development (BMZ) as well as technical partners such as ICLEI Africa, and other partners who have provided expertise in working with the county to develop our SEACAP.

The County Government of Nakuru is committed to taking climate action and increasing access to reliable, sustainable and affordable energy to create a resilient, thriving county for our people.

HE Hon. Lee Kinyanjui

10th May, 2022

Foreword from the Nakuru County Executive Committee Member (CECM) – Water, Environment, Energy, Natural Resources and Climate Change

County Government
of Nakuru, Kenya

Eng. Festus K. Ng'eno
CECM – Water, Environment, Energy, Natural Resources & Climate Change

The realisation of Nakuru County's Sustainable Energy Access and Climate Action Plan (SEACAP) was made successful through a joint effort from the County Government of Nakuru, representatives from the national government (especially the Climate Change Directorate, Ministry of Forestry, Ministry of Energy, Ministry of Devolution) and international development partners, mainly GIZ, ICLEI Africa, African Centre for Technology Studies (ACTS), EED Advisory, and Web Limited, with financial support provided via the Covenant of Mayors in Sub-Saharan Africa (CoM SSA) initiative.

In addition to the Nakuru County SEACAP being data driven and evidence based, this plan is a culmination of a highly participatory process, involving enhanced buy-in, ownership and technical capacity. All the County Executive Committee members, chief officers, directors and the climate change champions drawn from all departments, as well as technical staff within the county played a very critical role in shaping this plan. The main departments involved were the Department of Water, Environment, Energy, Natural Resources and Climate Change; Agriculture, Livestock and Fisheries, Health Service, Finance and Economic Planning; Tourism, Gender, Infrastructure, Lands, Housing and Physical Planning. The involvement of all the respective departments, not only increased the buy-in and potential for implementation by different stakeholder groups, but has also increased knowledge and awareness on climate change and the importance of climate planning within the county. With the capacity gained through this process, the county will be able to monitor and report on the progress of implementation of the climate plan, using both national and international level reporting platforms such as the JRC (Joint Research Centre) reporting platform, and the ICLEI-CDP Unified Reporting platform, to name a few.

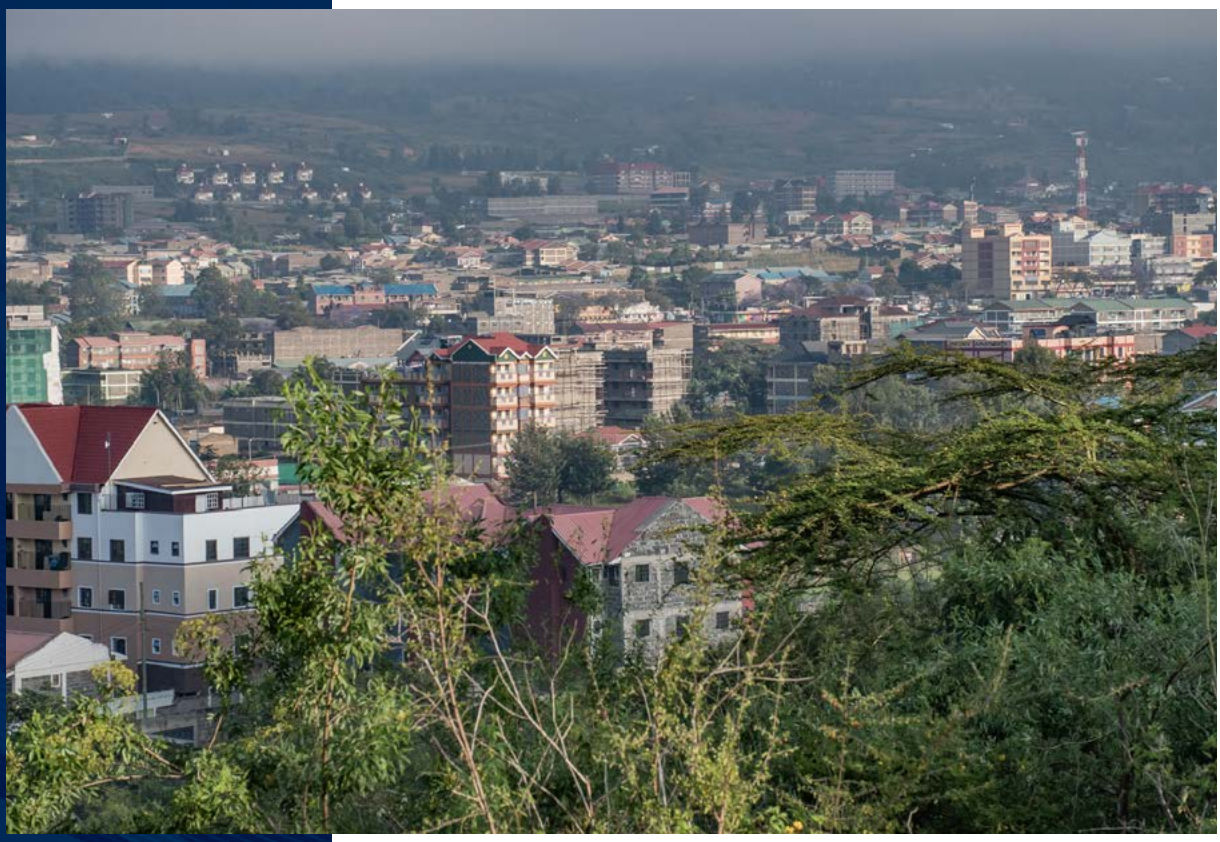
> ALL THE COUNTY EXECUTIVE COMMITTEE MEMBERS, CHIEF OFFICERS, DIRECTORS AND THE CLIMATE CHANGE CHAMPIONS DRAWN FROM ALL DEPARTMENTS, AS WELL AS TECHNICAL STAFF WITHIN THE COUNTY PLAYED A VERY CRITICAL ROLE IN SHAPING THIS PLAN.

Now that the SEACAP development process has been completed, the best way to measure success is to implement the actions identified to meet respective sectoral targets that were set by the county to mitigate and adapt to the impacts of climate change. This, again, will require that all county departments work together by assigning

> WITH THE SEACAP IN PLACE, AND WITH THE CURRENT COMMITMENTS AND DEDICATION OF THE COUNTY GOVERNMENT OF NAKURU AND ITS CITIZENS, ITS PARTNERS AND BENEFACTORS, WE CAN BUILD A CLIMATE-RESILIENT NAKURU FOR ALL.

budget line items to successfully implement the actions relevant to their sectors. The county, however, cannot implement all these actions on its own, and calls for technical and financial support from national and international organisations to enhance and fast-track implementation. This plan has also been developed at an opportune time when the Nakuru County Integrated Development Plan (CIDP), 2018–2022, is currently being updated. This creates a unique opportunity to integrate the SEACAP actions into the CIDP. Implementation of the SEACAP will also be enhanced by the existence of the Nakuru County Climate Change Fund, which was created in 2021. With the SEACAP in place, and with the current commitments and dedication of the County Government of Nakuru and its citizens, its partners and benefactors, we can build a climate-resilient Nakuru for all.

Eng. Festus K. Ng'eno
10th May, 2022



Executive summary

Nakuru County is one of the 47 counties of the Republic of Kenya that came into existence with the enactment of the Kenyan Constitution in 2010. Nakuru is one of the counties leading climate action in Kenya. As a Covenant of Mayors in Sub-Saharan Africa (CoM SSA) signatory, Nakuru County commits to developing a Sustainable Energy Access and Climate Action Plan (SEACAP). The SEACAP is a key document that sets the strategies, plans, and actions for a sustainable and low greenhouse gas (GHG) emission development pathway, while including climate adaptation actions and ensuring access to secure, affordable and sustainable energy, in response to the current and future impacts of climate change in the region. As such, the SEACAP is made up of three main pillars: the Mitigation pillar, Adaptation pillar, and Access to Energy pillar. The steps used in developing these pillars of the SEACAP have been summarised below.

FIGURE I: Stages of the Mitigation and Adaptation pillars within the development of the Nakuru County SEACAP

The data used to develop the baseline assessments for the three pillars were obtained through household surveys, literature review, interviews with key informants, relevant data repositories at the county, national and regional level, and most importantly, through participatory workshops held with stakeholders from multiple departments and civil society organisations within the county. Following the outcomes of the baseline assessments, participatory workshops were held with multiple departments at the County Government of Nakuru to set visions, sectoral targets and identify and prioritise actions needed to meet the county's climate change mitigation and adaptation goals respectively. While this report presents the baseline, vision, targets and actions pertaining to the mitigation and adaptation pillars, the County Energy Plan (CEP), which was developed concurrently and with inputs from the SEACAP, should be consulted for information regarding access to energy in Nakuru County.

THE SEACAP IS A KEY DOCUMENT THAT SETS THE STRATEGIES, PLANS, AND ACTIONS FOR A SUSTAINABLE AND LOW GREENHOUSE GAS (GHG) EMISSION DEVELOPMENT PATHWAY, WHILE INCLUDING CLIMATE ADAPTATION ACTIONS AND ENSURING ACCESS TO SECURE, AFFORDABLE AND SUSTAINABLE ENERGY, IN RESPONSE TO THE CURRENT AND FUTURE IMPACTS OF CLIMATE CHANGE IN THE REGION.

Climate change mitigation in Nakuru County

EMISSION SECTORS

42.8%%

stationary energy sector

33.2%

transport sector

24.0%

waste sector

Baseline Emissions Inventory

The first stage in developing the Mitigation pillar was to conduct a Baseline Emissions Inventory (BEI) which aimed to identify the activities in Nakuru County which are the primary sources of GHG emissions. The BEI for Nakuru County was produced by following the Global Protocol for Community-scale Greenhouse Gas Emission Inventories (GPC), an international standard for GHG emission inventories in cities (Greenhouse Gas Protocol, 2015). It covers a continuous 12-month period from January 2019 to December 2019, estimating all emissions from the stationary energy, transportation, and waste sectors as a result of activities within the county's geographical boundary.

The BEI revealed that the total GHG emissions for Nakuru County in 2019 were 1 642 867 tCO_2e, with the most emitting sector being the stationary energy sector (42.8%), followed by the transport sector (33.2%) and the waste sector (24.0%).

Based on the GHG emissions for 2019 reported in Nakuru County's BEI, a business-as-usual (BAU) scenario was developed to estimate the growth of GHG emissions in the county until 2030 in the absence of additional climate change mitigation actions and policies. The BAU scenario for Nakuru County estimates that GHG emissions will increase from 1 642 867 tCO_2e in 2019 to 2 718 694 tCO_2e in 2030, an overall increase of **65%** in 11 years.

Mitigation vision and targets

Using the BEI and BAU scenario, a set of draft targets were developed to align with Kenya's national mitigation targets, outlined in the country's Nationally Determined Contribution (NDC). These suggested targets were then discussed and finalised during in-person participatory workshops with participants from various Nakuru County government departments and civil society organisations. Nakuru County set the following vision to guide mitigation efforts across sectors:

> ***A low-carbon county that supports sustainable development by 2030.***

Nakuru County set an overall emissions reduction target as follows:

> ***Nakuru County seeks to reduce GHG emissions by 33% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions of at least 6% compared to the BAU scenario from domestic resources, while the remaining 27% is conditional on external support.***

In addition to the overall mitigation target for Nakuru County, targets for each sector were set as shown in **Table i**. The overall and unconditional targets for each sector are aligned with the national mitigation targets outlined in Kenya's NDC.

TABLE I: Sectoral GHG emission reduction targets for Nakuru County

SECTOR	BASELINE EMISSIONS IN 2019 (TCO_2E)	BUSINESS-AS-USUAL (BAU) EMISSIONS IN 2030 (TCO_2E)	OVERALL SECTOR TARGET BY 2030	UNCONDITIONAL SECTOR TARGET BY 2030
Stationary energy	703 860	1 053 480	57.5% off BAU	12% off BAU
Transport	544 749	1 009 769	17.6% off BAU	2.7% off BAU
Waste	394 258	655 444	16.4% off BAU	2.2% off BAU
Total	1 642 867	2 718 694	33% off BAU	6% off BAU

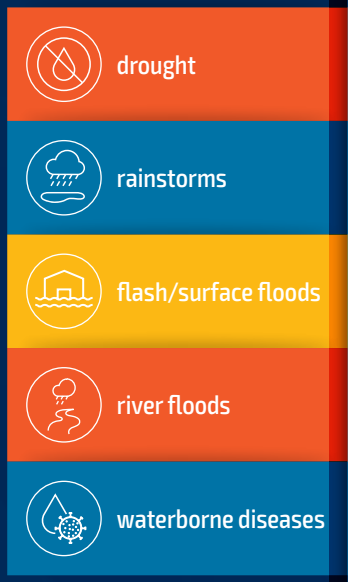
Mitigation actions

Following the target setting phase, a participatory workshop was held with stakeholders across multiple departments within the county government, including civil society organisations, to identify and prioritise actions that will enable the county achieve its climate mitigation targets. A total of 20 actions were identified across the three sectors. Of these, 14 actions were prioritised, based on technical, political and financial feasibility, co-benefits and synergies with existing priorities in the county. The prioritised actions per sector are shown in **Table ii**.

TABLE II: Priority actions for GHG emissions reduction in Nakuru County

SECTOR	PRIORITY ACTIONS PER SECTOR
Stationary energy sector	• Develop and enforce an Energy Act and regulations on energy efficiency within Nakuru County by 2027 • Undertake regular energy audits on 2 000 public buildings and facilities within the county • Install energy-efficient lighting in commercial, institutional and residential buildings • Develop small-scale biogas production facilities to promote clean cooking in Nakuru County in partnership with the private sector • Create three energy centres to disseminate information and raise awareness on sustainable energy
Transportation sector	• Construct and/or upgrade 10 km of non-motorised transport (NMT) routes in urban centres • Create green open spaces in the county's urban centres, including NMT corridors • Improve parking facilities on the edge of urban centres to reduce congestion • Expand the public transport system to include bus mass transport along major transit routes
Waste sector	• Upgrade three existing waste disposal sites in Nakuru County by improving access roads, fencing and zoning of the tipping areas • Establish a resource recovery centre in Nakuru County to increase waste recovery • Organise annual public awareness-raising campaigns and incentives to increase household-level waste segregation • Increase briquette production from organic waste and faecal sludge to contribute to waste recovery • Increase the extent of the sewer network and the capacity of the wastewater treatment infrastructure to service 60% of the population of Nakuru County

5 CLIMATE HAZARDS CURRENTLY AFFECTING NAKURU



THE MOST VULNERABLE GROUPS TO CLIMATE HAZARDS

Women and girls

Low-income households

Climate change adaptation in Nakuru County

Risk and Vulnerability Assessment

The objective of Nakuru County's RVA was to identify the most significant climate hazards currently affecting the county and to understand which key sectors and population groups are most affected by these hazards. The RVA also aimed to assess how these hazards are likely to change in intensity, frequency and timescale in the future as a result of climate change. Data informing the development of the RVA was gathered through (i) primary data collection; (ii) secondary data collection; and (iii) stakeholder consultations and participatory, multi-stakeholder workshops.

The RVA revealed that Nakuru County faces several climate hazards, particularly: drought, rainstorms, flash/surface floods, river floods, and waterborne diseases. These hazards are likely to intensify with climate change as temperatures are projected to rise in the county and rainfall is likely to become more erratic. The RVA identified the sectors most affected by current and future climate hazards as: (i) environment, biodiversity and forestry; (ii) water supply and sanitation; (iii) land use planning; and (iv) food and agriculture. It was also found that the most vulnerable groups to climate hazards in Nakuru County are women and girls, and low-income households.

Adaptation vision, targets and actions

Following the completion and validation of the Nakuru County RVA, consultations were held with stakeholders from various departments to prioritise sectors for adaptation, set an overarching adaptation vision and sector-specific targets for the key sectors, and subsequently identify and prioritise actions that will enable the county to achieve its climate adaptation vision.

The following overarching adaptation vision for Nakuru County (base year 2021) was adopted:

> ***A climate-resilient county with sustainable ecosystems and livelihoods by the year 2030.***

Based on the results of the RVA, NAP (2015) and NCCCAP (2018), workshop participants identified the following sectors as priority sectors which are most vulnerable to the impacts of climate change in the county: agriculture, livestock and fisheries; water; forestry; and tourism. One adaptation target was set for each priority sector, with the exception of the water sector for which two targets were set (one for access to water and one for sanitation). A total of 15 adaptation actions were then developed to contribute to achieving the sectoral targets. Of the 15 actions, one action was prioritised per sector target. The final adaptation targets and priority actions per sector are summarised in **Table iii**.

TABLE III: Nakuru County Climate Change adaptation targets and priority actions identified by stakeholders during participatory workshops

SECTOR	TARGET	PRIORITY ACTION IDENTIFIED BY STAKEHOLDERS
Agriculture, livestock and fisheries	By 2030, ensure that at least 70% of crop, livestock and fishery farmers and other stakeholders are using climate-resilient practices including water-harvesting techniques and nature-based enterprises (e.g. Agroforestry).	Desilt 60 water pans and construct 25 new water pans in Naivasha and Rongai subcounties by 2030 to promote water harvesting, conservation and utilisation for domestic and agricultural use in Nakuru County.
Water	By 2030, increase access to clean water to 80% of the population.	Map all community water sources in Nakuru County by 2030, including springs, boreholes, pans, dams and shallow wells.
	By 2030, increase access to sanitation to 100% of the population.	Support all rural villages in Nakuru County with achieving "Open Defecation Free (ODF)" status by 2030, including follow-ups, claims, verification, certification and celebration of ODF villages.
Forestry	By 2030, increase tree cover in Nakuru County to 75 000 ha.	Rehabilitate public green spaces in Nyayo Garden, Lion Garden, Naivasha People's Park and others, and reforest areas in gazetted forests with a focus on indigenous trees and the restoration of indigenous ecosystems.
Tourism	By 2030, ensure that the Nakuru County tourism sector promotes ecotourism and sustainability in 80% of its tourism destinations.	Conduct sensitisation and capacity-building on sustainable tourism activities with vulnerable groups (including youth, women and indigenous communities) across Nakuru County's 55 wards by 2030.

1 Introduction

1.1 The Covenant of Mayors in Sub-Saharan Africa (CoM SSA)

The Covenant of Mayors in Sub-Saharan Africa (CoM SSA) is a major catalyst for local climate action, an initiative with political commitment from over 270 local governments in sub-Saharan Africa. It is the "regional covenant" or chapter of the Global Covenant of Mayors for Climate & Energy (GCoM). It is a bottom-up and voluntary initiative that invites subnational governments and cities to define and meet ambitious and realistic energy access and climate targets set by themselves, in line with GCoM requirements. This means that targets are at least as ambitious as cities' respective governments' Nationally Determined Contribution (NDC) under the Paris Agreement. Furthermore, targets need to be in line with national adaptation plans (where these exist) and be consistent with the principles around energy access and urban sustainability embodied in the Sustainable Development Goals (SDGs). CoM SSA is open to all local authorities in sub-Saharan Africa, regardless of the size. In order to translate the political commitment into practical measures, CoM SSA signatories commit to producing and implementing a strategic and operational document called the Sustainable Energy Access and Climate Action Plan (SEACAP).

1.2 Sustainable Energy Access and Climate Action Plans (SEACAPs)

The Sustainable Energy Access and Climate Action Plan (SEACAP) is the key document that sets the strategies, plans, and actions for a sustainable and low greenhouse gas (GHG) emission development pathway, while including climate adaptation actions and ensuring access to secure, affordable and sustainable energy, in response to the current and future impacts of climate change. The SEACAP is both a strategic and an operational document. It uses the results of a Baseline Emissions Inventory (BEI) to identify the best fields of action and opportunities for reaching the county's greenhouse gas (GHG) emission reduction targets; it uses the results of a Risk and Vulnerability Assessment (RVA), which identifies the city's most relevant climate hazards and vulnerabilities, to

identify actions for reducing a city's risks to the impacts of climate hazards; and it uses the results of an Access to Energy Assessment, which assesses energy use, to identify actions to improve access to secure, sustainable, affordable and reliable energy. The SEACAP defines concrete measures for climate mitigation, adaptation and access to sustainable energy, with timeframes and assigned responsibilities, translating the long-term strategy into action.

SEACAP development and implementation involves four phases as follows:

i. **Initiation phase** – Activities in this phase include affirming political commitment to the SEACAP development from the county; and mobilising and engaging stakeholders.
ii. **Planning phase** – Activities in this phase include a pre-assessment phase and the SEACAP development phase. The pre-assessment phase involves developing a Baseline Emissions Inventory (BEI); developing a Risk and Vulnerability Assessment (RVA); and developing an Access to Energy Assessment (AEA). The BEI measures and quantifies the emissions from three sources: stationary energy, waste and transportation. The RVA identifies which climate hazards are affecting the county and indicates which sectors and populations groups are being most affected by those climate hazards. The AEA assesses the status of energy access in the county under two broad categories: access to electricity and clean cooking in households and access to electricity in public buildings. These three baseline reports offer an opportunity for the county to obtain data specific to the county, thus increasing awareness of the existing status and providing a premise for further action to improve the status quo. The SEACAP development phase includes identifying national action plans on climate change adaptation and mitigation as well as energy; setting adaptation, mitigation and access to energy targets; and developing actions to achieve these targets. The results of the planning phase are included in the SEACAP (this document).
iii. **Implementation phase** – This phase involves implementing the actions included in the SEACAP, starting with the ones identified as priority in the planning phase.
iv. **Monitoring and Reporting phase** – This phase involves regularly reviewing progress of implementing actions to ensure that the targets are achieved in this phase. Specific procedures and processes for each of the actions are confirmed, while maintaining constant communication with the stakeholders throughout. On a regular basis, progress is assessed and priorities are adjusted as needed to fit the current situation. A progress report should be developed and submitted every second year after the SEACAP was developed, for monitoring and evaluation.

FOUR PHASES OF SEACAP DEVELOPMENT AND IMPLEMENTATION

1.3 CoM SSA and Nakuru County

Nakuru County became a Covenant of Mayors in Sub-Saharan Africa (CoM SSA) signatory in 2020. Through its political commitment, the county also committed to developing and implementing a Sustainable Energy Access and Climate Action Plan (SEACAP). The SEACAP development process in Nakuru County has been supported by GIZ, with technical experts from ICLEI Africa and others from African Centre for Technology Studies (ACTS), WebLimited and the Green House. The SEACAP development process in Nakuru County has been highly participatory and inclusive, with multi-stakeholder participatory workshop being held at each step of the process (see **Figure 1**), ensuring that the county is not only a beneficiary, but actively contributing towards the content as well. All departments from the county government (with the Department of Water, Environment, Energy and Natural Resources as the lead department), were actively present throughout the process, and have also benefitted from capacity building sessions organised within this period, such as the climate change mainstreaming training that was delivered to the Climate Change Champions. These champions are representatives from all departments within the County Government of Nakuru.

This report covers the Mitigation and Adaptation pillars of the SEACAP; the county developed a separate County Energy Plan aligned with Kenya's national energy planning requirements. Experts from EED Advisory, supported by GIZ under the CoM SSA framework, assisted in the development of the Nakuru County Energy Plan (CEP). The CEP outlines the baseline, targets and actions for different types of energy use for various purposes (cooking, lighting, heating, cooling, etc.) across multiple sectors (transport, household, social, public and commercial institutions). The Access to Energy Assessment (AEA) that was developed as part of the SEACAP for Nakuru was shared with the experts for their use in developing the CEP. The AEA, as well as the CEP, can also be consulted for more information regarding the access to energy status of the county.

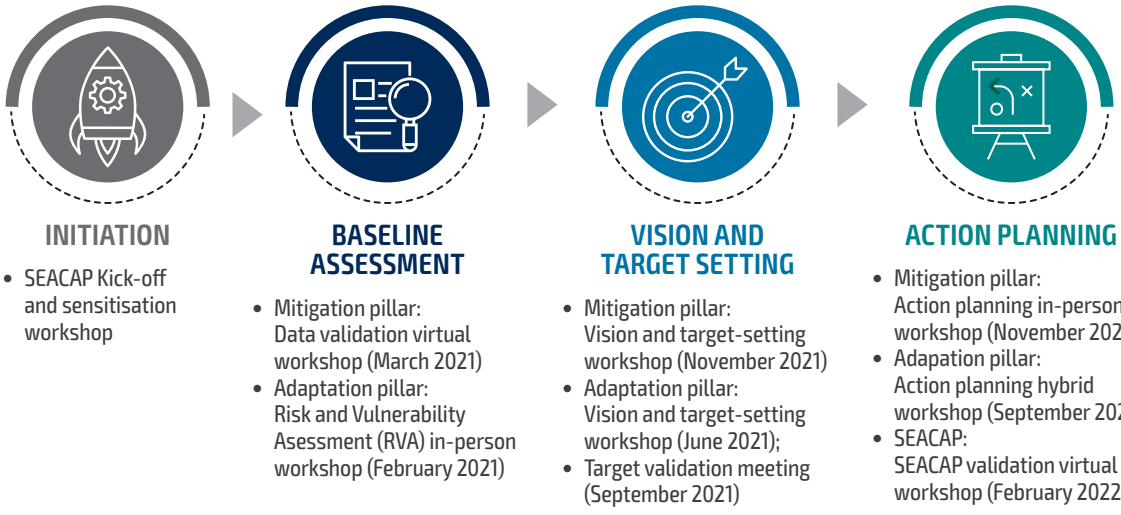


FIGURE 1: Overview of participatory workshops held at each stage of the Nakuru SEACAP development process

The Nakuru SEACAP will strengthen the implementation of existing climate change-related policies, strategies, regulations and plans of the County such as: The Nakuru County Climate Change Act, 2021; The Nakuru Climate Change Fund Regulations; Nakuru Climate Change Action Plan; Nakuru County Energy Plan; Nakuru County Water and Sanitation Act, 2021; Nakuru County Waste Management Act, 2021; as well as ongoing actions such as the greening of municipal parks; and the rehabilitation of solid waste dumping sites within the County.

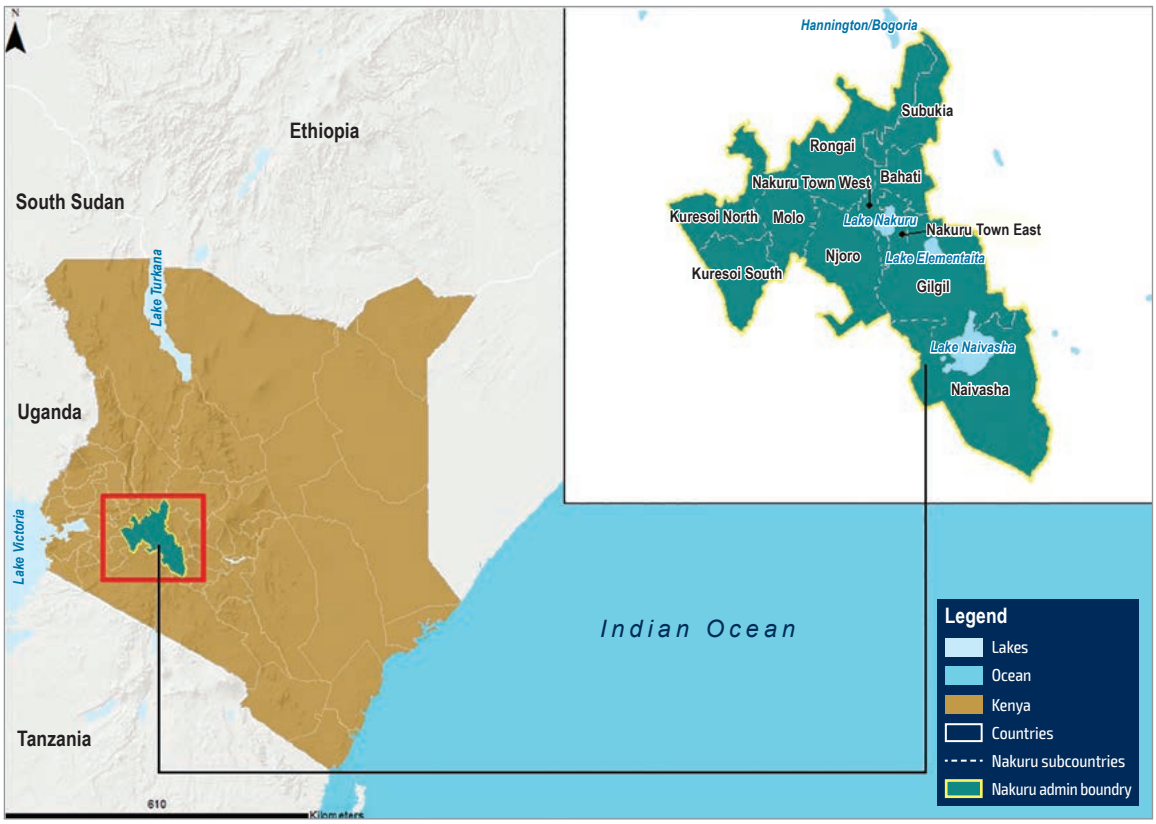
2 County context

Nakuru County is among the 47 counties of the Republic of Kenya that came into existence with the enactment of Kenyan Constitution in 2010. The county is cosmopolitan, comprising a populace of different ethnicities and nationalities (KNBS, 2019). The dominant communities include Kikuyu and Kalenjin. Other communities present in the county include Luo, Luhya, Maasai, Kamba, and Meru, among others (Nakuru County, 2018).

As per the 2019 National Population and Housing Census, the county's population was approximately 2.16 million in 2019, made up of 1 077 million males, 1 084 million females, and 95 intersexes. Approximately 33% of people in the county are aged 18–35, indicating a predominantly youthful population (KNBS, 2019). Furthermore, 54.2% live in rural areas, and 45.8% live in urban areas. The population growth rate is approximately 3% per year (Nakuru County, 2021).

The county is divided into eleven administrative subcounties namely: Nakuru East, Nakuru West, Naivasha, Molo, Njoro, Kuresoi North, Kuresoi South, Rongai, Bahati, Subukia and Gilgil as shown in (Source: KNBS 2019 census data)

Figure 2. These 11 subcounties are further divided into 31 divisions, 121 locations, and 265 sublocations.



(Source: KNBS 2019 census data)

FIGURE 2: A map of Nakuru County and its subcounties

Key demographic, economic and geographic indicators for Nakuru County have been outlined below in **Table 1**.

TABLE 1: Nakuru County overview

SECTOR	DESCRIPTION
1. Geography	
Location	The county is located between longitudes 35.41 º East or 35 º 24' 36" East and 36.6 º East or 36 º36' 0" East and latitude 0.23 º North or 0 º13' 48" North and 1.16 º South or 1º 9'36" South. Nakuru is among the 14 counties within the Rift Valley region.
Environmental and climate change challenges	Environmental degradation in Nakuru County is mainly as a result of inappropriate farming methods, poor solid and liquid waste disposal, soil erosion, inadequate sanitary facilities, massive felling of trees for firewood, encroachment of forest reserves, timber and clearing land for agriculture.
Land area (2019)	Nakuru County covers a land area of 7 505 km^2, compared to a national land area of 580 895.4 km^2 (making up about 1.3% of total land area in Kenya).
2. Demography	
Population (2019)	2 162 202 people, with 49.8% (1.077 million) males, 50.2% (1.084 million) females, less than 0.1% (95) intersexes. The national population of Kenya is 47 564 296 (KNBS, 2020).
Household size (2019)	3.5 persons per household in Nakuru County, compared to a national average of 3.9 (KNBS, 2020) The most populated households are found in Kuresoi South, with an average household size of 4.5 persons.
Population density (2019)	288 persons/km^2 in Nakuru County, compared to 82 people/km^2 in Kenya. Nakuru West has a very high population density of 2 764 persons/km^2 due to its very small land area of 72 km^2.
Number of households (2019)	616 723 households in Nakuru County, with an average household size of 3.5 persons (KNBS, 2019a), compared to 12 143 913 households in Kenya, with an average household size of 3.9 persons. The subcounty with the highest number of households is Naivasha (117 633) and the lowest is Subukia (21 819).
3. Governance and leadership	
County capital:	The county's capital is Nakuru City.
Number of subcounties and wards	There are 11 subcounties, 31 divisions, 121 locations, 265 sublocations. Subcounties include: Nakuru East, Nakuru West, Naivasha, Molo, Njoro, Kuresoi North, Kuresoi South, Rongai, Bahati, Subukia and Gilgil.
Urban areas	There is an urban population of 1 047 080 (48.4% of county population) comprising of 49.4% males and 50.6% females. There are 339 787 households covering a total land surface area of 949 km^2 and a population density of 1 103 persons per km^2. The major urban centres are: Nakuru, Naivasha, Mai Mahiu, Molo, Njoro, Gilgil, Subukia, Olenguruone, Bahati, Rongai, Salgaa, Dundori and Mau Narok (County Government of Nakuru, 2018).
Rural areas	The rural population of 1 115 122 people (51.6% of county population) comprises of 50.2% males and 49.8% females. There are 276 259 households (44.8% of households in the county) covering a total surface area of 6 556 km^2 (87.3% of total land area in county) and the population density is 170 persons per km^2.
Informal settlements	The major informal settlements are in Nakuru East (Bondeni, Manyani, and Lakeview), Nakuru West (Ronda, Kaptembwo, and Gituima), Gilgil (Kampi Somali, Maina, and Makaburi), Naivasha (Lakeview, Kihoto), Molo (Casino, Kasarani), and Njoro (Industrial area, Juakali, Jewathu, Bondeni).
4. Economy	
GDP	The county's Gross Domestic Product (GDP) for 2019 was estimated at KES 613 billion (at current prices), accounting for 6.9% of Kenya's GDP.
Unemployment levels	According to the Kenya Integrated Household Budget Survey (KIHBS) report 2015–16, approximately 22.9% of the labour force remains unemployed. Of these, 46% of the unemployed are female and 54% are male.
Main economic activities/industries:	The major economic activities within Nakuru County are: agribusiness, financial services, and tourism. Nakuru County's economy is built around agriculture, which accounts for approximately 60% of total economic activity (County Government of Nakuru, 2018).
Tourist attractions:	The national parks are the major tourist attractions in the county. These are: Lake Nakuru National Park, Hells Gate National Park and Mt. Longonot National Park. Other tourist sites include: Menengai Crater, Subukia Shrine, Lord Egerton Castle, Lake Naivasha, Lake Elementaita, Hyrax Hill prehistoric site, Ol-doinyo Eburru volcano and Mau forest (County Government of Nakuru, 2018).

3 Key findings of the pre-assessment phase

3.1 Key findings of the Baseline Emissions Inventory

The purpose of the Baseline Emissions Inventory (BEI) was to identify the activities in Nakuru County that are the primary sources of GHG emissions, thereby contributing to climate change on a global scale. If produced consistently, the emissions inventory can be used to track how emissions change over time and to identify and monitor the impact of appropriate mitigation interventions and low-emission targets.

THE PURPOSE OF THE BASELINE EMISSIONS INVENTORY (BEI) WAS TO IDENTIFY THE ACTIVITIES IN NAKURU COUNTY THAT ARE THE PRIMARY SOURCES OF GHG EMISSIONS, THEREBY CONTRIBUTING TO CLIMATE CHANGE ON A GLOBAL SCALE.

3.1.1 Methodology for developing the BEI

The BEI for Nakuru County was developed in accordance with requirements of the Global Protocol for Community-scale Greenhouse Gas Emission Inventories (GPC), an international standard for cities, using a Proxy Data Tool developed for ICLEI Africa, which was built on the City Inventory Reporting and Information System (CIRIS) tool for GHG inventories for subnational governments. The GHG inventory for Nakuru County uses a combination of local data, where available, and downscaled national and regional (proxy) data for Kenya and East Africa. The BEI includes GHG emissions from three sectors[1]: stationary energy, transportation and waste. The Nakuru County BEI covers a continuous 12-month period from January 2019 to December 2019 and estimates all emissions from the stationary energy, transportation and waste sectors as a result of activities within the county's geographical boundary.

3.1.2 Overview of GHG emissions in Nakuru County

Total GHG emissions for Nakuru County in 2019 were estimated at 1 642 867 tCO_2e (Table 2). This estimate includes emissions from the stationary energy, transportation and waste sectors. This is equivalent to approximately 0.8 tCO_2e per person. For comparison, national emissions for Kenya in 2010 were 17 000 000 tCO_2e when considering only the stationary energy, transport and waste sectors (Republic of Kenya, 2015). This is equivalent to approximately 0.4 tCO_2e per person. However, emissions per person in Nakuru County in 2019 were only about one sixth of the global average (World Bank, 2022a).

The total GHG emissions in Nakuru County for 2019 are equivalent to 37 000 cars travelling from Nakuru city centre to Nairobi city centre and back every day for a year.

1 Under the BASIC reporting level of the GPC, reporting emissions from the stationary energy, transport and waste sectors is mandatory. Under the BASIC+ reporting level, emissions from agriculture, forestry and other land use (AFOLU) and industrial processes and product use (IPPU) can be optionally included.

TABLE 2: Summary of GHG emissions by sector for Nakuru County (tCO_2e)

SECTOR		TOTAL BY SCOPE			TOTAL GHG EMISSION
		Scope 1	Scope 2	Scope 3	
Stationary energy	Energy use	669 273	34 587	NE[2]	703 860
Transportation	All transportation	544 749	0	NE	544 749
Waste	Generated in the region	394 258	–	NO[3]	394 258
TOTAL		1 608 280	34 587	NE	1 642 867

3.1.3 GHG emissions by sector and subsector

The total GHG emissions for Nakuru County in 2019 (that is, emissions from stationary energy, transportation and waste) are estimated at 1.6 million tCO_2e. **The largest contributing sector was stationary energy, contributing 43% of emissions, followed by transportation (33%) and waste (24%),** as shown in **Figure 3**.

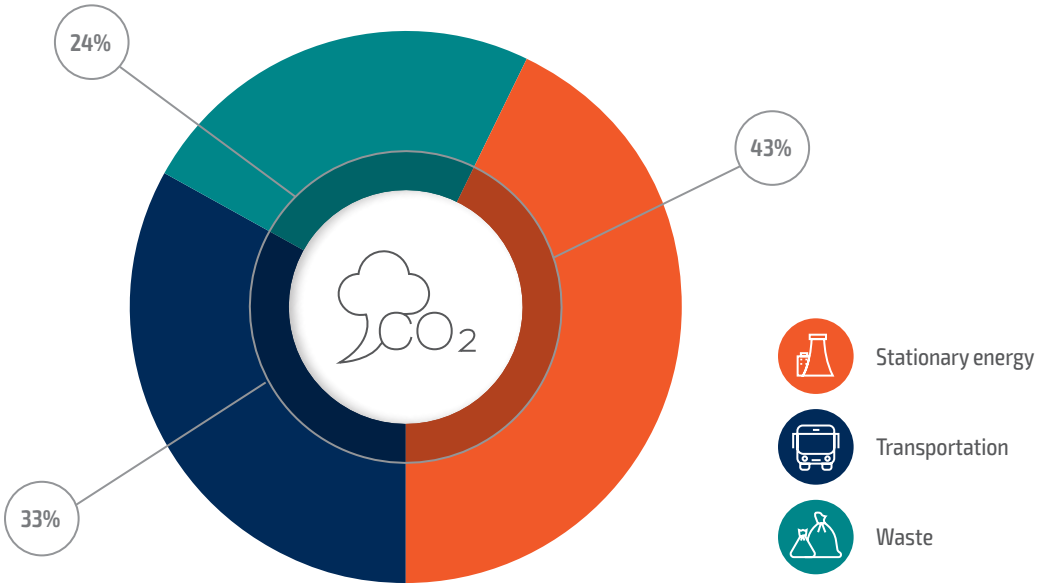


FIGURE 3: Sector contributions to GHG emissions in Nakuru County

In Nakuru County, the stationary energy sector accounted for 703 860 tCO_2e (43% of total GHG emissions) in 2019. The largest proportion of emissions in the stationary energy sector come from energy use in residential buildings (37%). This is followed by energy use in manufacturing and construction (30%) and in energy industries or charcoal production (23%). The remaining emissions in the stationary energy sector come primarily from energy use in commercial and institutional buildings (8%), while less than 1% come from energy use in agriculture, forestry and fishing activities **(Figure 4)**.

2 NE = Not estimated
3 NO = Not occurring

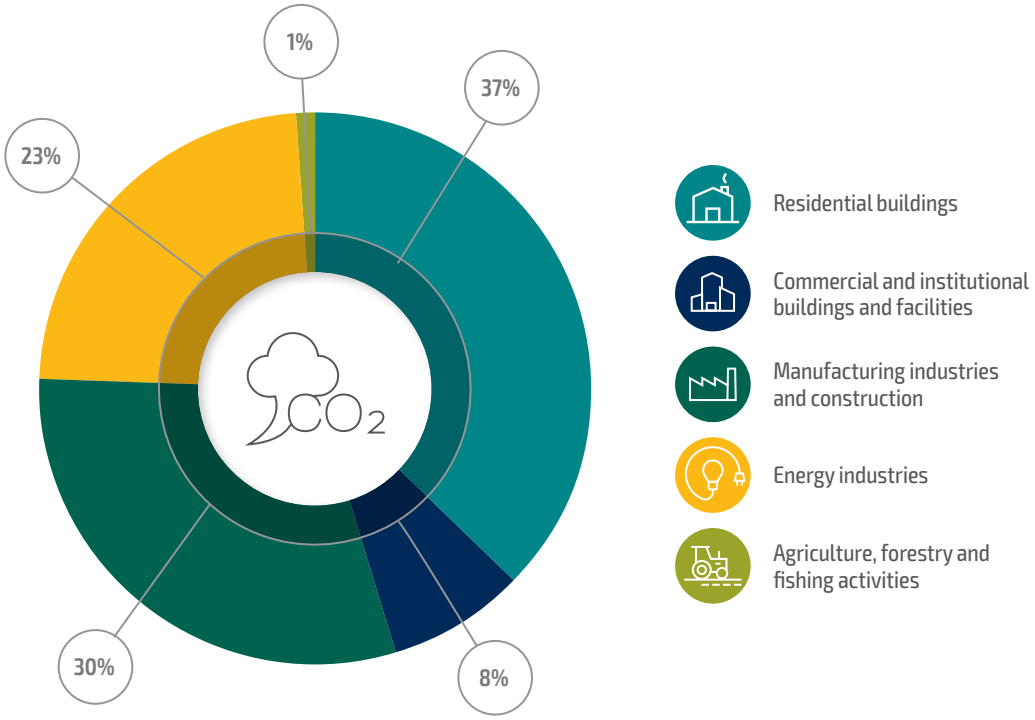


FIGURE 4: Subsector contributions to stationary energy GHG emissions in Nakuru County

The transportation sector accounted for 544 749 tCO_2e (33% of total GHG emissions) in 2019. Transport sector emissions included in the BEI are all a result of fossil fuel use for road transport (43% petrol and 57% diesel), including public and private passenger vehicles as well as freight transport **(Figure 5)**.

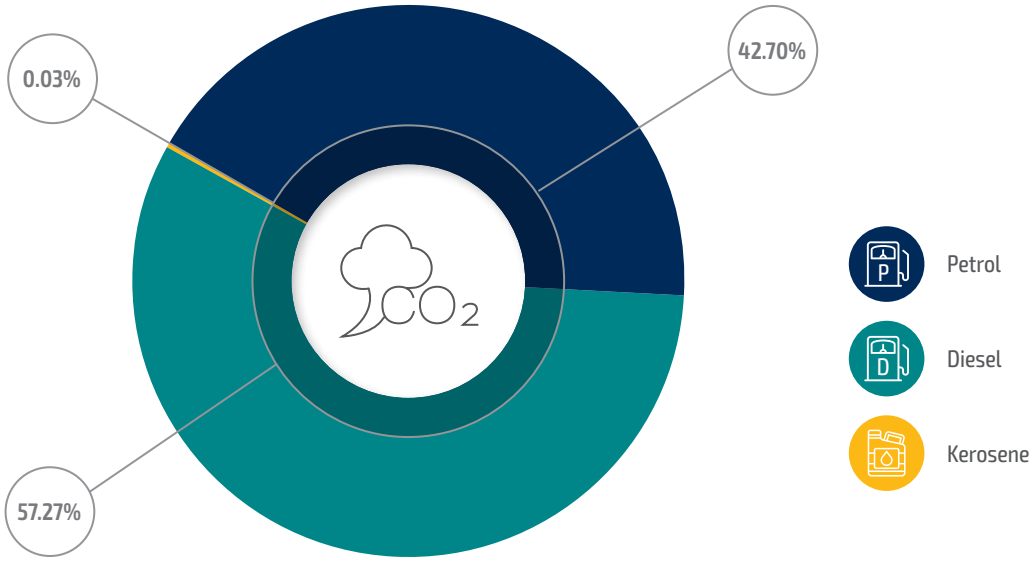


FIGURE 5: Emissions from the transportation sector in Nakuru County by fuel

The waste sector in Nakuru County was responsible for 394 258 tCO_2e (24% of the county's total GHG emissions) in 2019, all of which arise from solid waste and wastewater treated in the region**.** The disposal of solid waste in landfills and dumps accounts for the largest portion of waste emissions at 46%, while wastewater accounts for 27% of waste emissions. Incineration and burned waste accounts for a further 26% of the emissions. Biological treatment of waste accounts for 1% of emissions **(Figure 6)**.

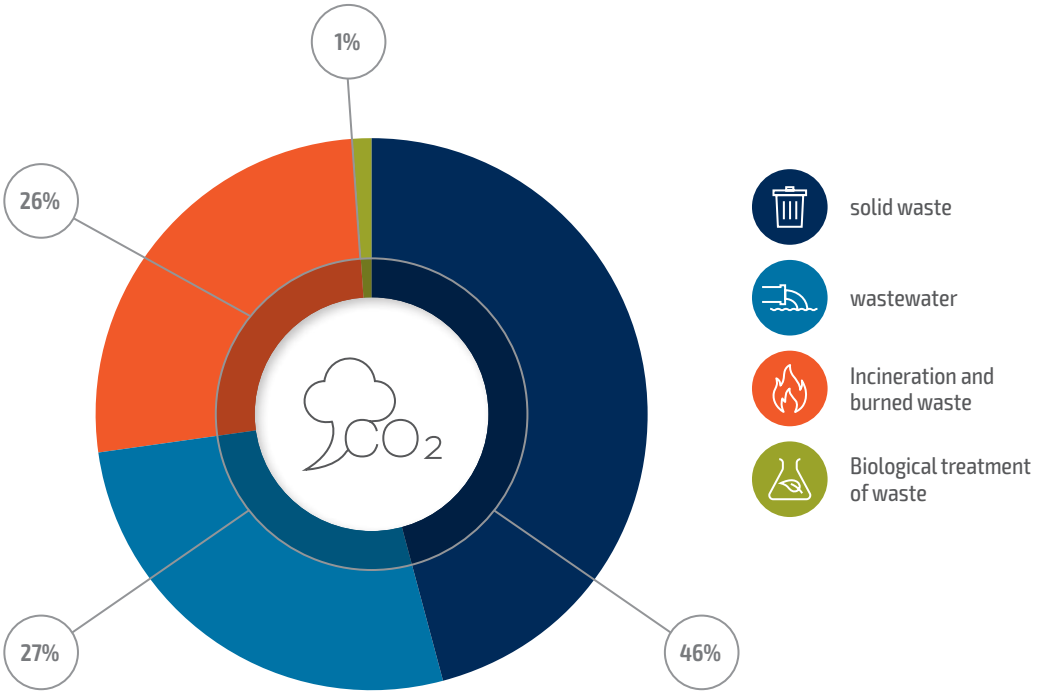


FIGURE 6: Subsector contributions to waste sector GHG emissions in Nakuru County

3.1.4 GHG emissions by gas

Emissions of the three most common GHGs (Scope 1 emissions) are included in the BEI – carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Scope 2 emissions (i.e. emissions from electricity consumption) are only reported in CO_2e due to the grid emission factor being expressed as $kgCO_2e/kWh$ and are therefore not disaggregated by gas. Similarly, emissions resulting from charcoal production are only reported in total CO_2e due to the emission factor being expressed as $kgCO_2e/tonne$. For Scope 1 emissions, carbon dioxide (CO_2) contributes 64% of total emissions, followed by methane (CH_4) at 30% and nitrous oxide (N_2O) at 6%.

Biogenic CO_2 emissions (shown as $CO_2(b)$) for each sector are shown in **Figure 7**. However, $CO_2(b)$ emissions are not included in the total GHG emissions reported from the inventory for Nakuru County. Biogenic CO_2 emissions are those emissions that result from biomass materials that naturally sequester CO_2, including fuels produced by living organisms or biological processes (for example through forestry or agriculture), but not fossilised or from fossil sources. This includes CO_2 emissions from the combustion of wood fuel and charcoal, as well as the combustion of biogenic materials during waste treatment. While CO_2 emitted from any source contributes to the greenhouse effect, following international protocols, these emissions are not included in the overall total for the GHG inventory. This is because they are considered to be offset by the growth of biomass, or accounted under land use and land use change (Greenhouse Gas Protocol, 2015). **It is estimated that 3 442 776 $tCO_2(b)$ were emitted in Nakuru County in 2019 – double the total GHG emissions included in the inventory. 99% of these emissions are linked to the combustion of charcoal and wood in the stationary energy sector, especially in residential buildings.** The remaining 1% of biogenic CO_2 emissions result from solid waste disposal. Reducing the use of unsustainable biomass fuels and thereby reducing biogenic CO_2 emissions can contribute positively to climate change mitigation[4].

4 The Nakuru County Baseline Emissions Inventory should be consulted for more information regarding its methodology and findings. This document can be accessed on the CoM SSA and Nakuru County websites.

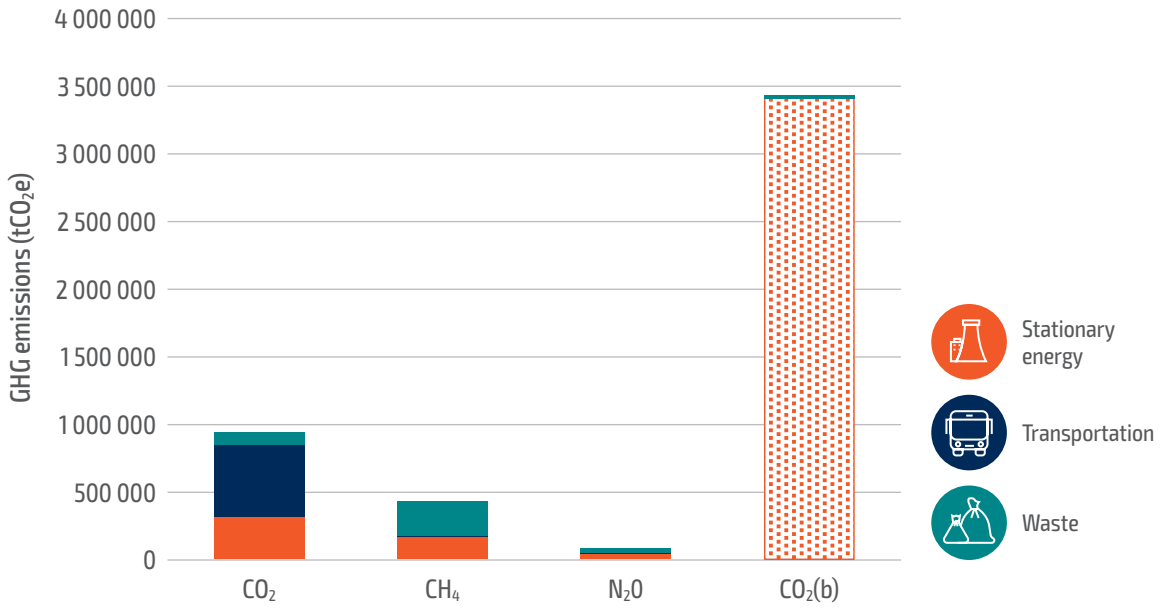


FIGURE 7: Emissions by sector for each greenhouse gas in Nakuru County

3.2 Key findings of the Risk and Vulnerability Assessment

The Risk and Vulnerability Assessment (RVA) serves as a reference to assist local governments in their decision making with regards to climate change adaptation and to support the development of their adaptation targets and action plans. The RVA identifies the most significant climate hazards currently affecting local communities, as well as the extent to which economic sectors and vulnerable population groups are impacted by these hazards. It also assesses how these hazards are likely to change in intensity, frequency and over what timescale, as well as how these changes will likely impact key sectors and population groups in the future. Finally, the RVA explores the resilience of the local population by identifying which factors support or challenge adaptive capacity.

3.2.1 Methodology for developing the RVA

Data informing the development of the RVA were gathered through three separate methodologies, namely: (i) secondary data collection; (ii) primary data collection; and (iii) stakeholder consultations and multi-stakeholder workshops.

i. **Secondary data collection**: This included scanning secondary databases such as the Climate Information Platform, reviewing policy and academic documents relevant to climate change in Nakuru County, and consulting key stakeholders (including the county and national government agencies) to develop a detailed situational analysis as well as build datasets. More specifically, this phase involved compiling historical and projected climate trends for Nakuru using: (i) satellite climate data retrieved from the archives of the Kenya Meteorological Department (KMD) as well as from the Nakuru meteorological station through the Climate Information Platform (CIP); (ii) the Nakuru County Climate Risk Profile for Nakuru County 2016 from the Ministry of Agriculture; (iii) key relevant documents such as the National Climate Change Action Plan 2018–2022, the Kenya National Adaptation Plan 2015–2030, the Nationally Determined Contribution 2020, and the Nakuru County Climate Change Action Plan from the Ministry of Environment (Climate Change Unit) and from the Kenya Climate Working Group.

ii. **Primary data collection**: Primary data were mainly collected through household surveys using questionnaires based on a representative household sample drawn from the eleven subcounties of Nakuru. These data were used to ground-truth the secondary data, as well as contextualise some of the national-level climate impacts and vulnerability data to the county context. The total sample size was 420 households of a total household population of 616 046 based on 2019 census results (Figure 8) (KNBS, 2019). During the survey, 235 men and 185 women, mostly between 35–44 years old, were interviewed, with 67% of households headed by men.

iii. **Stakeholder consultations and multi-stakeholder workshops**: Primary and secondary data were complemented by two participatory workshops (held on 19 and 21 January 2021, respectively) to provide insights on policy and technical elements of the assessments. In addition to supporting the RVA assessment through policy and technical outputs, the two workshops were intended to create awareness and promote co-ownership of the climate change adaptation planning process in Nakuru. While the policy workshop was undertaken virtually, the technical workshop was executed physically and virtually (hybrid workshop) in Nakuru with key technical teams working in groups to provide risk and vulnerability data guided by specified RVA matrices.

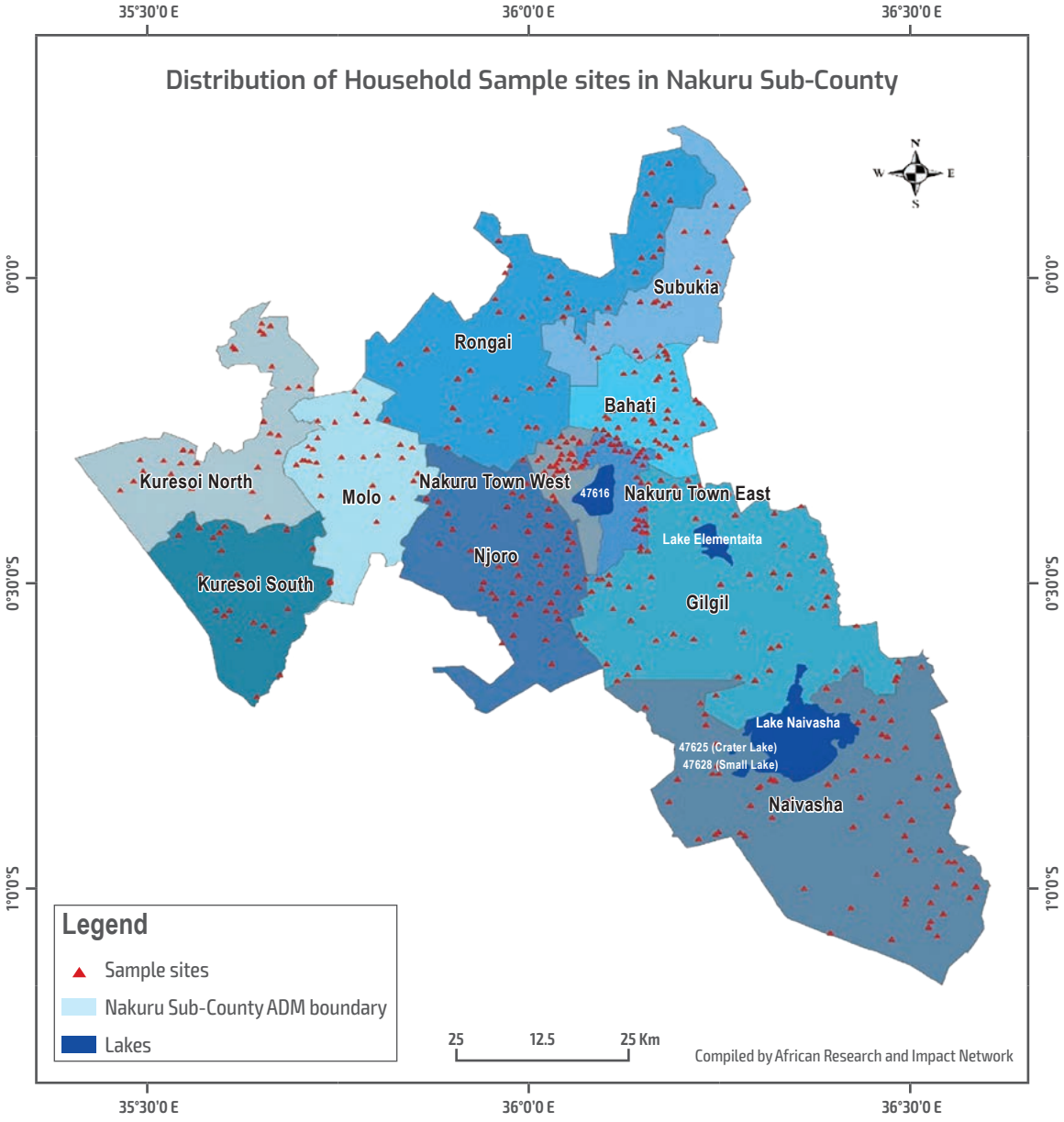


FIGURE 8: Household random distribution sample sites in Nakuru subcounties

3.2.2 Historical and projected climate change in Nakuru County

Kenya's climate ranges from tropical (along the coast) to arid (in the mountain regions). The average temperature across the country is 24°C and the mean annual precipitation is 669 mm. The rainy season in Kenya usually begins in March and decreases in May to June. Since 1960, Kenya's mean annual temperature has increased by 1.0°C, at an average rate of 0.21°C per decade. The rate of increase has been most rapid in March to May (0.29°C per decade) and slowest in June to September (0.19°C per decade). Observations of rainfall over Kenya since 1960 do not show statistically significant trends, as trends in the extreme indices based on daily rainfall data are mixed (World Bank Group, 2021). According to the global climate model CMIP5 (RCP 8.5), mean annual temperature in Kenya is expected to increase by 1.0°–2.8°C by 2060 and annual rainfall is expected to increase between October and December as well as between March and May.

According to the Nakuru County Climate Risk Profile (2016), Nakuru experiences a bimodal rainfall pattern, receiving heavy rainfall from March to June and low rainfall from September to November. On average, dry spells are longer around the second wet season ranging from 35 to 80 days in any given year. Around the first wet season, the dry spell ranges between 25 to 60 consecutive days every year. Satellite data for rainfall (from Chirps) and temperature (from ERA-5) from the Nakuru Meteorological station analysed using the ORIGIN-Pro software also show that the climate is shifting at the county level. Since 1981, the county has experienced a moderate (1.0°C) increase in mean temperature accompanied by increased heat stress, especially in the first wet season, with an associated reduction in the crop cycle.

The Climate Systems Analysis Group (CSAG) from the University of Cape Town (UCT) has developed the Climate Information Platform (CIP) which provides climate-related information at downscaled levels. Utilising data collected from weather stations located in towns across the African continent (including the Nakuru weather station), the CIP runs a series of climate models which collectively provide a database of historical climate patterns as well as future projections for regions and districts throughout the world. With regards to temperature, these climate models all agree that warming within the Nakuru County will almost certainly occur and that there will be an overall increase in average monthly temperatures by between 1.0° and 2.5°C by 2060 **(Figure 9)**. The data also indicate that there will be an increase in heat wave duration, especially in January and February. This is calculated relative to the historical period 1980–2000 under RCP 8.5.

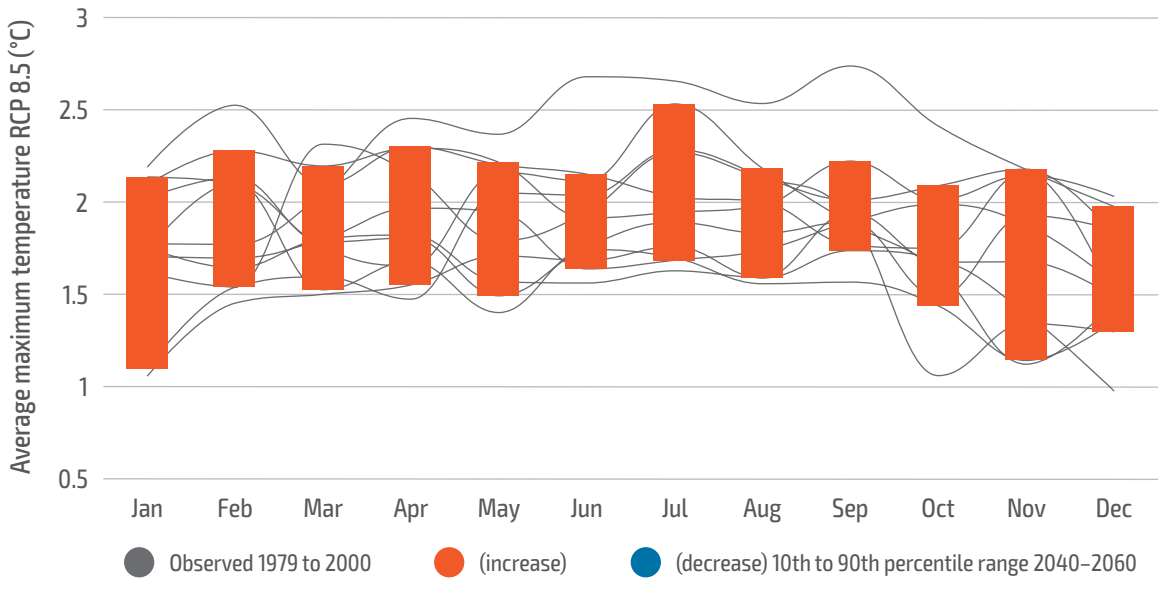


FIGURE 9: Average predicted maximum monthly temperature in Nakuru for the period 2040–2060

In terms of rainfall, the climate models all agree that shifts in the historical rainfall patterns will also almost certainly occur **(Figure 10)**. However, the models do not agree on the direction of change and as such there is uncertainty as to whether there will be an overall increase or a decrease in annual rainfall in Nakuru County. This is calculated relative to the historical period 1980–2000 under RCP 8.5. The solid red bars indicate a range of potential decreases in rainfall for each month, whilst the solid blue bars indicate a range of potential increases in rainfall for each month. Where both blue and red bars are present for one month, it indicates there is uncertainty for that month and that the rainfall could either increase or decrease for that month.

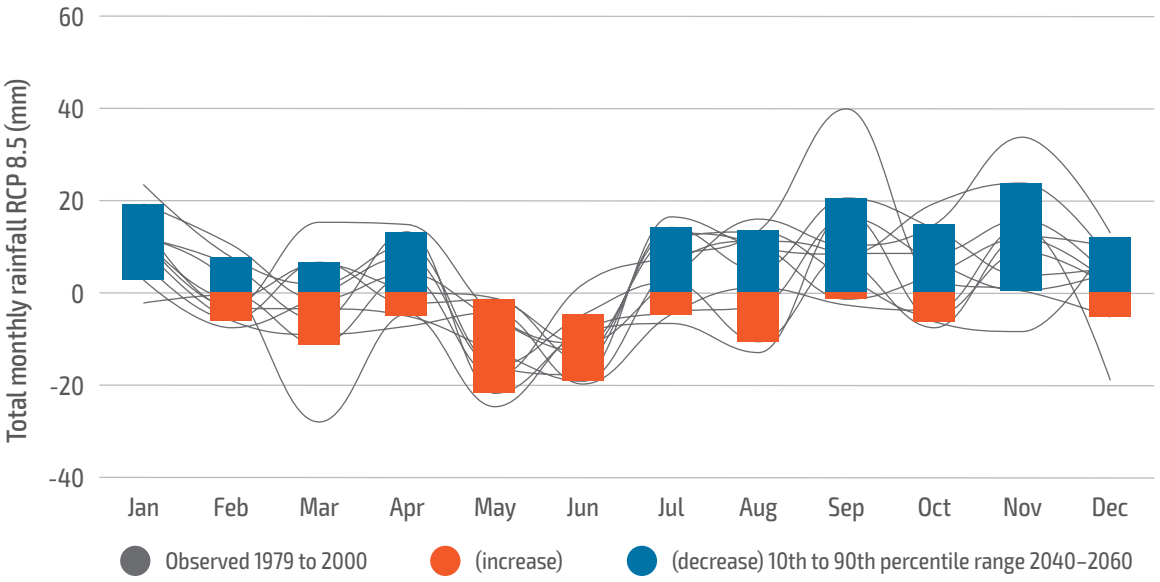


FIGURE 10: Total predicted monthly rainfall in Nakuru for the period 2040–2060

3.2.2 Current and future climate hazards

The National Climate Change Action Plan (NCCAP) 2018–2022 indicates that rising temperatures, uncertain changes in rainfall patterns, stronger storm surges and greater risk of extreme weather events such as droughts, floods and landslides are all significant climate risks facing Kenya. Based on data from the participatory workshops, the household survey, interviews and results presented in the Nakuru County Climate Change Action Plan (NCCCAP) 2018–2022, there are 21 climate hazards currently affecting Nakuru County: rainstorms, fog, hail, severe wind, lightning/thunderstorms, extreme winter conditions, cold waves, extreme cold days, heat waves, extreme hot days, droughts, forest fires, land fires, flash/surface floods, river floods, groundwater floods, permanent inundation, landslides, rock falls, subsidence, waterborne diseases and vector-borne diseases.

Further risk mapping indicated that the five hazards that have the most significant impact on Nakuru County are **droughts**, **rainstorms**, **flash/surface floods**, **river floods**, and **waterborne diseases**. According to the findings of the RVA, these hazards are likely to intensify with climate change as temperatures are projected to rise in the county and rainfall is likely to become more erratic. Current and future impacts of these hazards on the population of Nakuru County include: increase in crop failure, malnutrition, fluctuation in water levels of lakes, depletion of aquifers, soil erosion and degradation, water pollution, loss of biodiversity, and damage to infrastructure such as roads.

3.2.3 Vulnerable economic sectors and population groups

The NCCAP 2018–2022 identified several key sectors as relevant for the Mount Kenya and Aberdares Counties Trade and Investment Block, of which Nakuru County is a part. These include industry, infrastructure, information and communications technology (ICT), agribusiness, tourism, health, and forestry. The National Adaptation Plan (2015) lists agriculture, livestock, water, environment, infrastructure, sustainable livelihoods, energy and tourism as priority sectors. At the county level, the NCCCAP 2018–2022 identifies the sectors of agriculture, livestock and fisheries, water, wildlife and tourism, forestry, transport and infrastructure, health, energy, mining, manufacturing and trade as being key to promoting a low-carbon and climate-resilient economy and livelihoods in Nakuru County.

The RVA found that the sectors most affected by current climate hazards are: **food and agriculture**; **water supply and sanitation**; **environment, biodiversity and forestry**; and **land use planning**. Stakeholders provided a rationale for the selection of these sectors by describing how climate hazards which already affect Nakuru County could further impact these particular sectors in the future if no action is taken **(Table 3)**.

Regarding vulnerable population groups, households and communities in Nakuru are impacted differently by climate hazards depending on the magnitude of the climate hazard, and their adaptive capacity. The household survey conducted found that the following groups are vulnerable to climate hazards: women and girls; the less educated; indigenous populations; marginalised groups; persons with disabilities; persons with chronic diseases; low-income households; persons living in substandard housing; and unemployed persons. Of these groups, **women and girls**, and **low-income households** are considered to be the most vulnerable. Evidence shows that in most African settings such as Nakuru County, women spend long hours on farms, hence are most susceptible to heat stress. Similarly, as the primary caregivers, women are widely responsible for daily household livelihoods and spend more time at home with children, and thus are more exposed to risks such as floods and hunger. Low-income households are less endowed with assets that could build their long-term adaptive capacity and thus can only cope with daily (relatively moderate) climate risks, and become highly vulnerable to severe events such as floods and landslides. Overall, the differentiated impacts could help in tailoring adaptation actions towards these vulnerable social groups.

SECTORS MOST AFFECTED BY CURRENT CLIMATE HAZARDS

Food and agriculture

Water supply and sanitation

Environment, biodiversity and forestry

Land use planning

3.2.4 Factors that affect adaptive capacity

The RVA found that factors that could support the adaptive capacity of Nakuru County in the future include: agricultural and livestock insurance and safety net schemes; improved technology to handle post-harvest losses; mainstreaming and promotion of climate-smart agriculture and livestock development; improved communication systems related to climate-smart agriculture extension and agroecological issues; domestication of the National Water Master Plan to ensure dams, dykes, lakes, and rivers are protected; and improvement in public awareness of climate health risks.

Finally, the RVA found that factors that could challenge the adaptive capacity of Nakuru County include: conflict over land-use policies in the agriculture-livestock sectors; increased demand for water in other sectors and an increasing human population; incoherent and insensitive policies to deal with the over-abstraction of water and other water management issues; limited data on the current and future water situation; overexploitation of wildlife habitats due to the absence of laws to support wildlife benefits to the population; loss of indigenous forest knowledge and practices that protected certain areas for community benefits; and insufficient funds to support research on climate-related diseases – especially those in the tropics – hence, increased endemism.

For further detail, please refer to the Nakuru County RVA developed as part of the SEACAP development process.

TABLE 3: Analysis of priority sectors from the technical workshop

PRIORITY SECTOR FOR ADAPTATION ACTIONS	SECTOR DESCRIPTION	IMPACT OF CLIMATE HAZARDS ON THE SECTOR	PROJECTED IMPACT OF CLIMATE HAZARDS UNDER BAU SCENARIO
Food and agriculture	• The food and agriculture sector includes agriculture, livestock, and fisheries in the context of Nakuru County. • The agricultural sector is the backbone of the county's economy and is important to address food security. • Most of the land in the county is agricultural.	• The effects of climate change in Nakuru County have led to increasing forest fires, decreasing agricultural productivity, increasing urban sprawl, surging of lakes and increasing migration and conflict as a result of porous borders and the fight for resources. • The temperature increase has been a key cause of the decreased productivity of most agricultural products. Some crops such as wheat have been negatively affected due to meteorological droughts and the associated increase in crop pathogens. • In addition to droughts, flooding also leads to loss of crops and livestock as well as incidence of pests and diseases, locusts, fall armyworm, livestock diseases and East Coast fever.	• Increasing vector-borne, waterborne, and airborne diseases will affect farming in the future. It is anticipated that it will be difficult to continue with farming practices due to various diseases. • Increasing extreme precipitation is likely to cause soil saturation and affect crop productivity generally. • Increasing frequency of drought is likely to lower wheat production and other key crops in the country.
Water supply and sanitation	• Water for agriculture and food production contributes substantially to the county's economy and is highly vulnerable to climate change impacts. Water contributes to producing food, employment (directly and indirectly), foreign exchange (revenue), and provides raw materials for industries.	• Erratic and unpredictable rainfall patterns impact water supplies negatively. This leads to post-harvest losses and affects the cropping calendar – the majority of crops are rain fed.	• If unchecked, the sector could be adversely affected, leading to conflict, rural-urban migration, and crop-livestock farmer conflicts in the search for pasture.
Environment, biodiversity and forestry	• The environment, biodiversity and forestry sector includes the wildlife and tourism sectors in Nakuru County.	• Changing rainfall patterns negatively impact water levels in the lakes and rivers. This affects the biodiversity of the county relying on these water sources, and therefore also the tourism sector. • Droughts, water scarcity and heat waves increase the prevalence of disease and wildlife deaths. • Forest fires lead to loss of biodiversity and habitats.	• It is expected that rainfall will become more erratic and temperature will rise under a BAU scenario, leading to increased negative impacts on forest, river and lake health, as well as biodiversity levels. • Losses in biodiversity could negatively impact tourism.
Land use planning	• The land sector guides resource use and management in the entire county. Properly planned and integrated land use plans are key to community adaptive capacity. This might entail the development of spatial plans to guide resource utilisation and management. In this case, the county and its citizens need to be proactive in planning rather than reactive.	• The effects of climate change in Nakuru County include an increase in forest fires, flooding areas, decreased soil productivity, urban sprawl, surging of lakes, increased migration and conflict as a result of porous borders and fights over resources. Consequently, the sector has increasingly lost its value and resulted in community incapacitation to adapt to the impacts of climate change.	• If no action is taken, increasing challenges such as sinking grounds and even the loss of lives could be seen in the near future in Nakuru County.

4 Climate change mitigation and adaptation targets

Kenya has made massive strides towards developing relevant policies and plans to guide the country's fight against climate change, both at the national and the county level. The development of the SEACAP (baseline, targets and actions) is anchored in Kenya and Nakuru County's existing climate action initiatives and ambitions. The targets contained in this SEACAP builds on these policy documents, particularly on the 2020 updated Nationally Determined Contribution (NDC); the National Climate Change Action Plan, 2018–2022, the National Adaptation Plan, 2015–2030; the Nakuru Country Climate Change Action Plan, 2018–2022; and the Nakuru County Clean Energy Policy (2016) and Action Plan (2016). This chapter presents the climate change mitigation and adaptation vision and targets that were set by Nakuru County during the SEACAP development process.

4.1 Mitigation targets

With regards to mitigation, all local governments (CoM SSA signatories) are required to set a long-term overarching mitigation vision and target, as well as individual targets for each emitting sector identified in the BEI. The mitigation vision and targets for Nakuru County are informed by the BEI, existing county policies and plans, and national mitigation targets. They were formulated and discussed during a participatory workshop in November 2021. The vision and targets were then validated during a validation meeting with the County Government of Nakuru in February 2022.

The vision and targets are therefore aligned with national and local policies and strategies, including Kenya's updated Nationally Determined Contribution (NDC) and Kenya's National Climate Change Action Plan (NCCAP) 2018–2022. The targets meet the requirement of being *at least as ambitious as the unconditional component of the NDC*, set out in the SEACAP Development Guidebook (Palermo, 2018). In addition, like the national mitigation targets set out in the NDC, the mitigation targets for Nakuru County are set relative to a baseline or business-as-usual (BAU) scenario, outlined below.

4.1.1 Emissions for Nakuru County under a BAU scenario

A business-as-usual (BAU) scenario has been developed for Nakuru County to estimate how GHG emissions will change until 2030 in the absence of additional climate mitigation action. The BAU scenario uses emissions estimated in the BEI as a starting point and projects emissions to 2030 based on assumptions about how drivers of GHG emissions, including population and GDP, will change over the coming decade.

Under the BAU scenario, GHG emissions from Nakuru County are expected to increase by 65% in 11 years (approximately 4.7% per year) from 1 642 867 tCO_2e in 2019 to 2 718 694 tCO_2e in 2030 if no emissions reduction actions are taken **(Figure 11)**. Proportionally, the largest expected growth is in the emissions from the transportation sector, which is expected to increase from 33% of total emissions in 2019 to 37% in 2030.

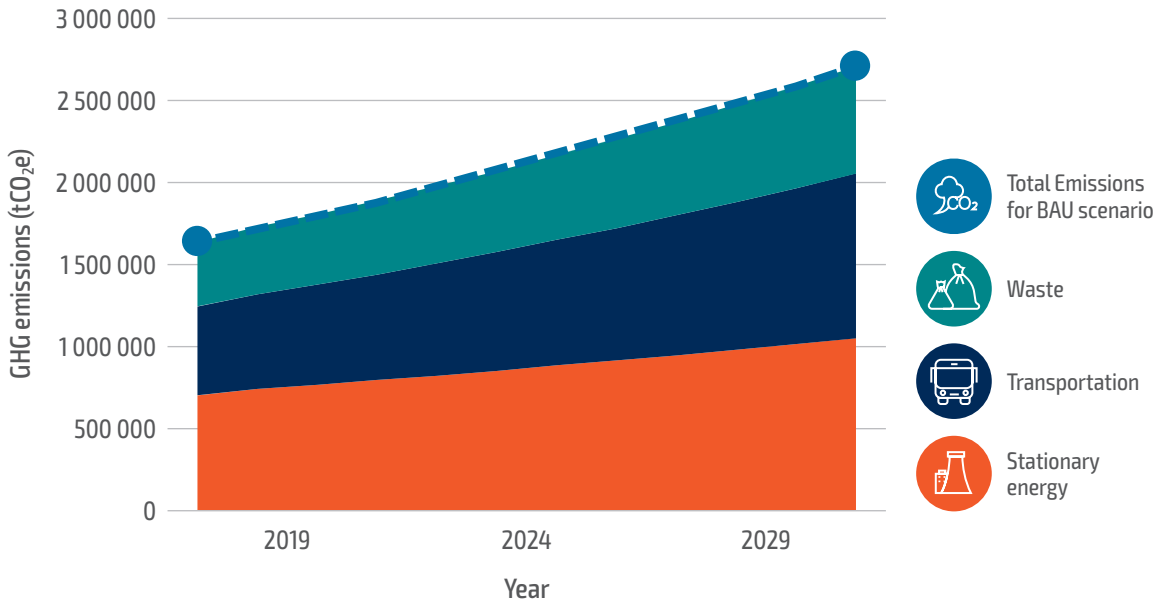


FIGURE 11: Estimated GHG emissions for Nakuru County from 2019 to 2030 under a BAU scenario

In alignment with Kenya's national climate change mitigation targets, the mitigation target setting process for Nakuru County uses the BAU scenario as a basis for developing targets for 2030.

4.1.2 Overarching climate change mitigation vision and target

The long-term mitigation vision of Nakuru County formulated in line with the national and international policy environment is as follows:

> ***A low carbon county that supports sustainable development by 2030.***

In addition to the qualitative vision, Nakuru County has set an overall county-wide target to reduce GHG emissions incorporated in the BEI and projected in the BAU scenario. The county-wide target is as follows:

> ***Nakuru County seeks to reduce GHG emissions by 33% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions of at least 6% compared to the BAU scenario from domestic resources, while the remaining 27% is conditional on external support.***

This overall target of 33% is equivalent to a reduction of 890 963 tCO_2e compared to the BAU scenario by 2030. If this target is achieved, GHG emissions in Nakuru County will be limited to 1 827 730 tCO_2e in 2030 **(Figure 12)**. The unconditional target of 6% is equivalent to a reduction of 168 101 tCO_2e compared to the BAU scenario by 2030. If this target is achieved, GHG emissions in Nakuru County will be limited to 2 550 592 tCO_2e in 2030 **(Figure 12)**.

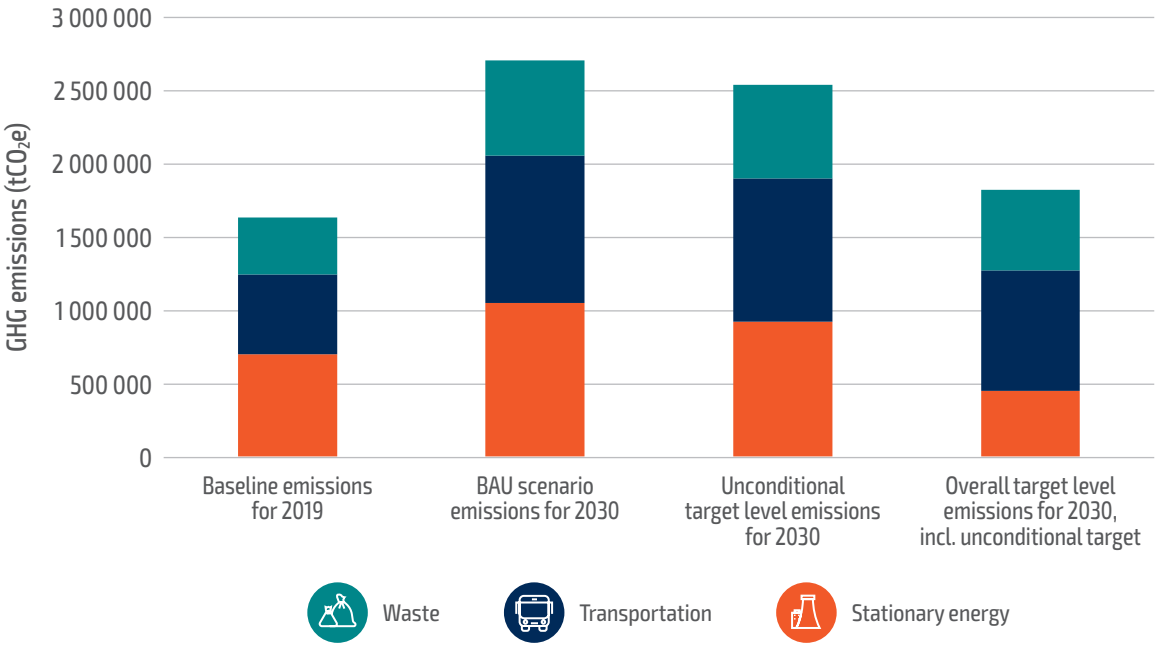


FIGURE 12: Baseline emissions for 2019, and emissions under the BAU and target scenarios for Nakuru County in 2030

In addition to this overall target, specific targets have been set for each sector included in the BEI.

4.1.3 Mitigation sector targets

Stationary energy sector target

> ***Nakuru County seeks to reduce GHG emissions from the stationary energy sector by 57.5% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the stationary energy sector of at least 12% compared to the BAU scenario from domestic resources, while the remaining 45.5% is conditional on external support.***

The targets for the stationary energy sector are aligned with the overall targets for the energy demand and electricity generation sectors in Kenya's NCCAP 2018–2022, and the proportion of the national NDC target that is unconditional. If the overall target of 57.5% is achieved, it is equivalent to a reduction in GHG emissions of 605 751 tCO_2e compared to the BAU scenario in 2030 **(Table 4; Figure 13)**.

TABLE 4: Mitigation targets for the stationary energy sector in Nakuru County

Baseline emissions for 2019 (tCO_2e)	**703 860**	**RATIONALE**
BAU scenario emissions for 2030 (tCO_2e)	**1 053 480**	**Aligned with unconditional and overall targets in Kenya's NDC and NCCAP 2018–2022 for the energy demand and electricity generation sectors.**
Unconditional target reduction off BAU scenario by 2030 (%)	**12%**	
Unconditional target scenario emissions for 2030 (tCO_2e)	**927 062**	
Overall target reduction off BAU scenario by 2030 (%)	**57.5%**	
Overall target scenario emissions for 2030 (tCO_2e)	**447 729**	

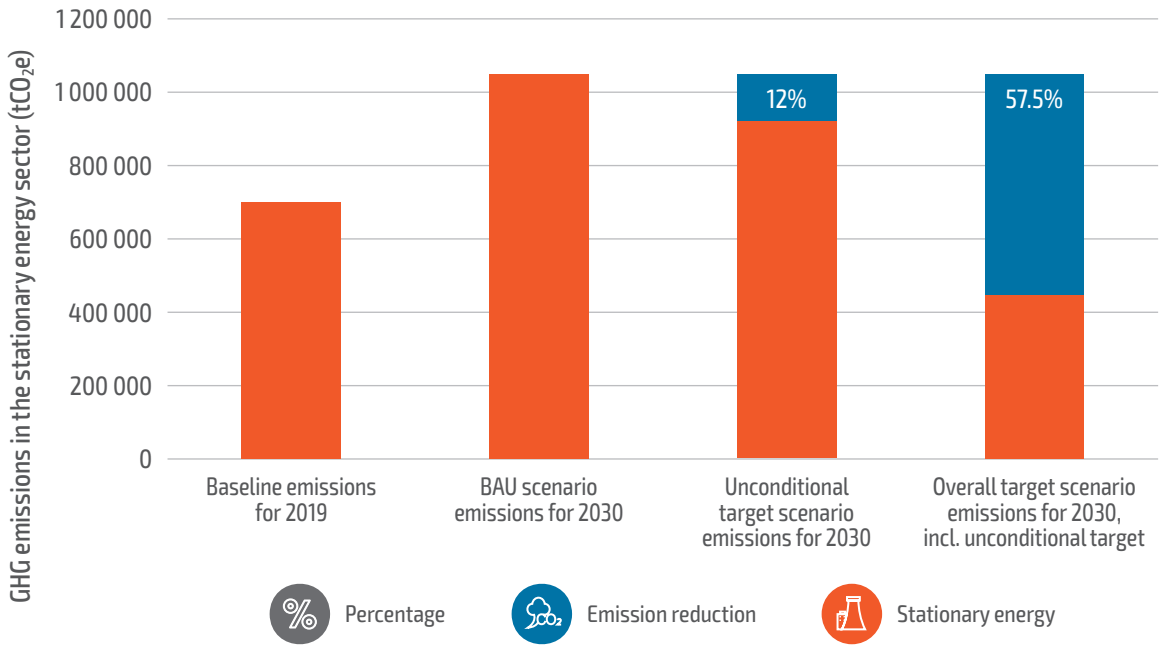


FIGURE 13: GHG emissions from the stationary energy sector in Nakuru County in the 2019 baseline, BAU and target scenarios

Transportation sector target

> ***Nakuru County seeks to reduce GHG emissions from the transportation sector by 17.6% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the transportation sector of at least 2.7% compared to the BAU scenario from domestic resources, while the remaining 14.9% is conditional on external support.***

The overall target for the transportation sector in Nakuru County is aligned with the overall target for the transportation sector in Kenya's NCCAP. The unconditional component of the transportation sector target for Nakuru County is proportionally slightly lower than the unconditional component of Kenya's NDC. This is because the County Government of Nakuru has limited ability to implement actions relating to the national road and standard gauge railway that run through the county which are a major driver of emissions and a critical component of a sustainable transport system, respectively **(Table 5; Figure 14)**.

TABLE 5: Mitigation targets for the transportation sector in Nakuru County

Baseline emissions for 2019 (tCO_2e)	**544 749**	**RATIONALE**
BAU scenario emissions for 2030 (tCO_2e)	**1 009 769**	**Aligned with overall targets in NCCAP 2018–2022 for the transportation sector. Slightly less ambitious than NDC for unconditional target due to limited scope for county government to influence planning on national roads and railways.**
Unconditional target reduction off BAU scenario by 2030 (%)	**2.7%**	
Unconditional target scenario emissions for 2030 (tCO_2e)	**982 505**	
Overall target reduction off BAU scenario by 2030 (%)	**17.6%**	
Overall target scenario emissions for 2030 (tCO_2e)	**832 050**	

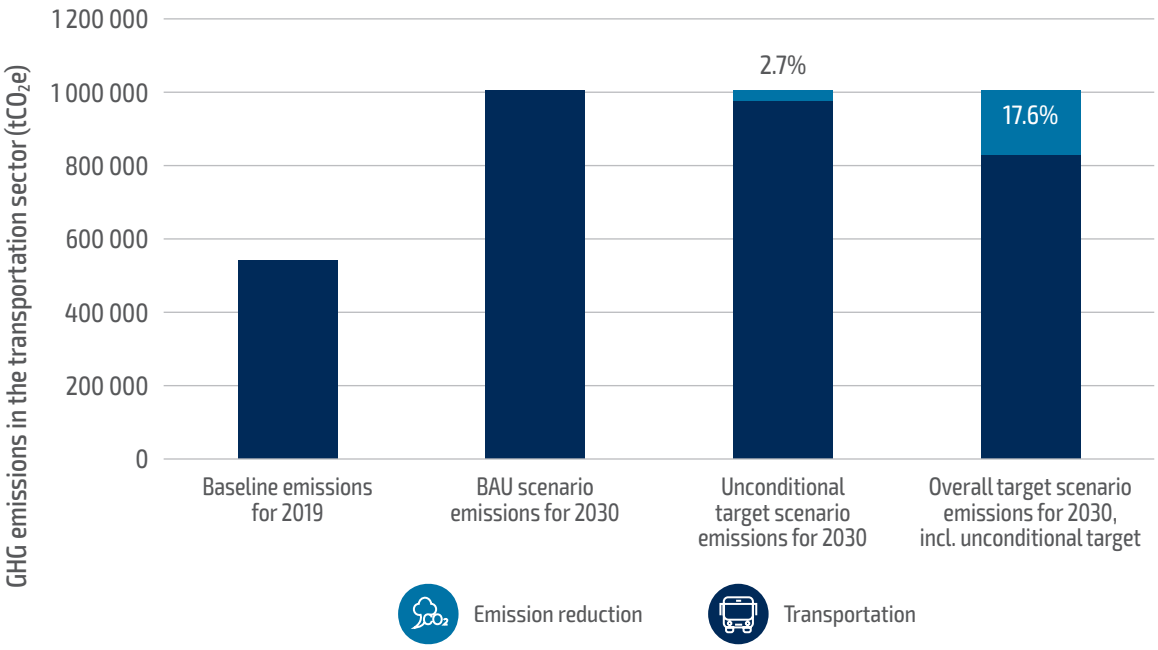


FIGURE 14: GHG emissions from the transportation sector in Nakuru County in the 2019 baseline, BAU and target scenarios

Waste sector target

> ***Nakuru County seeks to reduce GHG emissions from the waste sector by 16.4% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the waste sector of at least 2.2% compared to the BAU scenario from domestic resources, while the remaining 14.2% is conditional on external support.***

The unconditional target for the waste sector in Nakuru County is aligned with the targets for the waste sector in Kenya's NCCAP 2018–2022 and NDC. The conditional component of the target, and therefore the overall target, is substantially more ambitious than the national waste sector target in the NCCAP 2018–2022. This is because Nakuru County is pioneering sustainable and low-emission waste management systems and the County Government of Nakuru, with external support, is able to be more ambitious than the national waste management targets **(Table 6; Figure 15)**.

TABLE 6: Mitigation targets for the waste sector in Nakuru County

Baseline emissions for 2019 (tCO_2e)	**394 258**	**RATIONALE**
BAU scenario emissions for 2030 (tCO_2e)	**655 444**	**Aligned with unconditional targets in NCCAP 2018–2022 and NDC for the waste sector. More ambitious than NCCAP for overall target, due to proactive sustainable waste management approach of county government.**
Unconditional target reduction off BAU scenario by 2030 (%)	**2.2%**	
Unconditional target scenario emissions for 2030 (tCO_2e)	**641 024**	
Overall target reduction off BAU scenario by 2030 (%)	**16.4%**	
Overall target scenario emissions for 2030 (tCO_2e)	**547 951**	

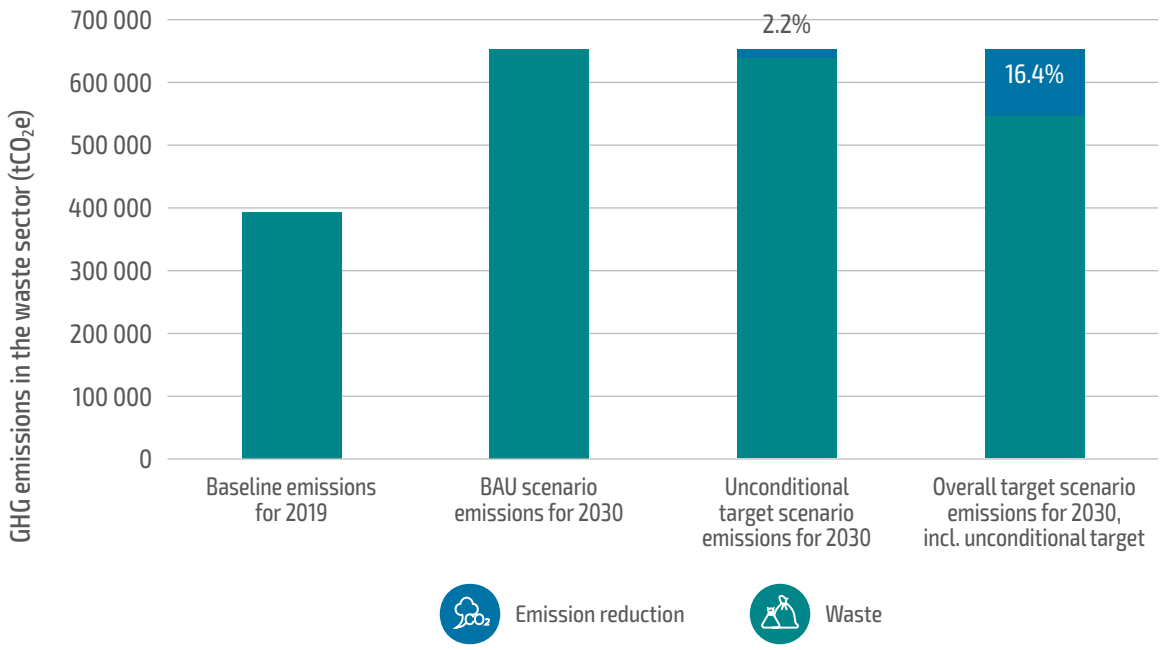


FIGURE 15: GHG emissions from the waste sector in Nakuru County in the 2019 baseline, BAU and target scenarios

4.2 Adaptation targets

Following the completion and validation of the Nakuru County RVA, consultations with stakeholders were held to prioritise sectors to focus on, set an overarching adaptation vision, and sector-specific targets for the key sectors. The consultations took the form of a hybrid participatory and virtual workshop, held on 15 June 2021. After the workshop, an additional validation meeting was held on 14 September 2021 with high-level representatives of the relevant sector departments in the County Government of Nakuru to validate the overarching adaptation vision and sectoral targets.

SECTORS PRIORITISED FOR TARGETS AND ADAPTATION ACTIONS

Agriculture, livestock and fisheries

Water

Forestry

Tourism

Prior to setting adaptation targets for key sectors, it was necessary to identify the sectors that are considered the highest priority and key for setting targets and adaptation actions, in order to be most effective in building resilience to the impacts of climate change. The sectors identified through the development of the RVA as being the most affected by current and future climate hazards are food and agriculture; water supply and sanitation; environment, biodiversity and forestry; and land use planning. Combining the results of the RVA, NCCCAP 2018–2022 and the National Adaptation Plan (2015), and considering the existing sectors in Nakuru County, stakeholders agreed that the sectors that should be prioritised for targets and adaptation actions are:

- Agriculture, livestock and fisheries;
- Water;
- Forestry; and
- Tourism.

4.2.1 Overarching climate change adaptation vision

The overarching adaptation vision for Nakuru County (base year 2021) that was adopted reads as follows:

> ***A climate-resilient county with sustainable ecosystems and livelihoods by the year 2030.***

This vision, which was formulated by workshop participants and subsequently validated by high-level representatives of the County Government of Nakuru, represents the desired future state of Nakuru County and its local government with respect to resilience to the impacts of climate change. It is aligned with the intention of Kenya's NDC (2020) and NAP (2015), as well as the NCCCAP 2018–2022. The base year for implementation of this adaptation vision is 2021 and the year by which to achieve this vision is 2030, aligned with Kenya's NDC target date.

4.2.2 Adaptation sector targets

To support the achievement of the overarching adaptation vision, Nakuru County developed specific targets for each of the four key sectors prioritised previously in the adaptation planning process. The sectoral targets developed by the county are as follows:

Agriculture, livestock and fisheries target

> ***By 2030, ensure that at least 70% of crop, livestock and fishery farmers and other stakeholders are using climate-resilient practices including water-harvesting techniques and nature-based enterprises (e.g. agroforestry).***

This target is well aligned with the targets for the agriculture sector in Kenya's updated NDC (2020), specifically: *"Build resilience of the agriculture systems through sustainable management of land, soil, water and other natural resources"* and *"Mainstream climate-smart agriculture towards increased productivity"*. It is also aligned with the target *"Increase food, nutrition, and income security through enhanced productivity and resilience of agricultural systems and value chains"* in the NCCAP Volume II, ATAR (2018). Finally, this target is aligned with the goal of "*Enhanced food security*" in the NCCCAP (2018).

Water targets

During the target validation meeting, it was decided that two targets would be more appropriate for the water sector, as access to clean water (or water supply) and sanitation are two distinct services that require different actions in order to achieve the targets. These two targets are outlined below:

Access to clean water target:

> ***By 2030, increase access to clean water to 80% of the population.***

Currently, the county has 66% coverage of clean water supply, thus 80% was considered by workshop participants to be a realistic target to achieve by 2030. This was further supported in the subsequent validation meeting where it was noted that coverage of clean water supply in Nakuru County increases by an average of 5% annually. This target is aligned with the goal of *"Enhanced water security"* in the NCCCAP (2018) and the target *"Enhance the resilience of the water resources by ensuring adequate access to, and efficient use of, water for agriculture, manufacturing, domestic, wildlife, and other uses"* in the NCCAP Volume II, ATAR (2018). It is also in line with the objective in the NDC relating to improved water storage, as improved storage will improve access to clean water for the population.

Sanitation target:

> ***By 2030, increase access to sanitation to 100% of the population.***

Current access to improved sanitation[5] in Nakuru County is relatively low. Only about 25% of Nakuru County's two million inhabitants have access to improved sanitation; 30% use shared sanitation facilities and 42% use unimproved sanitation facilities (County Government of Nakuru, 2019). Despite this, the vision in the Nakuru Countywide Sanitation Strategy (2019) is for universal access to sanitation to be achieved by 2030. This aligns with the national target in the National Water Master Plan 2030 of "*Increase coverage rate of improved sanitation to 100% (improve sanitation by sewerage system and on-site treatment facilities)".* Therefore, the SEACAP target to increase access to sanitation to 100% of Nakuru County's population is aligned with existing local and national targets.

Forestry target

> ***By 2030, increase tree cover in Nakuru County to 75 000 ha.***

The county currently has approximately 68 000 ha of gazetted forests (currently 9% of total land cover in the county). The target adopted by the county represents an increase to 10% of total land cover, which directly aligns with the national target to increase forest/tree cover to at least 10% on public, private and community lands, as stated in the NCCAP Volume II, ATAR (2018) and the National Forest Programme 2016–2030.

Tourism target

> ***By 2030, ensure that the Nakuru County tourism sector promotes ecotourism and sustainability in 80% of its tourism destinations.***

This target is aligned with the targets for the tourism sector in Kenya's updated NDC (2020), specifically*: "Develop climate-resilient action plans for the sector",* as well as the targets of *"Enhance the resilience of tourist attractions and tourism infrastructure"* and *"Enhance the resilience of wildlife, habitats and ecosystems that sustain wildlife"* in the NCCAP Volume II, ATAR (2018). It is also aligned with the goal of *"Ecosystem conservation for sustainable economic development"* in the NCCCAP (2018).

For further detail on how the targets were set for the Adaptation pillar of the Nakuru County SEACAP, please refer to the Nakuru County Adaptation Target Setting Report.

5 An improved sanitation facility is one that hygienically separates human excreta from human contact. They include: flush/pour flush to pipe sewer system, septic tank, pit latrine; ventilated improved pit latrines; pit latrine with a slab; composing toilet (Source: JMP 2015 for MDG monitoring).

5 Climate change mitigation and adaptation actions

This section outlines the actions identified by the county to enable it to achieve its climate change mitigation and adaptation visions and respective sectoral targets. Once the mitigation and adaptation actions were developed for each sector target, stakeholders selected 1–4 actions to be prioritised for each sector-specific target. These actions were prioritised because of their contributions to achieving the sectoral targets, their potential to directly reduce GHG emissions and/or address climate hazards affecting each sector, their feasibility, as well as the numerous co-benefits offered by each action.

In addition to descriptions of each action and rationales for those that have been prioritised, the co-benefits, synergies and trade-offs of implementing each adaptation or mitigation action have also been elaborated upon in this section. Additional information on the actions is provided in **Annex 1** and **Annex 2** respectively, as required by CoM SSA, to support county planning in the future.

5.1 Mitigation actions

Mitigation actions (based on existing local and national strategies and plans) to reach the mitigation sectoral targets set for Nakuru County were formulated during a participatory workshop on 18 November 2021. Twenty emissions reduction actions, covering the stationary energy, transportation, and waste sectors, were identified by the county to be implemented by 2030. These are outlined below with further details included in **Table 7**. Of the 20 actions identified, 14 were prioritised. The actions identified here are well aligned with those included in the County Energy Plan, under development at the time of writing.

TABLE 7: Descriptions, impact, co-benefits, trade-offs and synergies associated with actions to reduce GHG emissions in Nakuru County (prioritised actions shown in grey)

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
STATIONARY ENERGY TARGET	**Nakuru County seeks to reduce GHG emissions from the stationary energy sector by 57.5% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the stationary energy sector of at least 12% compared to the BAU scenario from domestic resources, while the remaining 45.5% is conditional on external support.**						
Develop and enforce an Energy Act and regulations on energy efficiency within Nakuru County by 2027	Under this action, the County Government of Nakuru (CGN) plans to develop a strong institutional and regulatory framework to improve energy efficiency across the county. This will be done by developing, passing and enforcing an energy policy, an Energy Act and regulations on energy efficiency at the county level by 2027. This action will be closely aligned with the County Energy Plan, under development at the time of writing. The regulatory framework will consider energy efficiency across sectors, at household level, in institutional and commercial facilities, and in industrial processes.	Improving energy efficiency is a cost-effective way to reduce GHG emissions with considerable co-benefits in terms of reducing energy costs. In many cases, energy efficiency can be improved without substantial upfront investment, and can be done at a small or large scale. Many energy-efficient technologies are also readily available. These actions can increase capacity for efficient energy use practices through the awareness-raising components.	Estimated energy savings through three energy efficiency actions: 41 900 MWh per year Estimated GHG emission reductions from three energy efficiency actions: 3 530 tCO_2e per year	• Reduced energy costs for households, businesses and institutions • Increased knowledge of energy efficiency	• Challenges in monitoring progress on energy efficiency	• Alignment with SDGs 7, 9 and 11 • Alignment with actions to increase energy efficiency and promote green building principles under the stationary energy sector and the county's priorities for sustainable energy access	Access to Energy
Undertake regular energy audits on 2 000 buildings and facilities within the county	Under this action, the CGN aims to improve efficient use of electricity within its own facilities, as well as in commercial, institutional and residential buildings. This will be done by undertaking energy audits on 2 000 buildings and facilities within the county in collaboration with the Energy and Petroleum Regulatory Authority (EPRA) and promoting uptake of energy audits for other commercial and institutional buildings. The energy audits will highlight areas where energy-efficiency improvements can be made in these buildings, and contribute to behaviour change and the uptake of more energy-efficient technologies.			• Reduced energy costs for businesses and institutions • Increased employment opportunities through energy audits • Increased knowledge of sustainable energy and energy efficiency	• Challenges in monitoring and data availability • Requirement for ongoing maintenance • Potential rebound effect of increasing electricity use	• Alignment with SDGs 7 and 9 • Alignment with actions to increase energy efficiency in the stationary energy sector, and the county's priorities for sustainable energy access	Not applicable
Install energy-efficient lighting in commercial, institutional and residential buildings	Under this action, Nakuru County aims to promote the uptake of energy-efficient LED lights and other energy efficient technologies. This will be done through the replacement of conventional lightbulbs with energy-saving LEDs in CGN buildings and facilities to reduce resources spent on energy bills. In addition to this and the previous actions, the targets of improving energy efficiency by 20% in institutional and commercial buildings and facilities and by 15% in households will be further pursued through awareness-raising and educational activities, including community meetings, exhibitions, and awareness-raising materials. This will be supported through the creation of the energy centres.			• Reduced energy costs for households, businesses and institutions • Increased uptake of cleaner energy technologies	• Challenges in monitoring progress in energy efficiency • Requirement for ongoing maintenance • Uptake to date has been slow • Potential rebound effect of increasing electricity use	• Alignment with SDG 7, 8 and 9 • Alignment with actions to increase energy efficiency and raise public awareness under the stationary energy sector, and the county's priorities for sustainable energy access	Access to Energy

6 The estimates of mitigation impact have been developed based on the available information at the time of writing, in alignment with the reporting requirements of the CoM SSA initiative. However, as a result of limited data availability, there are many uncertainties. They are approximations of GHG emissions reduction, energy generation and energy savings, and should not be considered precise calculations. Full details of the methods for these estimations are provided in the Nakuru County Mitigation Action Planning Report.

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Develop small-scale biogas production facilities to promote clean cooking in Nakuru County in partnership with the private sector	Under this action, the CGN will support the development of small-scale biogas production facilities to encourage uptake in 25% of households in the county, focusing on low-income households in rural areas, such as Rongai and Kiambogo. This will be done through partnerships with the private sector to make biogas generation equipment more accessible and through the development of innovative mechanisms to provide finance to households and consumers to use clean energy technologies. In this way, the action aims to improve the affordability and access to clean cooking and lighting for households. The uptake of biogas production and its use as a cooking fuel will be promoted through public awareness-raising and community engagement undertaken through the energy centres.	Improving access to clean cooking at household level is well aligned with county-level, national and international priorities across sectors. This action can benefit most households in the county as there is a need to move away from traditional cooking methods that lead to bad air quality, high energy costs, degraded ecosystems and large health risks. Biogas production in particular is aligned with circular economy and waste management priorities as well as energy access and climate change adaptation.	Estimated renewable energy generation: 67 200 MWh per year Estimated GHG emission reduction: 101 000 tCO_2e This action is also expected to reduce biogenic CO_2 emissions by one million tonnes per year.	• Improved air quality • Reduced risk of respiratory diseases • Reduced risk of fires • Reduced energy costs • Reduced deforestation and dependence on wood fuel • Reduced time spent by women and children gathering fuel wood	• Change in livelihood activities and social interactions of women collecting fuel wood • Potential increasing cost of living, where households go from gathering fuel wood to buying fuel	• Alignment with SDGs 3, 7 and 15 • Alignment with public health priorities relating to air quality • Alignment with priorities in the County Integrated Development Plan (CIDP) • Alignment with agricultural sector priorities (biogas production) • Alignment with action to encourage use of distributed renewable energy under the stationary energy sector and the county's priorities for sustainable energy access and climate change adaptation	Adaptation; Access to Energy
Create three energy centres to disseminate information and raise awareness on sustainable energy	Under this action, the County Government of Nakuru aims to establish three energy information centres in the county, at the headquarters of selected subcounties. The energy centres will be used to disseminate information and education materials relating to sustainable energy. The energy centres can also host exhibitions of sustainable energy technologies. The energy centres will be hubs for the sustainable energy transition in Nakuru County. In particular, the energy centres will be used to run awareness-raising and community engagement campaigns relating to clean cooking and lighting solutions to support the uptake of biogas as a clean cooking fuel, energy-efficient technologies and behaviours, and renewable energy technologies	This action is achievable and realistic, as it does not require large financial investments or new capacities and technologies. Improving community awareness of sustainable energy technologies and energy saving activities can influence uptake of several beneficial behavioural changes, including the use of clean cooking and energy-efficient technologies, renewable energy and the adoption of energy-efficient practices.	Not applicable	• Increased knowledge of sustainable energy among communities • Reduced environmental pollution • Improved safety of humans and wildlife	• Influencing attitudes of communities may be challenging	• Alignment with SDG 7 • Alignment with public education priorities and access to information and computer technologies (ICT) • Alignment with actions under the stationary energy sector and the county's priorities for sustainable energy access	Adaptation; Access to Energy

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Install solar photovoltaic (PV) systems on 25 county government facilities	Under this action, the County Government of Nakuru (CGN) plans to install solar photovoltaic (PV) systems to generate renewable energy on at least 25 of its buildings and facilities. The solar PV systems will supply electricity to these buildings and facilities, complementing or replacing existing electricity sources with sustainable and reliable renewable energy. In this way, the CGN will encourage uptake of solar PV in the county and reduce GHG emissions from other less sustainable energy sources in its buildings and facilities.	*Not applicable*	Estimated renewable energy generation: 215 MWh per year Estimated GHG emission reductions: 27 tCO_2e per year	• Reduced energy costs for CGN • More reliable electricity supply for government facilities • Reduced dependence on centralised electricity infrastructure	• High installation costs of RE • Potential for increasing taxes	• Alignment with public health priorities relating to air quality • Alignment with action to encourage uptake of renewable energy under the stationary energy sector and the county's priorities for sustainable energy access and climate change adaptation	Adaptation; Access to Energy
Create incentives to promote the uptake of renewable energy technologies by businesses, households and communities in Nakuru County	This action aims to promote uptake of renewable energy technologies by businesses, households and communities, with a focus on solar PV and bioenergy. It will include: • Developing a standard to require renewable energy use in new buildings, such as rooftop PV, linked to the promotion of green buildings; • Streamlining the licensing process for renewable energy sources; and • Providing incentives to private sector suppliers of distributed renewable energy (DRE) technologies to supply underserved communities. The action aims to drive the transitions to widespread uptake of DR, building on the use of solar PV at county government facilities. This will include encouraging the substitution of at least 1 200 diesel generators with solar PV as back-up electricity sources for businesses and households.	*Not applicable*	Estimated renewable energy generation: 6 190 MWh per year Estimate GHG emission reductions: 1 610 tCO_2e per year	• Increased skilled job creation and development of technical capacity • Improved air quality • Reduced noise pollution from generators • Reduced risk of respiratory diseases • Reduced dependence on centralised electricity infrastructure	• High installation costs of RE • Potential for increasing taxes	• Alignment with Sustainable Development Goals (SDGs) 7 and 8 • Promotion of bioenergy use links to efforts to promote climate-smart agriculture • Alignment with public health priorities relating to air quality • Alignment with priorities relating to increasing tree cover and ecosystem protection • Alignment with actions to promote renewable energy and increase biogas production under the stationary energy sector, as well as the county's priorities for sustainable energy access and climate change adaptation	Adaptation; Access to Energy

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Develop policies and guidelines on green buildings to encourage the use of green building technologies	This action aims to encourage the uptake of green building technologies in new and existing buildings across Nakuru County. These technologies include the use of sustainable building materials and renewable energy, and the incorporation of design features that prioritise passive lighting and ventilation and energy efficiency. Uptake of these technologies will be encouraged through the development of policies and guidelines, and through partnerships in the building sector, information sharing, exhibitions, and sensitisation on the use of green building technologies. In addition, the development of a building code and enforcement of existing regulations and standards, for example relating to solar water heating, will be prioritised. This action will be closely linked to the development of energy efficiency regulations.	*Not applicable*	*Not applicable*	• Reduced energy costs • Contributes to creating a clean and safe environment • Improved capacity for sustainable design • Improved aesthetic value of built environment	High costs of construction and retrofitting	• Alignment with SDG 9 • Alignment with the Environmental Management and Coordination Act No. 8 of 1999 (EMCA) and priorities of the National Environmental Management Authority (NEMA) • Alignment with action to strengthen regulations for energy efficiency under the stationary energy sector	Adaptation
TRANSPORT TARGET	**Nakuru County seeks to reduce GHG emissions from the transportation sector by 17.6% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the transportation sector of at least 2.7% compared to the BAU scenario from domestic resources, while the remaining 14.9% is conditional on external support.**						
Construct and/or upgrade 10 km of non-motorised transport routes in urban centres	Under this action, the CGN aims to expand uptake of non-motorised transport (NMT) by constructing/upgrading an additional 10 km of NMT pathways in major urban centres in the county. These upgraded pathways will improve access for pedestrians and cyclists, making it safer and easier for people to move around the urban centres without requiring motorised transport. This action will reduce congestion and road accidents in the urban centres by reducing the need for travel by car and motorcycle, as well as reducing GHG emissions from the transport sector. In addition to physically upgrading the NMT corridors, the action will improve the integration of NMT into transport sector development plans for the county to facilitate continued improvement of NMT facilities.	Implementation of NMT corridor upgrades in Nakuru County have already been piloted and have been highly successful thus far, having multiple co-benefits. This action is realistic and achievable, and has many synergies with other priorities in the county.	Estimated GHG emission reduction due to increased NMT: 31 tCO_2e per year	• Improved health and physical well-being of communities • Reduced air and noise pollution • Reduced risk of traffic accidents • Jobs created for construction and maintenance of facilities • Reduced cost of transport	• Possible increase in littering • Possible increase in insecurity, for example mugging • Reduced income and employment for public transport operators, for example *boda boda* drivers • Reduced revenue for county, for example through parking fees	• Alignment with SDGs 3, 9 and 11 • Alignment with public health priorities • Alignment with other actions in the transport sector, including to create green open spaces and improve parking facilities	Adaptation
Create green open spaces in the county's urban centres, including NMT corridors	Creating green open spaces in the county's urban centres offers recreational areas for public use and provides a host of benefits in terms of climate resilience and low-carbon development. It is one of the CGN's priorities and the Nyayo Gardens and the A104 corridor, among others, have already been upgraded. Under this action, greening and beautification will be expanded to include other well-used NMT corridors and along major roads, including Geoffrey Kamau Avenue in Nakuru city. The action will involve planting trees and plant beds as well as the maintenance of the green open spaces created. The aim of the action is to encourage adoption of NMT by creating safe and beautiful corridors for pedestrians and cyclists in urban centres.	Upgrading of urban green spaces, including along NMT corridors in Nakuru and Naivasha, has been ongoing over the last few years. It is well-aligned with the county priorities across several sectors and has significant co-benefits in terms of climate resilience. In addition, the implementation of this action is considered technically, financially and politically feasible.		• Increased aesthetic value of urban spaces • Reduced air pollution • Reduced urban heat island effect • Improved urban ecosystems and ecological processes	• Planting trees may increase space limitations along road verges • High maintenance costs • Possibility of malicious damage to greened spaces	• Alignment with SDG 11 • Alignment with national and county-level target of achieving 10% tree cover • Alignment with CIDP • Alignment with other transport sector actions, including to construct and improve NMT corridors	Adaptation

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Improve parking facilities on the edge of urban centres to reduce congestion	This action aims to reduce congestion caused by private vehicles in the urban centres in Nakuru County. Four park-and-ride facilities will be developed on the edge of the urban centres, from which drivers can access the centre through walking, cycling or public transport. These facilities would be strategically located to link to public transport and NMT routes. Possible locations include Mai Mai Hill, Naivasha or the Barnabas Centre, Nakuru. This action would create the opportunity to develop the park-and-ride facilities into green hubs by partnering with Nakuru and Naivasha municipalities and businesses to facilitate bicycle hire in urban centres, for example. The improved parking facilities will be accompanied by financial incentives to reduce private vehicle use in urban centres.	Decongesting the urban centres of Nakuru and Naivasha will contribute substantially to reducing GHG emissions in the transport sector, as well as realising multiple co-benefits, including improved air quality and reduced time spent in traffic. This action is well-aligned with other actions in the transport sector.	Estimated GHG emission reduction due to reduced congestion in urban centres and fewer journeys by private vehicles: 763 tCO_2e per year	• Reduced congestion and air pollution • Improved road safety for vehicles and pedestrians • Creates opportunities for small businesses related to the green hub • Improved integration in the transport sector	• Expense of developing or improving parking facilities	• Alignment with SDGs 3 and 11 • Alignment with the CIDP, Nakuru County Climate Change Action Plan, Integrated Sustainable Urban Development Plan • Alignment with other actions in the transport sector, including to upgrade NMT corridors and expand the public transport system	Not applicable
Expand the public transport system to include bus mass transport along major transit routes	This action aims to increase the capacity and efficiency of public transport systems by introducing large buses along major routes. Large 30-seater buses will be integrated into the transport system to service the busiest routes, connecting with additional routes serviced by *matatus* (minibuses), *tuk-tuks* (three-wheelers), and *boda bodas* (motorcycles). The large buses will increase the efficiency of transport along these major routes, thereby reducing congestion. This action will be informed by lessons from the bus rapid transit system in Nairobi. It would include the engagement of current transport service providers, to ensure no one is left behind. • Possible routes for bus mass transport are: • Between Nakuru city centre and Bahati • Between Naivasha and the university • Along Moi Avenue and Kenyatta Avenue, Naivasha	The inclusion of bus mass transport in the public transport system for the County will contribute to the climate-smart urban development of Nakuru as a city as well as for Naivasha. Along with the improvement of NMT corridors and decongestion of the city centres, the modal shift from single-occupancy vehicles, matatus and two- and three-wheelers will significantly improve the efficiency of passenger transport along major routes.	Estimated GHG emission reduction due to modal shift to bus mass transport: 2 400 tCO_2e per year	• Reduced congestion and air pollution • Improved integration in the transport sector • Improved road safety for vehicles and pedestrians • Potentially reduced cost of transport	• Expense of investing in buses and related infrastructure • Political difficulty of replacing matatus and other existing transport modes • Possibility of job losses for existing transport operators	• Alignment with SDGs 3 and 11 • Alignment with national and county-level priorities in the transport sector, including the NDC and NCCAP • Alignment with other actions in the transport sector, including to provide park-and-ride facilities and import and pilot electric hybrid vehicles	Not applicable

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Import and pilot the use of electric hybrid vehicles in the county fleet	The aim of this action is to initiate uptake of and transition to electric mobility in Nakuru County through piloting electric vehicles for public transport. This action will prioritise the import of electric buses, to support the integration of low-carbon and efficient bus mass transport in Nakuru County, in addition to electric minibuses (*matatus*). By replacing petrol or diesel-powered vehicles with electric ones, this action will reduce GHG emissions from the transport sector. To implement the action, the CGN will partner with the national Ministry of Transport and private sector stakeholders. As Nakuru County introduces electric vehicles into the fleet, several additional actions to support e-mobility will be considered, including developing an enabling regulatory and infrastructural environment for investment e-mobility.	*Not applicable*	*Not estimated*[7]	• Source of revenue for county government • Improved partnerships between national and county governments and with private sector actors	Capital-intensity of importing vehicles	• Alignment with Kenya's NCCAP 2018–2022 and Vision 2030 • Alignment with other actions in the transport sector, including expansion of the public transport system to include bus mass transport	Not applicable
WASTE TARGET	**Nakuru County seeks to reduce GHG emissions from the waste sector by 16.4% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the waste sector of at least 2.2% compared to the BAU scenario from domestic resources, while the remaining 14.2% is conditional on external support.**						
Upgrade three existing municipal waste disposal sites in Nakuru County by improving access roads, fencing and zoning of the tipping areas	This action aims to improve the effectiveness of waste management in Nakuru County by improving facilities and the organisation of the Gioto, Naivasha and Mai Mahiu waste disposal sites. The upgrades will include: i) improving access roads, to enable waste deliveries and recycling collectors to more easily access tipping areas and prevent disorganised dumping; ii) fencing the waste disposal sites to reduce movement of waste into the surrounding environment; and iii) zoning tipping areas to enable more effective waste sorting and recovery as well as zoned management iv) This action will enable better management of the waste disposal sites and more effective waste recovery, thereby reducing emissions from the waste sector. The upgrade of Gioto waste disposal site near Nakuru city centre is underway.	Ongoing efforts to upgrade the Gioto waste disposal site have been effective in improving organisation and recovery of waste and reducing environmental pollution outside the disposal site. While this action has cost implications, it will be less capital intensive than investments in new landfill sites, as the land is existing and designated for waste management.	Estimated GHG emission reduction from increased waste recovery: 24 100 tCO_2e per year	• Employment opportunities created for waste recovery • Improved environmental health • Improved water quality • Improved aesthetic value of environment	• Costs of upgrading waste disposal facilities • Negative impacts of waste disposal practices on ecosystems	• Alignment with SDG 3 and 11 • Alignment with Article 6 9 of the Constitution of Kenya • Alignment with priorities in the CIDP	Adaptation

7 Information required to estimate the mitigation impact of this action was not available at the time of writing.

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Establish a resource recovery centre in Nakuru County to increase waste recovery	The aim of this action is to reduce the amount of solid waste ending up in disposal sites or subject to open burning by increasing waste recovery. This action will involve empowering Nakuru Solid Waste Management Association (NASWAMA) by establishing and equipping a resource recovery centre within the county. The resource recovery centre will be integrated into the county's solid waste management system, including the collection of solid waste and existing disposal sites or the new sanitary landfill. In synergy with the other actions in the waste sector, this action will aim to reduce emissions from the waste sector by reducing the amount of waste burned, dumped and sent to landfill.	Promoting circular economy practices, including resource recovery is one of the most efficient ways to improve waste management at the local level. Involving all stakeholders along the value chain from households to businesses, industries, waste utilities and services providers is essential for developing an integrated and effective waste management system. By improving waste recovery, these actions will not only reduce GHG emissions from the waste sector, but also create economic opportunities and increase the lifespan of waste management facilities.	Estimated GHG emission reduction from increased waste recovery: 60 500 tCO_2e per year	• Economic opportunities created for valorisation of waste and circular economy activities • Increased lifespan of waste disposal sites	Cost of developing a waste recovery centre	• Alignment with SDG 8 and 12 • Alignment with Kenya's National Solid Waste Management Strategy • Alignment with Nakuru County Waste Management Act of 2021 and Waste Management Regulation of 2006 • Alignment with other actions in the waste sector to improve waste recovery	Not applicable
Organise annual public awareness-raising campaigns and incentives to increase household-level waste segregation	Increased waste segregation at household level is an important component of increasing waste recovery in Nakuru County. In partnership with private waste collection services and other waste sector stakeholders, this action aims to increase awareness of the benefits of waste segregation at household level and provide incentives (for example reduced costs for waste collection) for households to separate their waste. Annual awareness-raising campaigns will be undertaken through local media channels to provide information on the benefits of waste segregation and how to do it. By increasing the amount of waste recycled, this action will contribute to reducing GHG emissions from the waste sector.		Estimated GHG emission reduction from increased waste recovery: 55 400 tCO_2e per year	• Economic opportunities created for valorisation of waste and circular economy activities • Increased lifespan of waste disposal sites • Changed public perception towards waste as a resource	Need to change behavioural and cultural practices	• Alignment with SDG 12 • Alignment with Kenya's National Solid Waste Management Strategy • Alignment with Nakuru County Waste Management Act of 2021 and Waste Management Regulation of 2006 • Alignment with other actions in the waste sector to improve waste recovery	Not applicable
Increase briquette production from organic waste and faecal sludge to contribute to waste recovery	This action aims to increase resource recovery through waste-to-energy conversion. This will involve the production of 25 tonnes of briquettes per month from the NAWASCO wastewater treatment plant, in partnership with NAWASSCOAL. The briquettes will be produced by reusing organic waste and faecal sludge. They can be used as a cleaner and more energy-dense biomass fuel, providing an alternative energy for local industry and businesses.		*Not estimated*[8]	• Increased availability of briquettes as a clean energy source • Increased revenue for utility	Stigma relating to use of human waste for energy	• Alignment with SDG 12 • Alignment with Nakuru County Waste Management Act of 2021 and Waste Management Regulation of 2006 • Alignment with other actions in the waste sector to improve waste recovery	Access to Energy

8 Information required to estimate the mitigation impact of this action was not available at the time of writing.

MITIGATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Estimated mitigation impact[6]**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Increase the extent of the sewer network and the capacity of the wastewater treatment infrastructure to service 60% of the population of Nakuru County	Coverage of the sewer network and centralised wastewater treatment in Nakuru County is currently estimated at 27% (NAWASSCO, 2021). This action aims to increase coverage to 60% of the population by increasing the capacity of the wastewater treatment plants as well as the sewerage network. The Njoro Sewerage Treatment Plant (to the west of the Nakuru City Centre) currently has a capacity of 9 600 m^3 per day, which is ~45% utilised. The sewer network extends approximately 200 km across Nakuru town. Increasing the extent of the sewer network and capacity of the sewerage treatment plant would reduce GHG emissions from untreated wastewater and increase the efficiency of Nakuru's wastewater treatment system.	This action is aligned with existing targets and priorities in the sanitation and public health sectors in Nakuru County as well as climate change adaptation priorities. Increasing wastewater treatment coverage will not only reduce GHG emissions from the waste sector, but also reduce public health risks and enable the effective treatment and reuse of effluent.	Estimated GHG emission reduction: 13 300 tCO_2e	• Improved environmental health and reduced risk of waterborne diseases • Increased availability of recycled water, for example for irrigation and food production	Costs associated with upgrading wastewater treatment plants and expanding the sewer network	• Alignment with SDGs 3, 6 and 9 • Alignment with Kenya's Water Act of 2016 • Alignment with Nakuru County Sanitation Policy and public health priorities • Alignment with other actions in the waste sector, to increase waste recovery and actions under the Adaptation pillar to improve sanitation	Adaptation
Develop a sanitary landfill and waste recovery facility at Gilgil	Under this action, the CGN aims to establish the county's first sanitary landfill site in Gilgil, a town between Nakuru and Naivasha. The county will aim to mobilise resources for the development of the landfill and waste recovery site in partnership with the private sector and national government. The sound environmental management of waste through a sanitary landfill will reduce GHG emissions and the production of Unintentionally Produced Persistent Organic Pollutants (UPOPs) from the waste sector by reducing open burning and dumping of waste and enabling waste recovery and methane capture. In addition, centralising waste management at the landfill site will enable the creation of economic opportunities related to the recovery, recycling and reuse of materials.	*Not applicable*	Estimated GHG emission reduction: 21 100 tCO_2e per year	• Reduced land pollution from dumping • Reduced air pollution from open burning • Reduced water pollution from leeching • Employment creation for waste recovery and landfill management • Potential for energy generation from methane	• High cost of developing sanitary landfill • Need to rehabilitate land before any other use • Political challenges	• Alignment with SDGs 3, 9 and 11 • Alignment with the CIDP • Alignment with Kenya's National Solid Waste Management Strategy and Nakuru County's Waste Management priorities • Alignment with other actions in the waste sector, including actions to improve sorting and recovery of waste	Not applicable
Strengthen enforcement of existing laws and regulations on waste management in Nakuru County	This action will aim to strengthen enforcement and improve effectiveness of the waste management laws and regulations in the Nakuru County Waste Management Act of 2021, the Nakuru County Water and Sanitation Act of 2021 and the Nakuru County Climate Change Act of 2021. This will be done by building capacity within the County Government of Nakuru on the existing laws, policies and regulations, and their enforcement. In addition, the county will seek to enhance partnerships and collaboration with other waste sector stakeholders to improve compliance with the laws and regulations.	*Not applicable*	*Not applicable*	• Improved environmental health and reduced health risks • Cleaner environment • Improved compliance and reduced number of convictions	• Public resistance to enforcement of regulations • Political resistance	• Alignment with SDG 3, 11 and 12 • Alignment with Kenya's EMCA of 1999 • Alignment with Nakuru County's Waste Management Act of 2021; Climate Change Act of 2021; and Water and Sanitation Act of 2021	Adaptation

For further detail on how the actions were set for the Mitigation pillar for the Nakuru County SEACAP, please refer to the Nakuru County Mitigation Action Report.

5.2 Adaptation actions

Adaptation actions (based on existing national and county-level strategies and plans) were developed during a technical hybrid workshop held on 22 September 2021 with participants from various sectors and departments within the County Government of Nakuru, non-governmental organisations and universities, most of whom were involved since the beginning of the SEACAP development process. Actions were formulated to contribute directly to achieving the sectoral targets set during the previous step of the process. After the workshop, a smaller group of high-level representatives from relevant sector departments in the County Government of Nakuru were engaged in a validation meeting on 18 November 2021 to further refine action titles and descriptions and develop further details for each of the adaptation actions considered most relevant and feasible for the county.

> ACTIONS WERE FORMULATED TO CONTRIBUTE DIRECTLY TO ACHIEVING THE SECTORAL TARGETS SET DURING THE PREVIOUS STEP OF THE PROCESS.

Stakeholders identified and described 15 adaptation actions (three per sectoral target) that the county needs to implement to contribute to achieving the sector-specific targets previously identified. Each of the actions are aligned with Kenya's NCCAP 2018–2022, the NCCCAP 2018–2022, as well as a number of sector-specific plans. The actions are outlined in **Table 8**.

For further detail on how the actions were developed for the Adaptation pillar for the Nakuru County SEACAP, please refer to the Nakuru County Adaptation Action Report.

TABLE 8: Descriptions, impact, co-benefits, trade-offs and synergies associated with actions to reduce the impacts of climate change in Nakuru County (prioritised actions shown in grey)

ADAPTATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Climate hazards addressed**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
AGRICULTURE, LIVESTOCK AND FISHERIES SECTOR TARGET	**By 2030, ensure that at least 70% of crop, livestock and fishery farmers and other stakeholders are using climate-resilient practices including water-harvesting techniques and nature-based enterprises (e.g. agroforestry).**						
Desilt 60 water pans and construct 25 new water pans in Naivasha and Rongai subcounties by 2030 to promote water harvesting, conservation and utilisation for domestic and agricultural use in Nakuru County	Currently, there are 95 private and public water pans in Nakuru County, 60 of which require desilting to function effectively. In addition, 25 more water pans with a volume of 30 000 m^3 should be installed in Naivasha and Rongai subcounties by 2030. This action will promote water harvesting, water storage and efficient utilisation for domestic and agricultural use. It will help to ensure that at least 70% of farmers are practising water-harvesting techniques, thereby increasing food security.	This action will directly mitigate against drought and river flooding, which affect many farms in Nakuru County, thereby increasing the resilience of the agriculture sector to the impacts of climate change. Water pans address both water shortages and flooding, as they reduce flooding locally by collecting runoff water, while also extending water availability through the dry season. In addition, it is an action that has already been undertaken in some areas in the county, and thus is definitely feasible.	• Drought • Flash/surface floods • River floods • Rainstorms	• Improved access to water • Improved income • Improved food security • Mitigated flooding, drought and river floods	None identified	National Climate Change Action Plan (NCCAP, 2018) – *"Promote water harvesting, water storage, soil moisture conservation, climate-smart irrigation infrastructure, and efficient water use"* Nakuru County Climate Change Action Plan (NCCCAP, 2018) – *"Promote innovative water-harvesting techniques"*	Not applicable
Train 70% of smallholder farmers and pastoralists in Nakuru County on how to adopt appropriate technologies in fodder production and animal husbandry by 2030	This action aims to build technical capacity of smallholder farmers and pastoralists in Nakuru County to adopt and implement appropriate technologies in fodder production, such as hydroponics; breeding and selection technologies, and animal husbandry, such as AI services and embryo transplants by 2030. Farmers should be trained on feed conservatism, and drought-tolerant pastures and fodder should be introduced. This action will ensure that at least 70% of farmers are adopting these technologies.	*Not applicable*	• Drought • Disease	• Reduced vulnerability of livestock farmers • Improved food security	None identified	NCCCAP (2018) – "Investing in production and storage of drought-resistant fodder crops"	Not applicable
Train 70% of fish farmers in Nakuru County on how to adopt sustainable modern fish farming technologies by 2030	Climate change has resulted in drought, forcing a shift in fish farming in Nakuru County from traditional fish farming to climate-smart methods. Aquaponic systems use 90% less water than traditional farming methods. The action will empower youth, women and other vulnerable groups to adopt sustainable modern fish farming technologies such as recirculating aquaculture systems and adoption of aquaponic systems in Nakuru County by 2030. In addition, there should be distribution of fingerlings, fish feeds and liners for demos. This action will ensure that 70% of fish farmers are adopting and practising these systems for water conservation and food security.	*Not applicable*	• Drought	• Increased sense of ownership and empowerment • Improved income • Increased water conservation • Improved food security • Increased biodiversity	Initial cost is high Not many crops can be grown in aquaponics High energy consumption	NCCAP (2018) – "Promoting the up-scaling of climate-resilient strategies/technologies in fisheries and, climate-resilient fish species" NCCCAP (2018) – "Adoption of sustainable modern fish farming technologies"	Not applicable

ADAPTATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Climate hazards addressed**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
ACCESS TO CLEAN WATER SECTOR TARGET	**By 2030, increase access to clean water to 80% of the population.**						
Map all community water sources in Nakuru County by 2030, including springs, boreholes, pans, dams and shallow wells	Currently, Nakuru County has 66% coverage of clean water supply, with this figure increasing by roughly 5% per year. This action aims to contribute towards increasing clean water availability to 80% of the population by 2030. This will be achieved through the construction and maintenance of safe water storage containers, protection of the water catchment areas and community water sources, and enforcement of the Nakuru County Public Health and Sanitation Act on access to clean water and other regulations. The action will also ensure that spatial planning of wetlands and water catchments will take place to facilitate planning and implementation. The County Government of Nakuru have an ongoing waterworks programme which is using GIS to understand where water sources are located in different catchments, how they are being used, and whether they are being depleted. This action will contribute to this programme by ensuring all community water sources are mapped and protected by 2030 to ensure availability of water sources for future use.	Around 32% of the population is estimated to get their water from springs, wells or boreholes, some of which are unprotected and are categorised as unimproved drinking water sources, resulting in the spread of waterborne diseases that are exacerbated by flooding caused by climate change. Mapping these water sources will enable the county to protect them and ensure that the population has access to clean water. This contributes to ensuring the health of vulnerable groups in rural areas. This action is a priority as it will contribute to the target of access to clean water for 80% of the population (a human right), while preventing the spread of waterborne diseases.	• Drought • Waterborne diseases	• Enhanced understanding of water resources • Improved water resource management • Reduced exploitation of water catchment areas • Quantified amount of water available for abstraction	Conflict with communities on reclamation of encroached catchment areas	NCCAP (2018) – *"Climate-proof the construction and maintenance of at least 12 and at most 36 multipurpose dams, small dams, water pans, and in situ water harvesting and storage structures countrywide by June 2023"* NCCCAP (2018) – *"Promote access to safe water for marginalised groups"* Kenya National Water Master Plan 2030 (NWMP) – *"All water resources are managed, regulated and conserved in an effective and efficient manner by involving the stakeholders, guaranteeing sustained access to water and equitable allocation of water while ensuring environmental sustainability"*	Not applicable
Reduce water losses by 15% by 2030 through replacement of existing dilapidated water infrastructure with advanced technologies including HDPE pipes and smart meters and update current environmental regulations	Currently, high water wastage in Nakuru County is a result of physical losses from dilapidated water infrastructure, apparent losses from illegal connections and vandalism by households. To reduce this, replacement of the dilapidated infrastructure and support should take place, and the capacity of communities must be strengthened to reduce illegal water use. This action will result in the reduction of water losses by 15% by 2030.	*Not applicable*	• Drought • Waterborne diseases	• Increased revenue for service expansion • Increased water supplied • Easier access to supplied water	Water supply disruption during implementation	NCCAP (2018) – *"Reduce water wastage and non-revenue water (unbilled and unaccounted for) from the current 43% to 20%, by June 2023"*	Not applicable
Introduce water filters and water treatment tablets to 80% of the population by 2030 to improve access to safe water storage and treatment methods	In the Rift Valley Catchment Area, which includes the Nakuru area, around 40% of the population is estimated to get their water from unimproved drinking water sources that have not been properly treated. This results in high incidences of preventable waterborne diseases. This action will ensure that households in Nakuru County have access to safe water storage and treatment methods and will reduce the spread of waterborne diseases.	*Not applicable*	• Drought • Waterborne diseases	• Increased access to safe water for marginalised groups • Reduced incidence of waterborne diseases	None identified	NCCAP (2018) – *"Increase to 2 000 the number of annual climate-proofed water harvesting/storage infrastructure from 700"*	Not applicable

ADAPTATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Climate hazards addressed**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
SANITATION SECTOR TARGET	**By 2030, increase access to sanitation to 100% of the population.**						
Support all rural villages in Nakuru County with achieving "Open Defecation Free (ODF)" status by 2030, including follow-ups, claims, verification, certification and celebration of ODF villages	As of 2019, only 29.7% and 21% of the urban and rural populations in Nakuru County respectively use improved sanitation facilities, with sewerage coverage estimated at only 3.4%. Around 1.8% of Nakuru County's population still defecates in the open. As a result, water- and sanitation-related diseases such as diarrhoea and cholera continue to pose a great challenge to the county. The county has so far achieved the certification of 507 villages as Open Defecation Free (ODF), with 1 484 villages remaining. This action will upscale the number of villages achieving ODF status, aiming to increase access to sanitation to 100% of the population by 2030. This will improve hygiene standards, enhance social dignity and reduce the economic burden in accessing healthcare by reducing the prevalence of waterborne diseases.	Waterborne diseases are ranked among the top five diseases in Nakuru County and are exacerbated by climate change related flooding. They are also preventable with improved sanitation. One aspect of the vision in the Nakuru Countywide Strategic Sanitation Plan is for open defecation to be eliminated and for waterborne diseases to be minimised in Nakuru County by 2030. It is estimated (as of 2019) that Nakuru County loses about KES 978 million per year due to poor sanitation (Nakuru Countywide Strategic Sanitation Plan, 2019), which is likely to increase with climate change induced flooding. To address these problems, this action was considered a priority.	Waterborne diseases	• Improved hygiene standards • Reduced incidence of waterborne diseases • Enhanced social dignity • Reduced economic burden in accessing healthcare	There might be some expectations for payments/ subsidies	Aligns with action to improve sanitation under the Mitigation pillar Kenya NWMP 2030 – *"Install improved on-site treatment facilities for remaining population not covered by* sewerage systems" Kenya Environmental Sanitation and Hygiene Policy 2016–2030 – *"aims to* make Kenya Open Defecation Free by 2020"	Mitigation
Establish at least five new sewage/decentralised treatment facilities in major urban and peri-urban areas in Gilgil, Subukia, Njoro, Elburgon and Bahati by 2030	Currently, the sanitation system is old and dilapidated and inadequate for the growing population, resulting in frequent blocks and leakages. There are also a limited number of off-site treatment facilities – there are four small-scale wastewater treatment plants in Nakuru, Naivasha, and Molo – and only around 10% of the urban population is covered by sewerage systems. This action would result in the construction of at least five simplified sewer systems and the connection of households to the main sewer system. In addition, the capacities of existing wastewater treatment plants should be enhanced.	*Not applicable*	Waterborne diseases	• Reduced environmental pollution • Improved hygiene standards • Increased employment opportunities • Reduced incidence of waterborne diseases	Limited land use	Aligns with action to improve sanitation under the Mitigation pillar NWMP 2030 – *"Increase coverage rate of sewerage system to 80% for urban population"*	Mitigation

ADAPTATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Climate hazards addressed**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Train communities and WASH service providers on improved hygiene and sanitation practices, including the formation of Community Led Total Sanitation (CLTS) and ODF committees from village, wards and subcounty levels, so as to ensure sustainability of ODF villages	Currently, the management of sanitation is unequal and exclusive, and poor hygiene behaviours around sanitation exist in many communities. To address this, community members and WASH service providers will be trained under this action on improved hygiene and sanitation practices. Women and girls will be specifically targeted for this action, as they are typically the primary home caregivers.	*Not applicable*	Waterborne diseases	• Improved hygiene standards • Reduced incidence of waterborne diseases • Enhanced social dignity	There might be some expectations for payments/ subsidies	Aligns with to actions to strengthen enforcement of waste management regulations under the Mitigation pillar Nakuru Countywide Strategic Sanitation Plan – *"Through sanitation marketing, capacity building and political goodwill universal access to sanitation has been achieved, open defecation eliminated and waterborne diseases minimised"*	Mitigation
FORESTRY SECTOR TARGET	**By 2030, increase tree cover in Nakuru County to 75 000 ha.**						
Rehabilitate open public green spaces in Nyayo Garden, Lion Garden, Naivasha People's Park and others, and reforest areas in gazetted forests with a focus on indigenous trees and the restoration of indigenous ecosystems	Kenya's target at the national and local level is to increase forest/tree cover to at least 10% of total land cover on public, private and community lands by 2030. The current area under tree cover in Nakuru County is approximately 69 000 ha (9% of total land cover), therefore, the target of 10% tree cover by 2030 amounts to 75 000 ha (an increase of 6 000 ha). There is additionally a goal in Nakuru County to plant at least 2 million trees per year until 2030 in forest and green spaces. This action will undertake afforestation and reforestation activities within the farmlands and the promotion of natural regeneration techniques within degraded landscapes by 2030. Open public places to be rehabilitated include green spaces such as: Nyayo Garden, Lion Garden, Naivasha People's Park and the park opposite Statehouse, road reserves, schools and institutions, abandoned quarries, mountainous areas and riparian areas. The action would also include reforestation of gazetted forests, e.g. Eastern Mau, Menengai, Bahati and Dondori. This reforestation will be undertaken using indigenous trees and will focus on the restoration of indigenous ecosystems. It should also incorporate GIS mapping of trees planted and the monitoring of tree survival and improvement of care of trees after planting for at least three years.	This action will ensure that Nakuru County meets the target of 10% tree cover by 2030, in alignment with Kenya's NDC, the National Forest Programme and county-determined contributions. This will reduce negative impacts of climate change such as flooding, erosion, and extreme heat while also increasing the county's carbon sinks. In addition, this action will contribute to the social value of Nakuru County's public green spaces by rehabilitating them, resulting in aesthetically pleasing recreational and communal areas. This action will also focus on the reforestation of gazetted forests with indigenous vegetation, contributing to the overall functioning of these ecosystems. These additional benefits contribute to this action being considered a priority by the county.	• Drought • Flash/surface floods • Rainstorms	• Increased employment opportunities in forest sector e.g. tree nurseries • Increased opportunities for research • Reduce CO_2 levels through increased carbon stocks • Improved biodiversity	Potential for people to be displaced Reduced agricultural/ pastoral land	Aligns with action to improve green open spaces under the Mitigation pillar NCCAP (2018) – *"Afforestation/ reforestation/agroforestry of additional 100 000 hectares of land"* NCCCAP (2018) – *"Promote urban forestry"; "Promote afforestation and reforestation activities within the farmlands"; "Engage vulnerable groups (including youth, women and indigenous communities) in habitat restoration."* National Forest Programme 2016–2030 – "*Increased forest / tree cover to at least 10% on public, private and community lands"*	Mitigation

ADAPTATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Climate hazards addressed**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Reduce deforestation and forest degradation by introducing alternative energy sources to households in Nakuru County	According to the Kenya National Bureau of Statistics (KNBS) 2019 report, the highest energy consumption by the residents of Nakuru County is through the use of firewood and charcoal. This has resulted in forest deforestation and degradation in Nakuru County. To address these problems, this action will look to introduce alternative energy sources (solar, biogas, energy saving *jikos*, charcoal briquettes) while promoting the participation of the youth, women and Indigenous communities in ecosystem conservation.	*Not applicable*	• Drought • Flash/surface floods • Rainstorms	• Reduced CO_2 levels through increased carbon stocks • Improved biodiversity • Improved human health as a result of no longer breathing in smoke from using wood for energy	Loss of jobs in the timber industry Increased cost of living in regard to the alternative sources of energy	Aligns with actions to promote clean cooking under the Mitigation pillar NCCAP (2018) – *"Reduce deforestation and forest degradation, and enhance the protection of an additional 100 000 hectares of forests"*	Mitigation; Access to Energy
Restore degraded landscapes in riparian habitats and water catchment areas in Nakuru County using indigenous vegetation	The current tree cover in Nakuru County stands at 9% of total land cover, with the woodland and farmland constituting the largest percentage of degraded landscapes. To increase tree, cover in Nakuru County to 10% of total land cover by 2030, this action will involve the restoration of degraded landscapes including riparian habitats and water catchment areas by engaging vulnerable groups (including youth, women and Indigenous communities) in habitat restoration.	*Not applicable*	• Drought • Flash/surface floods • Rainstorms	• Reduced soil erosion • Improved aesthetic value • Improved biodiversity • Improved water quality	Potential for people to be displaced Reduced agricultural/ pastoral land	Aligns with actions to promote clean cooking under the Mitigation pillar NCCAP (2018) – *"Restore up to 200 000 hectares of forest on degraded landscapes, especially in ASALs and rangelands"* NCCCAP (2018) – *"Restore degraded landscapes including riparian habitats and water catchment areas."* National Forest Programme 2016–2030 – *"Increase forest/tree cover to at least 10% on public, private and community lands"*	Mitigation

ADAPTATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Climate hazards addressed**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
TOURISM SECTOR TARGET	**By 2030, ensure that the Nakuru County tourism sector promotes ecotourism and sustainability in 80% of national parks, lakes, game reserves, conservancies, etc.**						
Conduct sensitisation and capacity-building on sustainable tourism activities with vulnerable groups (including youth, women and Indigenous communities) across Nakuru County's 55 wards by 2030	Most tourism destinations in Nakuru County are starting to adopt sustainable practices. For example: • Lake Solai: bird conservation, fishing and boat-riding, hiking • Lake Naivasha: bird sanctuary, snake conversation, fishing and boat-riding • Hells Gate National Park: hiking, biking, mountain climbing, game drives, conservation of indigenous species (birds, and other animals) • Lake Nakuru: game drives; conservation of flamingos, rhinos and lions; boat-riding; clean-up activities by communities; community sensitisation (including on human-wildlife conflict) In these destinations, this action will build on what is already happening, supporting the expansion of eco-tourism activities and the addition of others. Where destinations are still in the early stages of adopting sustainable tourism practices, the action would help them to start the process of sustainable tourism, based on what has been done elsewhere. Further identified activities in these areas include: • Lake Solai and Lake Naivasha: prioritising the blue economy • Hells Gate National Park: tree planting, beautification, tour guiding, beadwork • Lake Nakuru: removal of invasive species, (including invasive grass, hyacinths) To do this, sensitisation and capacity-building for communities will be done in partnership with the private sector and the Kenya Wildlife Service (KWS). The first step will be sensitisation, training communities on what sustainable tourism is, what makes it sustainable, and what some of the possibilities are. The second step, capacity-building, would then include more direct training or workshopping of skills needed for running eco-tourism activities. There could also be opportunities here for knowledge exchange between communities – those already running small eco-tourism businesses, and those who are not yet, so that agency and entrepreneurship within the communities is supported. The third step would then be to engage community members in sustainable tourism employment opportunities in partnership with KWS and the private sector.	Ecotourism contributes to the conservation and preservation of natural and cultural resources, increasing their resilience to climate change impacts such as flooding and droughts. It is also a well-established way of uplifting local communities and generating livelihoods, while increasing economic activity in the county in general. Thus, this action will build resilience to climate change through increased means by which to respond to climate hazards. Local residents, especially vulnerable groups such as the youth, women and indigenous groups, will enjoy economic and social benefits through this action. Examples of this are already seen in Lake Naivasha, Lake Solai, Hells Gate National Park and Lake Elementaita. This action will result in community empowerment through ecotourism, as well as improved conservation and increased climate resilience. It is thus considered a priority for the county.	• Drought • Flooding	• Increased job creation • Reduced crime • Reduced violence against women and girls • Increased feeling of inclusion for vulnerable groups in the community • Promotion of cohesion and integration • Reduced land degradation • Increased support of conservation • Improved livelihoods	Cultural conflicts Conflicting responsibilities	NCCCAP (2018) – *"Engaging vulnerable groups (including youth, women and indigenous communities) in ecotourism activities"*	Not applicable

ADAPTATION ACTIONS							
Action title	**Action description**	**Rationale for prioritisation**	**Climate hazards addressed**	**Co-benefits**	**Trade-offs**	**Synergies of action with other actions and other policies/plans**	**Alignment with other seacap pillars**
Map all wildlife corridors in Nakuru County using GIS, and gazette at least one wildlife corridor by 2030	The tourism sector frequently uses mapping to promote destinations, local attractions and marketing. Through this action, all wildlife corridors in Nakuru County will be mapped using GIS, which will facilitate better planning and will enhance the commercial tourism opportunities for local communities. Gazetting of wildlife corridors will also assist in conservation of wildlife habitats, ensuring wildlife will persist in these areas and continue to attract tourists, for example in Lake Solai.	*Not applicable*	• Drought	• Can share the mapped areas with other relevant stakeholders • Improved planning and planning tools • Improved biodiversity	Conflict of use of the gazetted land Potential for people to be displaced	NCCAP (2018) – *"Identify and effectively conserve 30 000 hectares of wildlife habitats, to support a broad range of wildlife and plants under changing conditions"* NCCCAP (2018) – *"Map and gazette wildlife corridors"*	Not applicable
Introduce water-harvesting techniques in 80% of Nakuru County's conservation areas by 2030 for wildlife use	Most conservation areas have been affected by the surrounding human activities. Some of the rivers and swamps dry up during the dry seasons due to human activities like irrigation and infrastructural development on riparian lands. Flooding also occurs during the wet seasons. Introducing water-harvesting techniques into 80% of Nakuru County's conservation areas will contribute to providing reliable sources of water for the wildlife conservancies during dry seasons, and will also mitigate waterborne diseases during wet seasons.	*Not applicable*	• Drought • Waterborne diseases	• Reduced human-wildlife conflict • Improved access to water in conservation areas • Improved wildlife health • Enhanced tourism opportunities • Enhanced opportunities for livelihood improvement	Disturbs the ecological balance which may lead to animals relying on human beings	NCCCAP (2018) – "*Promote water harvesting in conservation areas for wildlife use"*	Not applicable

6 Monitoring, evaluation and reporting

The monitoring, evaluation and reporting (MER) of the SEACAP enables cities to decide what is important to measure, how to measure it and how to assess progress against the SEACAP targets and developed actions. It shows progress, as reaching the end goal might take a considerable amount of time. While monitoring entails the systemic collection of data on specific indicators, evaluation is the process by which the city assesses and understands changes identified over time, in line with the indicators and against a baseline. Reporting entails presenting data and analysis to stakeholders for information, decision making or knowledge sharing.

The Nakuru County SEACAP sets out 35 actions, with 21 priority actions. The delivery of these actions is the responsibility of the County Government of Nakuru, with funds flowing from the county's revenue stream, nationally as well as internationally. Monitoring, evaluating and reporting will be done using the existing CIDP MER framework within the county. The County Government of Nakuru will also report annually through the ICLEI – CDP (Carbon Disclosure Project) joint reporting framework, which the county is already doing.

6.1 Integration of SEACAP actions into sectoral plans for enhanced implementation

Upon finalisation of the SEACAP development and validation process in Nakuru County, an in-person multi-stakeholder participatory workshop was held in February 2022 to discuss how the Nakuru County SEACAP will be implemented. The Department of Finance and Economic Planning was also represented in this workshop. It was decided that the surest way of ensuring that the SEACAP is implemented is by integrating the resulting targets and actions into existing sectoral plans, and most importantly, the County Integrated Development Plan (CIDP). Sector plans are often informed by actions in the CIDP which is a 5-year plan that outlines the priorities of the county. The CIDP is updated at mid-term (3 years) and at the end of the term of the plan (5 years). The third Nakuru County CIDP is currently being developed, and there is a working group in charge of this. Actions to be included in the CIDP are identified by dedicated sector working groups, and then presented to the county's Department of Planning. The department can only allocate funding for actions existing in the CIDP.

Table 9 presents a summary of the discussions held with the county government regarding sectoral plans where the respective SEACAP actions can be incorporated for enhanced implementation. Relevant indicators have also been included for the purposes of tracking progress of implementation over time. The tables in **Annex 1** and **Annex 2** should be consulted for more details regarding related indicators, department responsible for implementation, and implementation cost, amongst other details.

TABLE 9: Sectoral and county plans where SEACAP actions could be integrated to enhance implementation

MITIGATION ACTIONS			
No	**Action title**	**Sector/county plans that this action aligns with**	**Indicator for tracking progress**
SECTOR: STATIONARY ENERGY **TARGET: Nakuru County seeks to reduce GHG emissions from the stationary energy sector by 57.5% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the stationary energy sector of at least 12% compared to the BAU scenario from domestic resources, while the remaining 45.5% is conditional on external support.**			
1	Develop and enforce the Energy Act and regulations on energy efficiency within Nakuru County by 2027	• The County Energy Plan • The Green Building Guidelines for Nakuru County • Roads and infrastructure • Public works	Number of defaulters brought to order
2	Undertake regular energy audits on 2 000 buildings and facilities within the county	• Water, environment, energy and natural resources • Public works	Number of buildings audited
3	Install energy-efficient lighting in commercial, institutional and residential buildings	• Water, environment, energy and natural resources • Public works	Number of energy-efficient bulbs installed
4	Develop small-scale biogas production facilities to promote clean cooking in Nakuru County in partnership with the private sector	• Water, environment, energy and natural resources • Public works	Number of small-scale biogas facilities developed
5	Create three energy centres to disseminate information and raise awareness on sustainable energy	• The County Energy Plan • The County Clean Energy Policy • The County Clean Energy Action Plan	Number of energy centres created
6	Install solar photovoltaic (PV) systems on 25 county government facilities	• The County Energy Plan • The County Clean Energy Policy • The County Clean Energy Action Plan	Number of county government facilities with PV systems installed
7	Create incentives to promote the uptake of renewable energy technologies by businesses, households and communities in Nakuru County	• The County Energy Plan • The County Clean Energy Policy • The County Clean Energy Action Plan	Number of incentives created
8	Develop policies and guidelines on green buildings to encourage the use of green building technologies	• The County Energy Plan • The County Clean Energy Policy • The County Clean Energy Action Plan	Number of policies and/or guidelines developed
SECTOR: TRANSPORT **TARGET: Nakuru County seeks to reduce GHG emissions from the transportation sector by 17.6% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the transportation sector of at least 2.7% compared to the BAU scenario from domestic resources, while the remaining 14.9% is conditional on external support.**			
9	Construct and/or upgrade 10 km of non-motorised transport routes in urban centres	• Roads • Land use planning	Number of km of non-motorised transport routes constructed
10	Create green open spaces in the county's urban centres, including NMT corridors	• Environment, water, energy and natural resources • Land use planning	Number of open spaces created
11	Improve parking facilities on the edge of urban centres to reduce congestion	• Land use planning • Roads	Km^2 of parking facilities improved
12	Expand the public transport system to include bus mass transport along major transit routes	• Roads • Land use planning • Public Service Training and Devolution	Number of bus mass transport systems added
13	Import and pilot the use of electric hybrid vehicles in the county fleet	• City Regeneration Plan	Number of electric hybrid vehicles

MITIGATION ACTIONS			
No	**Action title**	**Sector/county plans that this action aligns with**	**Indicator for tracking progress**
SECTOR: WASTE **TARGET: Nakuru County seeks to reduce GHG emissions from the waste sector by 16.4% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the waste sector of at least 2.2% compared to the BAU scenario from domestic resources, while the remaining 14.2% is conditional on external support.**			
14	Upgrade three existing municipal waste disposal sites in Nakuru County by improving access roads, fencing and zoning of the tipping areas	• Environment, water, energy and natural resources • Nakuru County Solid Waste Management Plan and Solid Waste Management Act • Land use planning • Health • Roads • Finance	Km of access roads to waste disposal sites upgraded Number of waste disposal sites completely fenced
15	Establish a resource recovery centre in Nakuru County to increase waste recovery	• Environment, water, energy and natural resources • Agriculture	Waste recovery centre established? (yes/no)
16	Organise annual public awareness-raising campaigns and incentives to increase household-level waste segregation	• Environment, water, energy and natural resources • Social services, gender, etc. • Education	Number of public awareness-raising campaigns held in a year
17	Increase briquette production from organic waste and faecal sludge to contribute to waste recovery	• Environment, water, energy and natural resources	Percentage increase in briquette production
18	Increase the extent of the sewer network and the capacity of the wastewater treatment infrastructure to service 60% of the population of Nakuru County	• Water • Land use planning • Health • (Waterworks development agency; public works department to be involved for implementation)	% of population served by sewer network
19	Develop a sanitary landfill and waste recovery facility at Gilgil	• Environment • Land use planning	Sanitary landfill facility developed in Gilgil? (yes/no) Waste recovery facility created in Gilgil? (yes/no)
20	Strengthen enforcement of existing laws and regulations on waste management in Nakuru County	• Environment • Health • Public Service Devolution Department	Number of defaulters penalised

ADAPTATION ACTIONS			
	Action title	**Sector/county plans that this action aligns with**	**Indicator for tracking progress**
SECTOR: AGRICULTURE, LIVESTOCK AND FISHERIES **TARGET: By 2030, ensure that at least 70% of crop, livestock and fishery farmers and other stakeholders are using climate-resilient practices including water-harvesting techniques and nature-based enterprises (e.g. agroforestry).**			
1	Desilt 60 water pans and construct 25 new water pans in Naivasha and Rongai subcounties by 2030 to promote water harvesting, conservation and utilisation for domestic and agricultural use in Nakuru County	• Departmental plan (Agriculture, livestock and fisheries) • The Integrated Sustainable Urban Development Plan (ISUDP) • Water	Number of water pans desilted Number of new water pans constructed
2	Train 70% of smallholder farmers and pastoralists in Nakuru County on how to adopt appropriate technologies in fodder production and animal husbandry by 2030	• Sectoral plan: Agriculture, livestock and fisheries	Number (percentage) of farmers and pastoralists trained
3	Train 70% of fish farmers in Nakuru County on how to adopt sustainable modern fish farming technologies by 2030	• Sectoral plan: Agriculture, livestock and fisheries • Trade	Number (percentage) of people trained
SECTOR: ACCESS TO CLEAN WATER **TARGET: By 2030, increase access to clean water to 80% of the population.**			
4	Map all community water sources in Nakuru County by 2030, including springs, boreholes, pans, dams and shallow wells	• Sectoral plan: Water, environment, energy, climate change • Land use planning (spatial planning department) • Planning Department: Land, housing and physical planning • Integrated Sustainable Urban Development Plan (ISUDP)	Number of water sources mapped
5	Reduce water losses by 15% by 2030 through replacement of dilapidated water infrastructure with advanced technologies including HDPE pipes and smart meters and update current environmental regulations	• Water, environment, energy, natural resources, climate change • Water service providers (regulated by National Water Regulatory Board) • (Note: Also consider the water utilities)	Number of dilapidated water infrastructure replaced with advanced technologies Percentage reduction in water losses
6	Introduce water filters and water treatment tablets to 80% of the population by 2030 to improve access to safe water storage and treatment methods	• Sector plan: Water, environment, natural resources, energy, climate change • Public health	Number of installed water filters Number of water treatment tablets used
SECTOR: SANITATION **TARGET: By 2030, increase access to sanitation to 100% of the population.**			
7	Support all rural villages in Nakuru County with achieving "Open Defecation Free (ODF)" status by 2030, including follow-ups, claims, verification, certification and celebration of ODF villages	• Department of Health • Water Directorate • Water and sanitation	Number of Open Defecation Free villages
8	Establish at least five new sewage/decentralised treatment facilities in major urban and peri-urban areas in Gilgil, Subukia, Njoro, Elburgon and Bahati by 2030	• Water • Nakuru County-wide Sanitation Strategic Plan* • Housing • Land use planning	Number of new sewage treatment facilities established
9	Train communities and WASH service providers on improved hygiene and sanitation practices, including the formation of Community Led Total Sanitation (CLTS) and ODF committees from village, wards and subcounty levels, so as to ensure sustainability of ODF villages	• Department of Health • Water Directorate • Water and sanitation • Education plans	Number of communities trained Number of WASH service providers trained

ADAPTATION ACTIONS			
	Action title	**Sector/county plans that this action aligns with**	**Indicator for tracking progress**
SECTOR: FORESTRY **TARGET: By 2030, increase tree cover in Nakuru County to 75 000 ha.**			
10	Rehabilitate open public green spaces in Nyayo Garden, Lion Garden, Naivasha People's Park and others, and reforest areas in gazetted forests with a focus on indigenous trees and the restoration of indigenous ecosystems	• Environment • Land use planning • The Integrated Sustainable Urban Development Plan • Water • Agriculture	Number of open green spaces rehabilitated Number of indigenous trees planted
11	Reduce deforestation and forest degradation by introducing alternative energy sources to households in Nakuru County	• Environment • Energy • Natural resources • Agriculture	Number of households who have transitioned from traditional biomass to alternative energy sources
12	Restore degraded landscapes in riparian habitats and water catchment areas in Nakuru County using indigenous vegetation	• Water • Environment • Agriculture • Natural resources • Land use planning	Number of degraded landscapes restored
SECTOR: TOURISM **TARGET: By 2030, ensure that the Nakuru County's tourism sector promotes ecotourism and sustainability in 80% of national parks, lakes, game reserves, conservancies, etc.**			
13	Conduct sensitisation and capacity-building on sustainable tourism activities with vulnerable groups (including youth, women and Indigenous communities) across Nakuru County's 55 wards by 2030	• Tourism • Youths, gender, culture, sports and social services* • Education (cross-cutting) • Vocational training • Environment • Communication (cross-cutting) • Public service, devolution and training (cross-cutting)	Number of capacity-building workshops held
14	Map all wildlife corridors in Nakuru County using GIS, and gazette at least one wildlife corridor by 2030	• Land use planning • Natural resources and environment • Tourism	Number of wildlife corridors mapped Number of wildlife corridors gazetted
15	Introduce water-harvesting techniques in 80% of Nakuru County's conservation areas by 2030 for wildlife use	• Water • Tourism • Trade • Land use planning (creates the enabling environment)	Number of conservation areas using water-harvesting techniques

6.2 Reporting

In the framework of the CoM SSA, the signatory cities must submit monitoring reports on a regular basis, according to their financial and human resources and capacities. The monitoring reports not only provide information on the status of implementation of each action/area of action/sector in the action plan, but also update the data, thus helping to monitor progress.

The elements to be reported and the recommended timetable are detailed in the **Table 10**.

TABLE 10: Reporting elements and corresponding timelines for all CoM SSA signatory cities

REPORTING ELEMENT	YEAR 0	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Baseline Emissions Inventory			X			
Risk and Vulnerability Assessment			X			
Target and Goals (mitigation/adaptation)			X			
Access to Energy Assessment			X			
Climate Action Plan(s) (mitigation and adaptation) or Integrated Plan				X		
Progress Report						X

According to the SEACAP guidebook, local governments must submit monitoring reports every two years after submitting the action plan. The local government shall update and resubmit the action plan(s) when there are significant changes to the existing plan(s). Local governments may apply for an extension of reporting deadlines along with a clear justification. Local authorities should compile and report on a GHG inventory at least every fourth year.

Conclusion

The SEACAP covers three main pillars related to climate change: the Mitigation pillar, Adaptation pillar, and Access to Energy pillar. The aim of this SEACAP was to develop a baseline assessment across the three pillars as well as overarching visions, sector-specific targets and actions. This strategic plan will guide the county on its journey of low-emission development, while adapting to the current and future impacts of climate change, and also improving access to sustainable, affordable and renewable energy. As such, the report provides an overview of the baseline assessment, vision, sectoral targets and actions for the climate change mitigation and adaptation pillars of the SEACAP. The baseline, targets and actions of the Access to Energy pillar can be found in the Nakuru County Energy Plan which has been developed by EED Advisory under the CoM SSA initiative. Also, separate and more detailed reports – the baseline reports, target reports, action planning reports for the mitigation and adaptation pillars – have also been developed, which outline the methodology and findings of the respective stages in the planning phase of the SEACAP development process. As such, these should be consulted for more in-depth information.

The report shows that the **total GHG emissions for Nakuru County in 2019 was 1 642 867 tCO_2e.** The stationary energy sector is the largest emitting sector, responsible for 43% of total emissions, followed by the transport sector (33%), and the waste sector (24%). **The business-as-usual scenario projects that GHG emissions from Nakuru County will increase by 65% by 2030 if no additional emission reduction actions are taken.**

To mitigate this, Nakuru County has developed GHG emission reduction targets, which are aligned with Kenya's national and international commitments, including the country's updated Nationally Determined Contribution (NDC) 2020, as well as the National Climate Change Action Plan 2018–2022 (NCCAP). The county-wide and sectoral targets are guided by the following overarching vision for mitigation in Nakuru County:

> ***A low-carbon county that supports sustainable development by 2030.***

LARGEST EMISSIONS EMITTING SECTORS 2019

43%

stationary energy sector

33%

transport sector

24%

waste sector

In alignment with this vision, **Nakuru County seeks to reduce GHG emissions by 33% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions of at least 6% compared to the BAU scenario from domestic resources, while the remaining 27% is conditional on external support.**

In addition, the targets for each emitting sector in Nakuru County have also been set, which are aligned with the unconditional target in the NDC and the sectoral targets in the NCCAP. The county has also developed actions that will be implemented in order to meet the ambitious, yet practical targets set by itself. These include 20 actions across three sectors – stationary energy, transportation and waste. From amongst the 20 identified actions, 14 have been selected as priorities for implementation to place Nakuru County on a lower emissions pathway by 2030.

In the stationary energy sector, the priority actions are intended to: increase energy efficiency by introducing new regulations, undertaking energy audits and installing more efficient lighting; facilitate the uptake of biogas as a clean cooking fuel through the development of small-scale biogas production facilities; and increase awareness and engagement around clean energy through the creation of three energy centres. In the transportation sector, the priority actions aim to: increase walking and cycling by upgrading and greening non-motorised transport routes in urban centres; reduce congestion in the urban centres by improving parking facilities on the urban edge; and expand the public transport system to include bus mass transport. Finally, in the waste sector, the priority actions are focused on: upgrading existing municipal waste disposal sites; increasing waste recovery by establishing a resource recovery centre, raising awareness about household-level waste segregation and increasing briquette production from waste materials; and increasing the extent of the sewer network and capacity of wastewater treatment infrastructure.

The implementation of these mitigation actions will set Nakuru County on a lower emissions pathway and contribute to the achievement of Kenya's national climate change mitigation goals included in the NDC, while also delivering economic, social and environmental co-benefits that are aligned with the county's sustainable development priorities.

Adaptation

The first step in the Adaptation pillar of the SEACAP was the development of a Risk and Vulnerability Assessment (RVA), which revealed that Nakuru County faces a number of climate hazards, particularly: drought, rainstorms, flash/surface floods, river floods, and waterborne diseases. These hazards are likely to intensify with climate change as temperatures are projected to rise in the county and rainfall is likely to become more erratic. The RVA also identified the sectors most affected by current and future climate hazards as: (i) environment, biodiversity and forestry; (ii) water supply and sanitation; (iii) land use planning; and (iv) food and agriculture. It was also found that the most vulnerable groups to climate hazards in Nakuru County are women and girls, and low-income households.

SECTORS PRIORITISED TO FOCUS ADAPTATION EFFORTS ON, AND SET TARGETS FOR

Agriculture, livestock and fisheries

Water

Forestry

Tourism

With this, the county set an overarching vision which captures the overall direction that the county wishes to go with regards to climate change adaptation:

> ***A climate-resilient county with sustainable ecosystems and livelihoods by the year 2030.***

Sector targets were then set to translate the overarching adaptation vision into practical targets per sector. Sectors that have been prioritised to focus adaptation efforts on, and set targets for, are: **agriculture, livestock and fisheries; water; forestry; and tourism**.

Informed by existing literature, priorities and the findings of the RVA, Nakuru County identified through workshops 15 adaptation actions that the county needs to implement to contribute to achieving the sector-specific targets. Summarily, in order to adapt to the impacts of climate change in the county, the main areas of focus include:

- Measures that build resilience in the water sector, as almost all the climate hazards faced in Nakuru County relate to water (e.g. drought, flooding, waterborne diseases, rainstorms); and
- Adaptation actions that simultaneously address a number of climate hazards, such as droughts and flooding (e.g. installation of water pans).

Through the SEACAP development process, Nakuru County has demonstrated its ability and readiness to lead climate actions in Kenya by setting ambitious targets to reduce GHG emissions, adapt to the impacts of climate change, and improve access to clean, sustainable and affordable energy in the county.

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Annexures

ANNEX 1 Supporting information for mitigation actions as required by the JRC Guideline and JRC Reporting Template

ACTION TITLE	AREA OF INTERVENTION	POLICY OR GOVERNANCE INSTRUMENT	ORIGINS OF ACTION	ORGANISATION RESPONSIBLE	PROPOSED IMPLEMENTATION TIMEFRAME (START – FINISH)	STATUS OF IMPLEMENTATION	COST OF IMPLEMENTATION
SECTOR:	**STATIONARY ENERGY**						
SECTOR TARGET:	**Nakuru County seeks to reduce GHG emissions from the stationary energy sector by 57.5% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the stationary energy sector of at least 12% compared to the BAU scenario from domestic resources, while the remaining 45.5% is conditional on external support.**						
Develop and enforce an Energy Act and regulations on energy efficiency within Nakuru County by 2027	Regulation, controls and sanctions	Regulation and planning	Local government	Nakuru County Department of Water, Environment, Energy and Natural Resources	2022–2027	Not started	*Not estimated*
Undertake regular energy audits on 2 000 buildings and facilities within the county	Energy management of local authority estate	Municipal governing of own facilities	Local government	Nakuru County Department of Water, Environment, Energy and Natural Resources	2022–2030	Not started	*Not estimated*
Install energy-efficient lighting in commercial, institutional and residential buildings	Energy management of local authority estate	Municipal governing of own facilities	Local government	Nakuru County Department of Water, Environment, Energy and Natural Resources	2022–2030	Not started	*Not estimated*
Develop small-scale biogas production facilities to promote clean cooking in Nakuru County in partnership with the private sector	Strategic energy planning to support local energy generation	Coordinating stakeholders and awareness building	Local government	Nakuru County Dept. of Water, Environment, Energy and Natural Resources; Dept. of Land, Housing and Physical Planning; Dept. of Agriculture, Livestock and Fisheries; Dept. of Health Services; Dept. of Youth, Gender, Culture, Sports and Social Services	2022–2030	35% of households in Nakuru County are using clean cooking technologies	KES 800 000 000
Create three energy centres to disseminate information and raise awareness on sustainable energy	Awareness raising/training	Coordinating stakeholders and awareness building	Local government	Nakuru County Department of Water, Environment, Energy and Natural Resources; Dept. of Roads, Transport and Public Works, Dept. of Education and ICT	2022–2030	Not started	KES 110 000 000
SECTOR:	**TRANSPORTATION**						
SECTOR TARGET:	**Nakuru County seeks to reduce GHG emissions from the transportation sector by 17.6% by 2030 compared to the business-as- usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the transportation sector of at least 2.7% compared to the BAU scenario from domestic resources, while the remaining 14.9% is conditional on external support.**						
Construct and/or upgrade 10 km of non-motorised transport routes in urban centres	Direct infrastructure investments for transport	Municipal governing of own facilities; regulation and planning	Local government	Nakuru County Dept. of Roads, Transport and Public Works; Dept. of Water, Energy, Environment and Natural Resources; Nakuru Municipality; Naivasha Municipality	2019–2030	Ongoing	Cost so far: KES 67 million in Naivasha Municipality KES 60 million in Nakuru Municipality Future cost not yet estimated

ACTION TITLE	AREA OF INTERVENTION	POLICY OR GOVERNANCE INSTRUMENT	ORIGINS OF ACTION	ORGANISATION RESPONSIBLE	PROPOSED IMPLEMENTATION TIMEFRAME (START – FINISH)	STATUS OF IMPLEMENTATION	COST OF IMPLEMENTATION
SECTOR:	**TRANSPORTATION**						
SECTOR TARGET:	**Nakuru County seeks to reduce GHG emissions from the transportation sector by 17.6% by 2030 compared to the business-as- usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the transportation sector of at least 2.7% compared to the BAU scenario from domestic resources, while the remaining 14.9% is conditional on external support.**						
Create green open spaces in the county's urban centres, including NMT corridors	Other	Municipal governing of own facilities	Local government	Nakuru County Dept. of Water, Energy, Environment and Natural Resources; Nakuru Municipality;	2021–2030	Ongoing	*Not estimated*
Improve parking facilities on the edge of urban centres to reduce congestion	Direct infrastructure investments for transport	Municipal governing of own facilities; regulation and planning	Local government	Nakuru County Dept. of Roads, Transport and Public Works; Dept. of Water, Energy, Environment and Natural Resources; Dept. of Land, Housing and Physical Planning; Nakuru Municipality; Naivasha Municipality	2021–2030	Ongoing	*Not estimated*
Expand the public transport system to include bus mass transport along major transit routes.	Partnership with transport service providers	Coordinating stakeholders (public and private); regulation and planning	Local government	Nakuru County Dept. of Roads, Transport and Public Works; Dept. of Water, Energy, Environment and Natural Resources; Dept. of Economic Planning; Dept. of Land, Housing and Physical Planning; bus operators	2021–2030	Ongoing	*Not estimated*
Import and pilot the use of electric hybrid vehicles to support their uptake	Direct infrastructure investments for transport	Municipal governing of own facilities; coordinating stakeholders (public and private)	Local government	Nakuru County Dept. of Roads, Transport and Public Works; Kenya Ministry of Transport; bus operators	2022–2030	Not started	*Not estimated*
SECTOR:	**WASTE**						
SECTOR TARGET:	**Nakuru County seeks to reduce GHG emissions from the waste sector by 16.4% by 2030 compared to the business-as-usual scenario. Nakuru County commits to achieving a reduction of GHG emissions from the waste sector of at least 2.2% compared to the BAU scenario from domestic resources, while the remaining 14.2% is conditional on external support.**						
Upgrade three existing municipal waste disposal sites in Nakuru County by improving access roads, fencing and zoning of the tipping areas	Waste and wastewater management	Municipal governing of own facilities	Local government	Nakuru County Dept. of Energy, Environment and Natural Resources; Kenya Urban Support Programme (KUSP)	2021–2030	Ongoing	*Not estimated*
Establish a resource recovery centre in Nakuru County to increase waste recovery	Waste and wastewater management	Municipal governing of own facilities	Local government	Nakuru County Dept. of Energy, Environment and Natural Resources; NASWAMA	2022–2030	Not started	*Not estimated*
Organise annual public awareness raising campaigns and incentives to increase household level waste segregation	Awareness raising	Coordinating stakeholders and building awareness	Local government	Nakuru County Dept. of Energy, Environment and Natural Resources; NASWAMA; private sector waste stakeholders	2022–2030	Not started	*Not estimated*
Increase briquette production from organic waste and faecal sludge to contribute to waste recovery	Waste and wastewater management	Municipal governing of own facilities	Local government	Nakuru County Dept. of Energy, Environment and Natural Resources; NAWASSCO; NAWASSCOAL	2021–2030	Ongoing	*Not estimated*
Increase the extent of the sewer network and the capacity of the wastewater treatment infrastructure to service 60% of the population of Nakuru County	Waste and wastewater management	Municipal governing of own facilities	Local government	Nakuru County Dept. of Water; NAWASSCO	2022–2030	Not started	*Not estimated*

ANNEX 2 Supporting information for adaptation actions as required by the JRC Guideline and JRC Reporting Template

ACTION TITLE	RESPONSIBLE BODY	POLICIES ACTION ALIGNS TO	ORIGINS OF ACTION	PROPOSED IMPLEMENTATION TIMEFRAME (START – FINISH)	STATUS OF IMPLEMENTATION	STAKEHOLDERS INVOLVED	RELATED INDICATOR	VULNERABILITIES TACKLED	OUTCOMES REACHED	INVESTMENT COST	AVOIDED COSTS
SECTOR:	**AGRICULTURE, LIVESTOCK AND FISHERIES**										
SECTOR TARGET:	**By 2030, ensure that at least 70% of crop, livestock and fishery farmers and other stakeholders are using climate-resilient practices including water-harvesting techniques and nature-based enterprises (e.g. agroforestry)**										
Desilt 60 water pans and construct 25 new water pans in Naivasha and Rongai subcounties by 2030 to promote water harvesting, conservation and utilisation for domestic and agricultural use in Nakuru County	County Government of Nakuru – Ministry of Agriculture, Livestock and Fisheries National government – Line Ministry (MDALF) – NIB, NARIGP NGOs and civil society – World Vision, WWF, Green Belt Movement	NCCAP 2018 NCCCAP 2018	Local government	2022–2030	Ongoing – 27% complete	National government NGOs/civil society Academia Local government Private sector	No. of dams constructed No. of dams desilted No. of farmers (households) reached	Low-income households Farmers	35 public and private water pans excavated and functional Beneficiaries – 1 200 households	KES 1.78 billion	Not available
SECTOR:	**WATER**										
SECTOR TARGET:	**By 2030, increase access to clean water to 80% of the population**										
Map all community water sources in Nakuru County by 2030, including springs, boreholes, pans, dams and shallow wells	County Government of Nakuru (Water, Environment, Energy and Natural Resources Department) Central Rift Water Works Development Agency (CRWWDA) Water service providers (NAWASCO, NARUWASCO, NAIVAWASS) Water Resources Authority Community-based water schemes Water Resources Users Association	NCCAP 2018 NCCCAP 2018 Kenya NWMP 2030	Local government	2022–2030	Ongoing – 42.5% complete	National government NGOs/civil society Academia Local government Citizens Private sector Donor/support partners	Number of community water sources mapped Number of water sources reclaimed and protected Number of households reached	Low-income households Women and girls	Water service providers water sources mapped and protected 300 000 people reached with access to clean water through water service providers	KES 10 million	Not available
SECTOR TARGET:	**By 2030, increase access to sanitation to 100% of the population**										
Support all rural villages in Nakuru County with achieving "Open Defecation Free (ODF)" status by 2030, including follow-ups, claims, verification, certification and celebration of ODF villages	Nakuru County Public Health Office Private sector (e.g. banks, social enterprises, CBOs) NGOs National government (schools) Academia (research)	Kenya NWMP 2030 Kenya Environmental Sanitation and Hygiene Policy 2016–2030	Local government	2013–2030	Ongoing – 29% complete	National government NGOs/civil society Academia Local government Citizens Private sector Donor/support partners	Number of villages triggered Number of villages followed up with Number of villages claimed Number of villages verified Number of villages certified	Low-income households Women and girls	1 276 villages triggered 721 villages claimed 570 villages verified 507 villages certified	KES 120 million	Not available

ACTION TITLE	RESPONSIBLE BODY	POLICIES ACTION ALIGNS TO	ORIGINS OF ACTION	PROPOSED IMPLEMENTATION TIMEFRAME (START – FINISH)	STATUS OF IMPLEMENTATION	STAKEHOLDERS INVOLVED	RELATED INDICATOR	VULNERABILITIES TACKLED	OUTCOMES REACHED	INVESTMENT COST	AVOIDED COSTS
SECTOR:	**FORESTRY**										
SECTOR TARGET:	**By 2030, increase tree cover in Nakuru County to 75 000 ha**										
Rehabilitate open public green spaces in Nyayo Garden, Lion Garden, Naivasha People's Park and others, and reforest areas in gazetted forests with a focus on indigenous trees and the restoration of indigenous ecosystems	National government – Ministry of Environment and Forestry Local Government – Department of Water, Environment, Energy and Natural Resources NGOs/civil society – Green Belt Movement, Climate Change Kenya Organisation, Globe Gone Green Academic institutions – Egerton University	NCCAP 2018 NCCCAP 2018 National Forest Programme 2016–2030	Local government	2022–2030	Ongoing – 9% completed	National government NGOs/civil society Academia Local government	No. hectares rehabilitated No. hectares reforested	Low-income households Youth Women and girls	9% tree cover in county	KES 960 million	KES 4.64 billion
SECTOR:	**TOURISM**										
SECTOR TARGET:	**By 2030, ensure that the Nakuru County tourism sector promotes ecotourism and sustainability in 80% of its tourism destinations**										
Conduct sensitisation and capacity building on sustainable tourism activities with vulnerable groups (including youth, women and Indigenous communities) across Nakuru County's 55 wards by 2030	County Department of Water, Environment, Energy and Natural Resources	NCCCAP 2018	Local Government	2023–2030	Not started	National government NGOs/civil society Academia Local government Citizens Private sector Religious organisations Development finance institutions	Number of vulnerable persons identified, profiled and registered in all wards Number of ecotourism activities identified, mapped and gazetted in all wards Number of capacity building and sensitisation activities conducted for vulnerable groups in all wards	Low-income households Women and girls Youth Indigenous communities	Not applicable	KES 1 billion	KES 2.5 billion

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