



**REPUBLIC OF KENYA
COUNTY GOVERNMENT OF NYANDARUA**



**NYANDARUA COUNTY DRAFT NATURAL RESOURCE MANAGEMENT POLICY
2024**

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FORWARD

This policy seeks to provide framework on natural resource management in the County.

I positively note that the county has wealth of natural resource that include: Forests namely: Geta, North Kinangop, South Kinangop, Olboloosat and Ndaragwa forests; Lakes/Wetlands: namely : lake Olbolossat; Rivers: namely Malewa, Ewaso-Narok, Turasha, Chania, Kiburu, Mukungi and Kitiri rivers; Wildlife: including elephants, baboons, Columbus monkeys, tree and ground squirrels, porcupines and many bird species: Mountain; Aberdare ranges are also the Mau Mau caves in Geta and Kimathi; Land and soil.

These natural resources are the main corner stone to our county's economic, social, political and cultural sector empowerment and hence need to have an effective management framework. Proper management of the natural resource within the county will promote the spirit of the Constitution on Natural values and principles of governance on sustainable development.

I take this opportunity to thank the many development and humanitarian partners that have and continue to invest in this county. We will continue to need your support as we plan to execute a phase of accelerated development in this sector. We have no choice but to increase our speed of transformation, calling for a paradigm shift in our resource allocation, implementation of planned projects and accountability. We envisage a transformation where the private sector will feel confident to invest in natural resources that they find profitable. The county government under the leadership of His excellency the Governor H.E Dr Kiarie N Badilisha looks forward to partnering with the private sector to industrialize natural resources in Nyandarua County.

Let us make it happen!

Hon. Samuel Wachira Mugo

County Executive Member

Water, Environment, Climate Change and Natural Resource – Nyandarua County

PREFACE

Nyandarua County is endowed with a wealth of natural and human resources. The Kenyan economy relies heavily on natural resources to support people's livelihoods and to contribute to national income. However, Kenya and the county's huge potential for economic growth is threatened by environmental degradation. Natural resource management is multi-sectoral, encompassing many sectors, including environment, agriculture, irrigation, forestry, livestock, water supply and energy, to name the most obvious. There is therefore a necessity for multi-sectoral cooperation, particularly at the decentralized county levels, which are the focal points of service delivery and support to sustainable community management of natural resources.

Kenya's and the county's natural resource base, mainly forests, wetlands, dry land, aquatic and marine resources, the quarries are under stress and stimulated by a variety of forces. Population pressure, deforestation, human encroachment, ongoing degradation of eco-systems as well as unsustainable use and poor governance of these resources threaten vulnerable habitats and biodiversity and, for a large proportion of the local communities, livelihoods and long-term food security in the entire county, which in return affects the country at large.

In addition to affecting economic growth potential, environmental degradation has huge economic consequences for the poor. Poverty adds additional pressure on natural resources, since these represent the main means of subsistence for the majority of poor households. They do not have secure and permanent access to fertile land and depend on the utilization of natural resources and on the selling of their labour power. The poor are therefore largely victims and causes of natural resource depletion and environmental degradation.

The County Government of Nyandarua recognizes that environmental management, poverty reduction and economic growth are closely linked, and is in the process of designing policies and institutional frameworks to address the situation. The county Government's long-term development strategy will be inclined to the Vision 2030, it will include strategies for action in the environment sector include conservation of natural resources, pollution and waste management, high-risk disaster zone management, environmental planning and governance, and climate change adaptation. Programmes and projects to be implemented in the environment, water and sanitation sectors within the period as outlined in the sector-specific plans.

Ms Njeri Njoroge

Chief Officer: Environment, Climate Change and Natural Resource

ACKNOWLEDGEMENT

Writing this policy was indeed a shared and participatory effort, as it should be.

We would like to thank the County Executive Member for Water, Environment, Climate Change & Natural resources for the commitment and support accorded to the technical team during the drafting of the Natural resource management policy.

Secondly, we would like to thank the Chief officers Ms Njeri Njoroge for the support accorded to the team and their cooperation which made it easy to work and come up with the draft of the policy.

Finally, thanks to the technical team which consisted of several members from the department and others from other departments. we acknowledge your hard work and cooperation. The team spirit enabled us to draft the policy in the shortest time possible. We appreciate the good work and may God Bless you.

Mr Samuel Bakari

**Director
Natural Resources**

ACRONYMS AND ABBREVIATIONS

CBO	Community Based Organisations
CC	Climate Change
CCV	Crane Conservation Volunteers
CECM	County Executive Committee Member: Water, Environment, Climate Change and Natural Resource
CFA	Community Forest Association
CGN	County Government of Nyandarua
CIDP	County Integrated Development Plan
EAWLS	East Africa Wildlife Society
EHIA	Environmental Health Impact Analysis
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
ESD	Education for Sustainable Development
FAO	Food & Agriculture Organisation
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	GreenHouse Gases
GIS	Geographical Information Systems
IAS	Invasive Alien Species
IWRM	Integrated Water Resources Management
KWS	Kenya Wildlife Service
KFS	Kenya Forest Service
LOIMP	Lake Ol Bolossat Integrated Management Plan
LOCCOG	Lake Ol Bolossat Community Conservation Group
MEAL	Monitoring Evaluation Achievement & Learning
MNRAs	Multilateral Natural Resource Agreements

NAP	National Action Plan
NEC	National Environment Council
NGO	Non-Governmental Organisation
NRM	Natural Resource Management
NBSAP	National Biodiversity Strategy and Action Plan
NEC	National Environment Council
EIMS	Environmental Information Management System
NEMA	National Environment Management Authority
PES	Payment for Ecosystem Services
RECP	Resource Efficient & Clean up Production
SAICM	Strategic Approach to International Chemicals Management
SALs	Semi-Arid Lands
SDGs	Sustainable Development Goals
SEA	Strategic Environmental Assessment
SLM	Sustainable Land Management
SME	Small & Medium Enterprises
TIPS	The Transition Implementation Plans
TNC	The Nature Conservancy
UNEP	United Nations Environment Program
WECCNR	Water Environment Climate Change & Natural Resources
WWF	WorldWide Fund for Nature

DEFINITION OF TERMS.

“*Biodiversity*” means the variability among living organisms from all sources including ecosystems and the ecological complexes of which they are a part. It encompasses the ecosystem, species and genetic diversity.

“*Biopiracy*” refers to the expropriation of biological resources without fair compensation or sharing of benefits.

“*Bioprospecting*” refers to the exploration of biodiversity for commercially valuable genetic and biochemical resources and research.

“*Catchment area*” refers to the area drained by a river or body of water.

“*Climate Change*” refers to any change in the climate over time whether due to natural variability or as a result of human activity.

“*Climate Mitigation*” means human interventions that seek to prevent or slow down the increase of atmospheric greenhouse gas concentrations by limiting current or future emissions and enhancing potential sinks for greenhouse gases.

“*Community*” refers to a clearly defined group of users, which may, but need not be, a clan or ethnic community. These groups of users hold a set of clearly defined rights and obligations.

“*Conservation*” means the protection, maintenance, rehabilitation, restoration and enhancement of the environment for sustainable use.

“*The County*” means the County Government of Nyandarua.

“*Education for Sustainable Development (ESD)*” refers to holistic & transformational education which addresses learning content and outcomes, pedagogy and learning environment.

“*Ecosystem*” means a dynamic complex of plant, animal, micro-organism communities and their non-living environment interacting as a functional unit.

“*Environmental Impact Assessment*” means a systematic examination conducted to determine whether or not a programme, activity or project will have any adverse impacts on the environment.

“*Genetic resources*” means genetic material of actual or potential value.

“*Land use*” means activities carried out on a given piece of land.

“*Invasive and alien species*” means a species that is not an indigenous species or an indigenous species translocated to a place outside its natural distribution range in nature.

“*Multilateral Natural Resources Agreement (MNRAs)*” means international legal instruments for the regulation of activities affecting the natural resources, particularly wildlife resources to which Kenya is a Party.

“*Natural Resource Management (NRM)*” refers to the sustainable utilization of major natural resources, such as land, water, air, minerals, forests, fisheries, and wild flora and fauna.

“*Payment for Ecosystem Services (PES)*” means a market-based approach to conservation based on the twin principles that those who benefit from environmental services (such as users of clean water) should pay for them and those who generate these services should be compensated for providing them.

“*Protected area*” means an area declared to be a protected area under the applicable law.

“*Riparian*” the strip of land adjacent to rivers, streams, lakes, or other water bodies. Statutorily, riparian land is defined as stretching at least 6 meters and up to a maximum of 30 meters on both sides of a watercourse from the highest watermark.

“*Silviculture*” is the art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands to meet the diverse needs and values of landowners and society such as wildlife habitat, timber, water resources, restoration, and recreation on a sustainable basis.

“*Species*” means a population of individual organisms capable of mating with one another and producing fertile offspring in a natural setting and that share common and specialised characteristics from others.

“*Stakeholder*” refers to an individual or group having a vested interest in the environment and natural resources.

“Strategic Environmental Assessment” refers to a range of analytical and participatory approaches that aim to integrate environmental considerations into policies, plans and programmes and evaluate the inter linkages with economic and social considerations.

“Sustainable use” means present use of natural resources, which does not compromise the ability to use the same by future generations or degrade the carrying capacity of ecosystems and habitats.

“Sustainable Land Management (SLM)” refers to use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the longtime production potential of these resources & maintenance of the environmental functions.

“Transition Implementation Plans (TIPs)” refers to a document that lays out the task and activities to be performed to efficiently transition the project from implementation phase to maintenance phase.

“Wetlands” means areas of marsh, fen, peatland, or water, whether natural or artificial, permanent or temporary, static or flowing, fresh, brackish, salt, including areas of marine water the depth of which at low tide does not exceed six meters. It also incorporates riparian and coastal zones adjacent to the wetlands.

“Wildlife” any wild and indigenous animal plant microorganism or parts thereof within their constituent habitat or ecosystem on land or in water as well as species that have been introduced into or established in Kenya

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Natural Resource Management (NRM) is the sustainable utilization of major natural resources such as land and soil, water, air, minerals, forests, fisheries, and wild flora and fauna. These resources provide the ecosystem services that provide better quality to human life. Natural resources provide fundamental life support, in the form of both consumptive and public-good services. Ecological processes maintain soil productivity, nutrient recycling, the cleansing of air and water, and climatic cycles.

Natural Resource Management (NRM) deals with managing the way in which people and natural landscapes interact. It brings together land use planning, water management, biodiversity conservation, and the future sustainability of industries like agriculture, mining, tourism, fisheries and forestry. It recognises that people and their livelihoods rely on the health and productivity of our landscapes, and their actions as stewards of the land play a critical role in maintaining this health and productivity.

Thus, there is consensus that natural resources, especially those of land, soil, water, forest, plant and animal diversity, vegetation, renewable energy sources, climate change and ecosystems services are fundamental for improving livelihoods and achieving sustainable development for improving livelihoods and achieving sustainable development in the County.

Globally, the value of agricultural crop production has increased approximately threefold since 1970 and raw timber harvest has increased by 45%. By 2017, it was estimated to reach some 4 billion cubic metres, with the forestry industry providing about 13.2 million jobs. However, indicators of regulating contributions, such as soil organic carbon and pollinator diversity, have declined, indicating that gains in material contributions are often not sustainable. Currently, land degradation has reduced productivity in 23 per cent of the global terrestrial area, and between \$235 billion and \$577 billions in annual global crop output is at risk as a result of pollinator loss. At the same time, over 85 per cent of wetlands (area) has been lost while the rate of forest loss has slowed globally since 2000. Cumulative records of alien species have increased by 40 per cent since 1980, associated with increased trade and human population dynamics and trends.

In most African countries, natural capital accounts for between 30% and 50% of total wealth. Over 70% of people living in sub-Saharan Africa depend on forests and woodlands for their livelihoods. Land is an economic development asset as well as a socio-cultural resource. A significant share of these resources is, however, used unsustainably while others are lost through illegal activities, meaning that the stream of benefits generated from these resources is being reduced over time. For instance, Africa loses an estimated USD 195 billion annually of its natural capital through illicit financial flows, illegal mining, illegal logging, the illegal trade in wildlife, unregulated fishing and environmental degradation and loss.

Despite Nyandarua County having a relatively high forest cover (Currently estimated at 26.5%), the county has experienced substantial forest loss in the past decade. According to Global Forest Watch (2021), within two decades (2001 to 2020), Nyandarua lost 535 ha of humid primary forest, making up 7.5% of its total tree cover loss in the same period. Total area of the humid primary forest in Nyandarua decreased by 1.6% in this period. Further, the county had 72,000 ha of natural forest, extending over 24% of its land area in 2010. However, in 2020 the county lost 404 ha of this forest, which is equivalent to 208,000 tons of CO₂ (Global Forest Watch, 2021).

Coupled with increasing human population, encroachment to riparian areas, and unsustainable agricultural practices, the county's natural resources (rivers, lake, wetlands and riparian areas) have yielded to external pressures. Cognizant of these environmental challenges, the County Government of Nyandarua plans to plant 10 million trees in the next 10 years (by 2030) with a phased approach targeting afforestation of 2 million trees per year.

Nyandarua County Context

Nyandarua County has an area of approximately 3304km²; subsequently there are five sub-counties namely Kinangop, Kipipiri, Ol' Kalou, Ol' Joro Orok and Ndaragwa and there are 25 wards. In 2019, Nyandarua had a population of 638,289 persons, a population density of 194.3 individuals per km² and an annual change of 0.68% (Kenya National Bureau of Statistics (KNBS), 2019). By 2026, the population in Nyandarua is predicted to grow to over 1 million people, with approximately 1000 additional households every year (Cities Alliance, 2020).

The county experiences relatively cool (temperate) climate with temperatures ranging below 15°C annually. The eastern edge of the county receives rather high rainfall above 1250 mm per year while along the eastern to northern edge of the county receives rainfall below 750 mm per

year. First wet season runs from March to June and is 25% wetter and 1-2°C warmer than the second and shorter season which runs mainly from October to December. The county is 2667.11 meters above sea level. Lake Ol Bolossat is a major protected lake in the county.

1.2.1 Location

The county is located in the Central part of Kenya. It has an area of 3245.2 km² lying between latitude 0⁰⁸' to the North and 0⁵⁰' to the South and between 35⁰¹³' East and 36⁰⁴²' West. It borders five counties; Laikipia to the North, Nyeri to the East, Kiambu the South, Murang'a to the South East and Nakuru to the West.

1.2.2 Demographics

The Kenya National Population and Housing Census, 2019, stated that the county had a population of 638,289 persons of whom 315,022 (49.3 per cent) are male and 323,247 (50.6 per cent) being female. The County had a total number of 179,686 households with an average household size of 3.5 persons. The population density at the time was 194 persons per km². The population projections are projected to be 682,740 in 2022, 721,112 in 2025 and 746,009 in 2027. In 2019, Kinangop Sub-County had the highest number of households with a population of 205,280 persons whereas Ol'Joro Orok had the least number, with 97,965 persons. This implies that 32.16 percent of the entire county population reside in Kinangop while 15.34 percent reside in Ol Joro Orok.

1.2.3 Climatic Conditions

The county experiences moderate to low temperatures. The highest temperatures are recorded in the month of December, with a mean average of 25⁰C while the lowest is recorded in the month of July, with a mean average temperature of 12⁰C. It experiences two rainy seasons: long rains from March to May with a maximum rainfall of 1600 mm and short rains from September to December and with a maximum rainfall of 700 mm. Areas near the Aberdare slopes receive sufficient rainfall with the plateau receiving scanty and erratic rainfall.

1.2.4 Topography

The main physical features of the county include Kinangop Plateau and Ol Kalou/Ol Joro Orok Plateau which have slopes that are interrupted by low undulating hills. The gentle slopes flatten to plain-like features encouraging formation of marshlands and swamps. The county was affected by volcanic and faulting which gave rise to major land forms, the Great Rift Valley to the west

and Aberdare ranges to the East. The highest point of the Aberdare ranges is 4001m above sea level. There are steep slopes that have undergone great transformation through weathering creating shallow valleys and gorges. The ranges drop gradually in a series of faults giving way to an escarpment that has been broken into sharp valleys occasioned by change in level of the courses

Natural Resources within the County

Forests: Five gazetted forests consisting 49,916 ha, equivalent to 16% country's area. These are: Geta, North Kinangop, South Kinangop, Ol Bolossat and Ndaragwa forests.

Lakes/Wetlands namely; lake Ol Bolossat which is the only lake and largest water mass in the county. It is fed by streams and groundwater seepage from the Aberdares and Ndundori hills. Human activities and clearance for settlement have affected its natural replenishment system.

Rivers: The major rivers within the County originate in the Aberdare forest and drains to the Ewaso-Ng'iro, Lake Naivasha, Tana and Athi catchments. The county is endowed with several permanent rivers including Malewa, Ewaso-Narok, Turasha, Chania, Kiburu, Mukungi, Wanjohi, Murindati and Kitiri rivers.

Wildlife: The Aberdare ecosystem consists of a dense forest with several animal species including elephants, baboons, Columbus monkeys, tree and ground squirrels, porcupines and many bird species.

Land: Land in the County is categorized to arable (201,100 ha, equivalent to 62% of the total land area in the County, and 3% of Kenya's total arable land), non-arable (123,430 ha, equivalent to 38% of the County's total area), (1).

Soils: The soils in the County are of volcanic origin and vary in distribution. Soils in the Kinangop and Ol'Kalou plateau are poorly drained clay loams. However, Ndaragwa, northern part of Ol'Joro Orok and Ol'Kalou have well drained clay loams. These soils have different crop production potentials.

Mountains: The Aberdare Ranges are one of the country's major water catchment areas. Moreover, the Aberdare ecosystem consists of a dense forest with several animal species including elephants, baboons, Columbus monkeys, tree and ground squirrels, porcupines and many bird species. On the slopes of the Aberdare ranges are also the Mau Mau caves in Geta and

Kimathi. The ranges offer great potential for local and foreign tourism in the County as they border the Aberdare National Park to the east and can be developed as nature trails and for mountain climbing.

These natural resources base supports and benefits sectors of the economy among others agriculture, tourism, urban and rural settlements, trade and manufacturing. Despite the importance of natural resources, they are threatened by human activities and changing natural cycles among others; population pressure, deforestation, human encroachment, climate change, degradation of ecosystems, unsustainable use and poor governance. These constraints the performance of economies, livelihoods, habitats and biodiversity for current and future generations.

The Constitution of Kenya, 2010, Article 69(2) has committed to conserve, protect and manage the environment and natural resources for sustainable use, through legislative and other measures. Numerous policies, plans, strategies, programs, institutional and regulatory frameworks have been developed at the national level, regional and local levels. Counties have and are in the process of customizing requisite frameworks and measures to their context.

1.2 Policy statement

The goal of this policy is:

Promote conservation, sustainable exploitation, utilisation and management of the natural resources for better quality of life for present and future generations and ensure the equitable sharing of the accruing benefits in the county.

1.3 Objectives of the policy

The objectives of this Policy are:

1. To provide a framework for an integrated approach to planning and sustainable management of the County's natural resources.
2. To strengthen the legal and institutional framework for good governance, effective coordination and management of natural resources.
3. To ensure sustainable management of the natural resources such as unique terrestrial and aquatic ecosystems, for the county's economic growth and improved livelihoods
4. Contribute towards the attainment of Kenya's commitments to regional and international commitments (Sustainable Development Goals, Ramsar Convention, Convention on Biological Diversity, Paris Agreement, Bonn Challenge)
5. To promote and support research and capacity development as well as use of innovative natural management tools such as The Transition Implementation Plans (TIPS),
6. To promote and enhance cooperation, collaboration, synergy, partnerships and participation of local communities in the protection, conservation, sustainable management of the County's natural resources.
7. To ensure inclusion of cross-cutting and emerging issues such as poverty reduction, gender balance, disability, HIV & AIDS and other diseases in the management of the natural resources.
8. To promote domestication, coordination and maximisation of benefits from Strategic Multilateral Natural Resource Agreements (MNRAs).
9. To embed conflict management mechanisms which support processes to manage natural resources conflicts among stakeholders.
10. To promote participation, monitoring and evaluation through learning, trust and accountability of the natural resources base and application of the policy guidelines.
11. To ensure gender and social issues in access to, and control of, natural resources as the ultimate measure of the sustainability of community-based natural resource management efforts.

1.6 Guiding Principles

Implementation of this Policy will be guided by the following principles:

1. ***Sustainable Develop:*** It seeks to limit environmental damage arising from anthropogenic activities and to lessen the depletion of non renewable resources and pollution of the environment

2. ***Ecosystem Approach:*** An integrated ecosystem approach to conserving natural resources will be adopted and enhanced to ensure that all ecosystems are managed in an integrated manner while also providing a range of benefits to the county residents.
3. ***Precautionary Principle:*** Where there are credible threats of serious or irreversible damage to key natural resources, lack of full scientific certainty will not be used as a reason for postponing cost-effective measures to prevent ecosystem degradation.
4. ***Polluter Pays Principle:*** The polluter and users of natural resources shall bear the full environmental and social impacts cost of their activities.
5. ***Polluter pays principle:*** to ensure that the party responsible for producing pollution is responsible for paying for the damage done to the natural environment
6. ***Public Participation:*** A coordinated and participatory approach to natural resource protection and management will be enhanced to ensure that the relevant county government agencies, private sector, civil society and communities are involved in planning, implementation and decision-making processes.
7. ***Subsidiarity:*** The management of the natural resources will be through decentralisation of authority and responsibilities to the lowest level possible.
8. ***Benefit sharing:*** Where benefits will accrue, these will be shared in order to promote conservation and sustainable utilization of biodiversity.
9. ***Community Empowerment:*** Communities will be involved in decision making and empowered in the implementation of such decisions.

CHAPTER TWO

2.0 SITUATIONAL ANALYSIS

2.1 Introduction

The promulgation of the Constitution of Kenya 2010 gave rise to a two-tier system of governance. The Fourth Schedule to the Constitution of Kenya outlines the obligations of the central government and those of the county governments. The obligations of the central government towards natural resource management include the protection of the environment and

natural resources with a view to establishing a durable and sustainable system of development, including, in particular, fishing, hunting and gathering; protection of animals and wildlife; water protection, securing sufficient residual water, hydraulic engineering and the safety of dams; and energy policy.

The county government is obligated to implement specific national government policies on natural resources and environmental conservation including, soil and water conservation and forestry. Further, the county governments are also supposed to ensure and coordinate the participation of communities and locations in governance at the local level and assist communities and locations to develop the administrative capacity for the effective exercise of the functions and powers and participation in governance at the local level. Within the devolved system, the Senate is expected to play an important role in fostering good governance in the management of natural resources in Kenya. County assemblies are also to play a role in NRM and development of policies, amongst other roles. The constitutional division notwithstanding, it is the responsibility of both the national and county governments to ensure sustainable exploitation, utilization, management and conservation of natural resources.

The County is endowed with diverse natural resources;

2.2 Status of Natural Resources in Nyandarua

a. Gazetted Forests:

The Nyandarua County has a forest cover of 26.2% and a tree cover of 27.5% as compared to the national forest cover of 8.3% and tree cover of 12%. The county presents an opportunity in attaining the national target of 30% by 2032. The total gazetted forest area in the County is 49,916.2 km² which is concentrated in the western side of the Aberdare Ranges. The main forest areas include five forests, namely Ndaragwa (13,233.5 ha), Lake Ol' Bolossat (3,326.9 ha), Geta (19,884.3 ha), North Kinangop (6,811.5 ha) and South Kinangop (6,660ha). The gazetted forest areas also include Lake Ol' Bolossat wetland which covers 33.3 km². Out of the total gazetted forests, plantation type of forest covers 84.3 km², natural forests area 21.2 km², grassland 39.4 km², bush land 84.35 km² and bamboo 77.01 km². There are non-gazetted forests in the County namely Kirima-Muruai, Kaimbaga Extension and Mawingu-Salient as well as two presidential tree parks within Ol'Kalou urban centre. However, most of the natural vegetation in these forests has been cleared leading to environmental hazards such as environmental degradation which has claimed large portions of forest land. This has had some negative effects such as reduced rainfall,

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soil erosion, reduced soil fertility, poor health and reduced food production. The reduction of the natural forest threatens the water catchment role of the forest while the decreasing grassland threatens the livelihoods of pastoralist communities.

<p>Strengths</p> <ul style="list-style-type: none"> • Generate income to improve livelihood • Environment conservation • Carbon sequestration • Prevent soil erosion • Supporting timber industry 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Middlemen • Ignorance on application of silvicultural practices • Lack of information on where to access quality seedlings • Failure to match the right tree species with the site • Lack of enough extension officers • Lack of County legal framework
<p>Opportunities</p> <ul style="list-style-type: none"> • Improve on Liaison with other stakeholders (CSOs, Private Sector) • Value Chain enhancement • Non-timber Forest Products • Breeding sites for Insects • Carbon Markets • Sustainable Energy • Alternative source of Timber 	<p>Threats:</p> <ul style="list-style-type: none"> • Subdivision of land for settlement establishment • Diseases and pests • Wild animals' invasion which destroys food crops • Common boundary conflict. • Forest fires. • Winds and ice storms • Overgrazing • Invasive species • Illegal logging • Climate change • Pests, insects and diseases • Conversion of forest land to other uses such as agriculture • Uncertainties of moratorium on logging in public and private farm

✓ **.On-farm forest**

On-Farm Forest refers to growing trees in private lands for commercial, subsistence and conservation purposes

Farmers in the County with large parcels of land are embracing woodlots establishment and boundary tree planting unlike the past. Due to land fragmentation, there are rampant cases of

tree-boundary conflict whereby trees are planted along the common border which hinders agricultural productivity while some destroy houses due to windfall. Every year, over 500 cases of tree boundary conflict related cases are reported at Sub - County Forest Offices. Although on-farm forest and private forests are part of devolved forestry functions, County Foresters refer the issues to KFS due to lack of legal framework to institute the matter.

Inadequate funding has thwarted forestry extension services causing low technical advices to farmers thus causing production of uncertified tree seedlings.

<p>Strengths:</p> <ul style="list-style-type: none"> • Generate income to improve livelihood • Environment conservation • Carbon sequestration • Prevent soil erosion • Supporting timber industry 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Middlemen • Ignorance on application of silvicultural practices • Lack of information on where to access quality seedlings • Failure to match the right tree species with the site • Lack of enough extension officers
<p>Opportunities:</p> <ul style="list-style-type: none"> • Value Chain enhancement • Non-timber Forest Products • Breeding sites for Insects • Carbon Markets • Sustainable Energy • Alternative source of Timber 	<p>Threats:</p> <ul style="list-style-type: none"> • High population density • Intensive cultivation • Uncertainties of moratorium on logging in public and private farms • Invasive species • Subdivision of land for settlement establishment • Diseases and pests • Wild animals' invasion which destroys food crops • Common boundary conflict.

✓ Wetland and Riparian Areas

Nyandarua county is endowed with a variety of wetlands both natural and artificial. Artificial wetlands include dams such as Gwakiongo, Sasumwa, Konoike among others. Natural wetlands include marshes, swamps and lakes.

✓ Wetlands

Nyandarua county is endowed with a lake, over 300 colonial dams, 8 permanent rivers, numerous seasonal rivers and streams traversing the county and a number of springs.

Lake Ol Bolossat is the only lake in central highland and largest water mass in the county. It is an important bird and biodiversity area and a habitat to aquatic species such as mud, cut fish and hippos. The lake is fed by springs originating from Kirima Murau escarpment, streams and groundwater seepage from the Aberdares and Ndundori hills. It is ideal for bird and hippos watching, boating, water surfing activities and sport fishing activities. It forms the headwaters for Thomsons falls and Ewaso Ngiro river which supports the livelihood of communities, livestock and wildlife in the asal Laikipia, Samburu, Isiolo and Garissa counties. Over the years the lake has experienced massive shrinking as a result of human activities.

In the last one decade, the lake's water surface area has gone from about 10,000 hectares to 3,000 hectares, escalating human-wildlife conflict as wild animals, particularly hippos, lose their habitat. The lake has been battling numerous challenges and threats including water abstraction, overgrazing, human encroachment, pollution of water from agricultural land, deforestation of its catchment areas, planted of unfriendly tree species invasion by alien species such as *Salvinia molesta* and siltation.

<p style="text-align: center;">Strength</p> <ul style="list-style-type: none"> • Gazettement of Lake Ol Bolossat as a protected area under EMCA gazette notice article 179 • Political goodwill 	<p style="text-align: center;">Weakness.</p> <ul style="list-style-type: none"> • Lack of clear area on the gazetted area as the protected area. • Lack of regulatory framework. • Conflicting laws on size of riparian area
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Ecotourism activities • Fishing • Regulated grazing and papyrus harvesting • Carbon market 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Uncontrolled water abstraction. • Lack of prioritization of natural resource management on national priorities. • Poor agricultural practices such as cultivation of crops along riparian areas causing excessive siltation. • Long legal processes and procedures that limit impact of restoration

	<ul style="list-style-type: none"> • Disposal of waste leading to pollution. • Political interference • Population pressure where by humans are force to occupy the areas due to increase in number.
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✓ Rivers and Springs

Nyandarua County is endowed with over 50 rivers flowing from the magnificent Aberdare mountains and Ndongori hills. Southern of Aberdare, the Sasumua river and its tributaries feeds into Sasumua Dam, supplying Nairobi City with Water. The Spillover forms the upper catchment of the Tana River, that transverse across 7 counties. Along the mid-section of the western stretch, numerous rivers cut across the landscape and feed into Malewa river which drain into Lake Naivasha. Towards North, a number of springs and streams drain into Lake Ol’Bolossat which flows into Ewaso Ng’iro river. The river has a length of 700km and a basin size of 231.00 km² squared flowing through arid and semi-arid areas of Laikipia, Samburu, Isiolo and Garissa counties into Merti aquifer and Lorian swamp in Wajir. However, water levels in the past few years have continuously declined due to deforestation of catchment areas and cultivation on the riparian areas leading to siltation.

Turasha river is the major tributary of Malewa river which feeds lake Naivasha dammed at an elevation of 3000m to serve Nakuru town with fresh water. The major challenges the river is facing includes but not limited to cultivation of riparian which leads to siltation, discharge of effluents into the river leading to loss of aquatic life. Malewa river rises in the western slope of Aberdare ranges and flow south and west into lake Naivasha. The river is faced by siltation problems due to quarrying and sand harvesting. River Chania originates from Aberdare ranges and drops through the heart of Thika town and cuts through Ol Donyo Sabuk national park to the southeast before joining river Tana at Masinga dam and emptying into the Indian ocean. The river is faced with siltation problems and unsustainable sand harvesting activities.

Murindati and Nyairoko river source their water from Dundori hills and empties their water’s into Gilgil river that drains into lake Naivasha. Massive deforestation in the catchment and cultivation of riparian areas have negatively impacted the water quantity. Other major permanent and seasonal rivers. These rivers, Kaimbaga, Ewaso-Narok, Turasha, Chania, Kiburu, Sasumua, Mukungi, Gitei, Kinungu, Njangiri, Nyairoko, Kiriundu and Kitiri rivers among others.

Some of the proposed interventions for the conservation of the rivers include improving water harvesting and storage systems. Such interventions require communities to construct or buy water storage tanks to harvest rainwater, and the construction of check dams for water harvesting in the laggas.

✓ f. Riparian Areas

Riparian area or land refers to land area adjacent to the river channel from their origin up to the river mouth, where the flowing water keeps in contact or influence. It can also be defined as an ecosystem that occur along water courses and water bodies.

Most riparian areas in Nyandarua are found mostly along permanent rivers such as Malewa, Turasha, Chania, Kiburu, Njangiri, Kianjogu, Gitei, Murindati, Nyairoko and Mukungi among others. Most of these riparian areas are illegally allocated to individuals who over time have subjected them to other land uses leading to their gradual destruction. Some of the activities done in these riparian areas include cultivation, clearing of indigenous vegetation, building of permanent structures and disposal of waste. Despite the existence of rules and regulations, these fragile ecosystems continue to be exploited and destroyed.

<p>Strengths:</p> <ul style="list-style-type: none"> • EMCA • Water storage & recharging subsurface aquifers • influences species distribution and interaction • provide forage for livestock • Flood control and regulate soil erosion • Wetland Restoration strategy • LOIMP • Political goodwill 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Lack of current and up to date data • Long legal processes and procedures that limit impact of restoration. • Disposal of waste leading to pollution. • Low Prioritization • Inadequate financial allocation • Mapping, enforcement • Political interference
<p>Opportunities</p> <ul style="list-style-type: none"> • Ecotourism • Biodiversity conservation • Community Engagement • Carbon sequestration • Partnership and funding • Policy and regulations enforcement 	<p>Threats:</p> <ul style="list-style-type: none"> • Encroachments • Invasive species • Poor agricultural practices • Population pressure where by humans are force to occupy the areas due to increase in number. • Uncontrolled water abstraction.

✓ g. Wildlife:

The County wildlife conservation areas include Aberdare National Park, forests, Mt Kipipiri and Lake Ol Bolossat. The Aberdare National Park is managed by the Kenya Wildlife Service (KWS). The Aberdare ecosystem consists of a dense forest with several animal species including elephants, baboons, Columbus monkeys, tree and ground squirrels, porcupines and many bird species. Challenges and threats to wildlife habitats in the county include water abstraction, overgrazing, poaching, human encroachment, deforestation of catchment areas and siltation.

✓ h. Land:

Nyandarua County has expansive land associated with the precolonial, colonial and post-independence periods. Agriculture is the main activity in the County. Nyandarua has faced challenges related to land ownership including disputes over boundaries, illegal allocation of public lands, squatter issues on private estates, and conflicts over natural resource use among the communities.

Over time, there have been efforts to implement effective land use planning strategies aimed at promoting sustainable agriculture practices while conserving natural resources. Some of the efforts include regulations for urban development areas as well as conservation plans for forests and wildlife habitats

In the Present-day the County has diversified forms of land use including small-scale farming by local communities -horticulture, large-scale commercial farming particularly in regions with favorable climate conditions such as around Kinangop area; agroforestry initiatives; conservation areas; urban settlements; industrial zones; tourism developments near Lake Ol Bolossat and Aberdare National Park; infrastructural projects like roads connecting various parts of the county; residential developments especially around urban centers like Ol Kalou , Engineer and Mairo Inya municipalities.

Land Ownership

The mean holding size per household is 2.5 ha. Land ownership in Nyandarua County include:

1. Community Land: whereby land is traditionally owned and managed by local communities.
2. Individual Land Ownership: There are also individual landowners in Nyandarua who have title deeds to private parcels of land acquired through various means including inheritance, purchase or government allocation.

3. Large-Scale Farms: During the colonial era, large-scale farms were established for commercial agriculture mainly owned by non-indigenous settlers. Some of these farms still exist today under different ownership structures.
4. Government-Owned Land: The national government and county government own various parcels of land used for public facilities such as schools, hospitals, administrative offices, roads, conservation areas among others.
5. Settlement Schemes: The post-independence period saw the establishment of settlement schemes aimed at resettling displaced communities or allocating land to small-scale farmers.
6. Public Lands: There have been concerns about illegal allocations and encroachment on public lands such as forests and grazing areas which has led to disputes over ownership rights.

Land access and land use conflicts

Land degradation is a prerequisite to conflicts and land plays a major role, once it is degraded. The conflicts emerge when land uses have incompatible interests.

Land disputes in the County have been a significant issue, often rooted in historical injustices and competing claims to land. These include; Historical injustices, Community Land disagreements, encroachment on forest areas, conservation sites and public land, rapid population growth. Rapid population growth had led to land fragmentation in areas like Wanjohi Ward in Kipipiri Sub-County, which has resulted to reduced productivity. Fragmented plots are less efficient for agricultural production as they often require more labor and resources per unit area.

<p style="text-align: center;"><u>Strengths</u></p> <ul style="list-style-type: none"> • Agricultural potential • Livestock farming • Water resources • Tourism potential • Conservation areas • Investment opportunities • Cultural heritage sites 	<p style="text-align: center;"><u>Weakness</u></p> <ul style="list-style-type: none"> • Land degradation • Natural resources degradation-Deforestation • Limited access to markets- long distances and inadequate transport infrastructure • Soil erosion • Lack of proper land use planning and management • Water logging and poor drainage
<p style="text-align: center;"><u>Opportunities</u></p> <ul style="list-style-type: none"> • Conservation Initiatives • Value addition processing facilities • Urban development 	<p style="text-align: center;"><u>Threats</u></p> <ul style="list-style-type: none"> • Land fragmentation • Soil degradation • Land conflicts (Ownership conflicts) • Climate change impacts

<ul style="list-style-type: none"> • Commercial/ Large scale sustainable agriculture • Renewable energy projects-Solar, Hydro power • Tourism and hospitality • Agro-forestry 	<ul style="list-style-type: none"> • Deforestation • Pollution
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j. Soils:

The soils in the County are of volcanic origin and vary in both fed distributions. The county is dominated by planosols formed from volcanic ash and are regarded as degraded with the surface soil being acidic due to their improved drainages, water logging and poor soil organic carbon. Soils in the Kinangop and Ol’Kalou plateau are poorly drained clay loams. However, Ndaragwa, northern part of Ol’Joro Orok and Ol’Kalou has well drained clay loams. These soils have different crop production potentials. The soil fertility is affected by poor soil conservation measures leading to land degradation that are either natural or human induced. Natural hazards include land topography and climatic factors such as steep slopes, landslides from frequent floods, blowing of high velocity winds, rains of high intensity, strong leaching in humid regions and drought conditions in the dry regions. Consequences to land degradation has led to increased use of inputs and greater costs where farmers attempt to combat reduction in yields with increased inputs, particularly fertilizers.

k. Mountains:

The Aberdare Ranges are one of the country’s major water catchment areas. Moreover, the Aberdare ecosystem consists of a dense forest with several animal species including elephants, baboons, Columbus monkeys, tree and ground squirrels, porcupines and many bird species. On the slopes of the Aberdare ranges are also the Mau Mau caves in Geta and Kimathi. The ranges offer great potential for local and foreign tourism in the County as they border the Aberdare National Park to the east and can be developed as nature trails and for mountain climbing. With the catchment dominated by agricultural lands, the forest cover has gradually decreased. The threats to the catchment include encroachment of the forest, illegal logging, charcoal burning, collection of firewood, illegal grazing and cultivation, and excessive abstraction of water for irrigation, flower farming and fish farming activities.

m. Wind energy and solar generated power;

With great sun and wind energy potential, the county has an inherent advantage in terms of clean energy. Potential to generate electricity by use of wind power within the County is found within Kinangop and Kipipiri (Mt. Miharati) areas, Feasibility study should be undertaken to determine potential of solar energy within Ndogino and Mbuyu areas of Ndaragwa. Challenges affecting wind and solar power sources include land acquisition issues, lack of political goodwill, high up-front system costs and lack of reliable knowledge about the technology.

j. Mining (Quarrying & Sand Harvesting);

Quarrying is a huge supporter of local economic development in the County by enhancing trade and job creation. Most people in quarrying regions wholly depend on these quarrying for their livelihoods aside from other economic activities.

Quarrying activities in Nyandarua County are predominant in Ol Kalou, Kinangop and Ndaragwa Sub-Counties. The quarried material is mainly murram, sand, dimension stones, gravels, pumice and pebbles and hardcore that is mainly used for road works and general construction. These quarrying activities has resulted to depleted and abandoned borrow pits and quarry site. Occupational safety hazards and accidents due to rock falls and bench failure which has claimed lives more so in Ol Kalou quarry. Hazards by movements of quarrying /mining equipment are also rampant. The disposal of the overburden has been poorly managed leaving heaps of soil around causing siltation and contamination of local streams and wetlands. The use of explosives which is mainly used to blast boulders in few quarries and on roads being constructed has had a fair share of impacts to the environment by causing increase in noise levels, dust pollution and alterations of soil profiles which poses a threat to nearby public utilities and infrastructure such as roads and schools.

Sand harvesting is on the rising trajectory because of the increased demand from the construction industry and self-employment. Most of the sand harvesting activities in Nyandarua County is done along river Malewa, Chania, Gitwe and Mahinga in Kipipiri and in Kenton hills. In spite of this, sand harvesting has had a significant effect on land management since big deposit of sand downstream may be as a result of erosion upstream and destruction of vegetation cover.

Problem Statement

There is continuous land degradation in water catchment areas including prolonged droughts, frost in some of the productive agricultural areas, hailstorms, extreme flooding, receding Lake Ol Bolossat levels, the drying of rivers, invasive insects and outbreaks of human and livestock diseases. All this has led to large economic losses including loss of lives. The county does not have a comprehensive Natural Resource Policy and regulation hence a challenge in enforcement.

In addition, there is weak enforcement of the of existing regulation in closely related sectors. The

public has low level of awareness of the potential benefits emanating from the available natural resources contributing to their degradation from overexploitation.

Justification

The County's natural resource base and strategic positioning requires an enabling legal framework to guide actions in conservation, protection, management and sustainable use.

Since natural resource management is multisectoral, encompassing many sectors, including environment, agriculture, irrigation, forestry, livestock, water supply and energy, amongst others, there is a necessity for multi-sectoral cooperation, particularly at the decentralised district levels, which are the focal points of service delivery and support to sustainable management of natural resources.

Natural resources management is facing an accelerating transformation. In Kenya, advances in science and technology, shifting consumption patterns, continuing population growth, trade globalization, friction in subsidy regions and the impacts of local and global environmental changes are leading to new and serious risks to sustainable management of water systems, land, forests, rangelands and other natural resources. The complex and dynamic context of natural resources use in the County, necessitates an integrated and community-based approach.

In recent times, environmental and natural resource problems have increasingly come to the fore. Hence the science of sustainable natural resource management as well as the prudent policy making are vital for development of the County. This is in light of the fact that NRM issues have expanded beyond traditional concerns of biophysical processes in air, land and water to new frontiers of integrated natural resources management and mainstreaming of climate change.

Rapid urbanisation, shrinking productive land and technological changes are some of the significant changes. These interlinked components provide the backdrop against which to view changes in the state of the county's natural resources. This is because they serve a dual purpose as some of the most forceful drivers of change.

In the County, the main human activities contributing to natural resources degradation include unsustainable land use practices, poor soil and water management practices, deforestation, overgrazing and pollution.

These activities contribute a great deal to degradation of the county's natural resources such as land, fresh water and biodiversity thereby threatening the livelihoods of many people. They also undermine the sink function of the natural resources which operates through such processes as nutrient recycling, decomposition and the natural purification and filtering of air and water.

Natural resource degradation in the County directly contributes to impacts of climate change as is witnessed in the reduction in surface water, food production potential and erratic weather patterns. These are not only increasing human vulnerability and food insecurity but also draining the county's economic resources. The expansion of human activities into marginal areas leading to clearance of natural habitats such as forests and wetlands has been a major driving force behind land degradation throughout the country. The continuous loss of biological resources translates into loss of economic potential and options for commercial development. This backdrop provides the justification for this Natural resource Policy. It gives the framework to guide the county's efforts in addressing the ever-growing Natural Resource issues and challenges such as:

- ***Natural Resources governance:*** There are no policies and laws governing Natural resource management in line with the Constitution. The policies and laws concerning agriculture, land, water, forests, trade and industry, which have significant implications on the natural resources are not properly harmonised in terms of Natural resource management. The sectoral rather than integrated and ecosystem approach to management of natural resources has proved inadequate in addressing natural resource management challenges. In addition, weak enforcement of laws and weak implementation of policies remain a major issue of concern in the County's Natural resource management sector.
- ***Loss of biodiversity:*** The County continues to lose her biodiversity due to habitat destruction, overgrazing, deforestation, pollution, unsustainable harvesting of natural resources, and introduction of invasive and alien species, among others. Invasive and alien species are a major threat to the Lake Ol Bolossat Ecosystem among others. They threaten indigenous species through the effects of predation, alteration of habitat or disruption of ecosystem processes. The challenge of dealing with loss of biodiversity becomes even more complicated when one is dealing with shared resources where laws and policies of respective counties are not harmonised.
- ***Valuation of natural resources:*** The value of natural resources is hardly reflected in pricing of marketed goods and services. Natural resources are largely considered as

public goods. This is symptomatic of market failure. Integrating Natural Resources considerations into the behaviour of enterprises and consumers would reflect a change in consumption and production patterns. Prioritisation of natural resources remains low among policy makers partly due to inadequate appreciation of the total economic value of the sector. Thus, there is less public investment in the sector.

- ***Rehabilitation and restoration of natural resources:*** There are several degraded areas in the County which require rehabilitation and restoration. These include lake Ol Bolossat encroachment, siltation and overgrazing, siltation and erosion in riverbanks, deforestation, encroachment, overgrazing, charcoal burning and fires in the forested areas, hilltops and disused quarries.
- ***Climate change, energy, security and disaster management:*** Climate change poses significant challenges to natural resources in the County as evidenced by erratic weather, frequent droughts and water shortages. This is happening at a time when power demand is on the rise and utilisation of renewable energy sources exclusive of hydro remains relatively low. Other adverse impacts of climate change can be seen in the form of frequent and severe natural disasters such as floods, landslides and prolonged droughts. Increased frequency and intensity of extreme climatic conditions continue to undermine the county's sustainable development. Managing climate-related disasters remains a significant challenge.
- ***Public participation and awareness:*** Broad public participation in decision making processes is one of the fundamental preconditions for sustainable development. This presupposes access to timely and accurate information on the sound natural resources management has to be based on openness and participation at all levels within the county. Therefore, it is imperative that education and public awareness on natural resources is promoted at all levels.
- ***Data and information:*** Inadequate and disaggregated data is a challenge for integrated planning and management of the natural resources and undertaking total economic valuation.
- ***Poverty:*** Rising poverty levels have impacted negatively on the natural resources. Poverty is a major cause and consequence of nature's degradation and resource depletion because of lack of alternatives. The poor rely heavily on the natural resources for their livelihoods.

- ***Chemicals Management:*** Chemicals are an important contributor to national development across all sectors. They form an important input to agriculture, manufacturing, energy, leisure and as ingredients to commonly used materials such as plastics, electronics, refrigerators and air conditioning. They improve the quality of life as medicines, cosmetics, foods, leisure etc. Unfortunately, they can also be dangerous because of their toxic and hazardous nature. Chemicals can be flammable, explosive and carcinogenic directly or through air, water, food and materials. These inherent risks need to be managed at production, use, transport and when it turns to waste disposed of in a sound manner.

Capture the issue of:

- Mining
- Pollinators
- Riparian and Wetland encroachment

CHAPTER THREE

3.0 LEGAL FRAMEWORK

The Constitution of Kenya, 2010.

Participation by local communities in the governance affairs of a county's natural resources has been hailed as an indication of good democratic governance as well as the respect and promotion of the rights of the citizens. One of the most outstanding features of the current Constitution of Kenya, 2010, is the principle of public participation in the governance affairs of the country. The Constitution calls for respect of the environment, being the people's heritage.

Chapter 5 of the Constitution gives provisions on environment and natural resources. Article 69, sub-article (a), provides that the state shall ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits. In addition, it places a duty on every person to cooperate with the state organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources. Essentially, this indicates that people's participation in natural resources management is not only a right, but also a duty of every citizen - something that this policy seeks to enforce.

The Fourth Schedule to the Constitution of Kenya outlines the obligations of the central Government and those of the County Governments. The obligations of the central Government towards natural resource management include the protection of natural resources with a view to establishing a durable and sustainable system of development, including, in particular, fishing, hunting and gathering; protection of animals and wildlife; water protection, securing sufficient residual water, hydraulic engineering and the safety of dams; and energy policy.

The County Government is obligated to implement specific National Government policies on natural resources conservation including, soil and water conservation and forestry. Further, the County Governments are also supposed to ensure and coordinate the participation of communities and locations in governance at the local level and assist communities and locations to develop the administrative capacity for the effective exercise of the functions and powers and participation in governance at the local level. Within the devolved system, the Senate is expected to play an important role in fostering good governance in the management of natural resources in Kenya. County assemblies are also to play a role in NRM and

development of policies, amongst other roles. The constitutional division notwithstanding, it is the responsibility of both the national and County Governments to ensure sustainable exploitation, utilization, management and conservation of the natural resources.

International Conventions and treaties

The Ramsar Convention

The Ramsar Convention is an international treaty for the conservation and sustainable use of wetlands. Wetlands are a critical component of the natural environment. They reduce the impact of flooding by absorbing excess water, are habitats for plant and animal species, and are a major source of water human activities. Wetlands are critical for the maintenance of life on earth. Kenya's wetland cover is approximately 14,000 km², which is 3 - 4% of the country's surface area (Government of Kenya, 2015). To protect Kenya's wetlands, the country signed the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar, 1971) on October 1990.

Convention on Biological Diversity

Signed by 150 government leaders at the 1992 Rio Earth Summit, the Convention on Biological Diversity is dedicated to promoting sustainable development. Conceived as a practical tool for translating the principles of Agenda 21 into reality, the Convention recognizes that biological diversity is about more than plants, animals and microorganisms and their ecosystems – it is about people and our need for food security, medicines, fresh air and water, shelter, and a clean and healthy environment in which to live. The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Paris Agreement

The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015 and entered into force on 4 November 2016. Its overarching goal is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels”

and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels.” However, in recent years, world leaders have stressed the need to limit global warming to 1.5°C by the end of this century. That’s because the UN’s Intergovernmental Panel on Climate Change indicates that crossing the 1.5°C threshold risks unleashing far more severe climate change impacts, including more frequent and severe droughts, heatwaves and rainfall. Kenya’s enhanced NDC targets a 32% reduction in GHG emissions by 2030. The NCCAP serves as the key planning document to mainstream and implement climate change actions.

African Convention on The Conservation of Nature and Natural Resources

One of the objectives of the African Convention on the Conservation of Nature and Natural Resources under Article 2 is to foster the conservation and sustainable use of natural resources. Article 7(3) provides that the Parties to the Convention shall promote the establishment by local communities of areas managed by them primarily for the conservation and sustainable use of natural resources. Article 9 (1) (a) mandates the Parties to ensure that conservation and management of natural resources are treated as an integral part of national and/or local development plans.

National Policies

County Government Act, 2012

An Act of Parliament to give effect to Chapter Eleven of the Constitution; to provide for county governments' powers, functions and responsibilities to deliver services and for connected purposes. The national government under article 187 give powers to the county government for the implementation of specific national government policies on natural resource and environmental conservation and forestry. The county government needs to develop policies and legislations for the best practice in Soil conservation, forestry policy development, Water catchment conservation control and protection.

Sand Harvesting Regulations, 2022

The main objective of the proposed regulations is to ensure sustainable utilisation of the sand resource and proper management of the environment, promote sustainable exploitation, utilisation management and conservation of the environment, reduce environmental damage and facilitate economic development and socio-economic benefits.

Forest Conservation and Management Act, 2016.

This act makes provision for the conservation and management of public, community and private forests and areas of forest land that require special protection. It also makes provision for community participation of forest lands by community forest associations, the trade in forest products, the protection of indigenous forests and the protection of water resources. The act also defines forestry functions of county governments.

Wildlife Conservation and Management Act, 2013

An act of Parliament to consolidate and amend the law relating to the protection, conservation and management of wildlife in the county; and for the purpose connected therewith and incidental thereto.

It is desirable that the present powers relating to the management and conservation of wildlife and its ecosystem in the county should be amalgamated and placed in a consolidated Service of the Government; prime objective of the Service should be to ensure that wildlife is managed and conserved so as to yield to the county and to individual areas in particular, optimum returns in terms of cultural, aesthetic and scientific gains as well as such economic gains as are incidental to proper wildlife management and conservation and which may be secured without prejudice to such proper management and conservation; it is necessary, for the achievement of that objective, that full account should be taken of the varied forms of land use and the interrelationship between wildlife conservation

Charcoal Act, 2015

An Act of the County to regulate and manage the production, use and trade of charcoal and for connected purposes. The purpose is to establish the County Environmental Committee to ensure enhanced and effective forest conservation, protection and sustainable charcoal production in the provision of economic, social and environment goods and services; and for connected purposes. These Regulations concerns the licensing of charcoal production in all Forests in the county. The County Forest team shall be the competent authority responsible for the issuance of licences for the production and transportation of charcoal. The Regulations further require all commercial charcoal producers to organize themselves in charcoal producer associations. Such associations shall, among other things, ensure that its members implement the reforestation conservation plans. Control on commercial charcoal production shall further be carried out by licensing committees established within forest conservation committees.

Environmental Management and Coordination Act, 1999

An Act of Parliament to provide for the establishment of an appropriate legal and institutional framework for the management of the environment and for matters connected therewith and incidental thereto

The Environmental Management and Coordination Act (EMCA), 1999, is the framework law on environmental management and conservation. EMCA establishes among others the following institutions; National Environment Management Authority, Public Complaints Committee, National Environment Tribunal, National Environment Action Plan Committees, and County Environment Committees. The National Environment Management Authority (NEMA) was established as the principal instrument of government charged with the implementation of all policies relating to the environment, and to exercise general supervision and coordination over all matters relating to the environment. In consultation with the lead agencies, NEMA is empowered to develop regulations, prescribe measures and standards and, issue guidelines for the management and conservation of natural resources and the environment.

CHAPTER FOUR

4.0 IMPLEMENTATION MECHANISM

4.1 Policy statements on management of ecosystems and sustainable use of natural resources.

Ecosystems provide a wide range of goods and services. These include provisioning, regulating, cultural and supporting services. Despite the services they provide, ecosystems are under pressure from human activities. The most critical ecosystems in the County include forests, freshwaters, wetlands, mountains, semi-arid and spectacularly diverse wildlife populations. Within these ecosystems are key natural and cultural heritage resources which support diverse biodiversity and provide natural capital for economic development and support livelihoods.

4.1.1 Forests Ecosystems

Forests landscapes provide ecosystem services, such as timber, food, fuel, fodder, non-wood products and shelter – which are essential for human well-being. At the same time, they contribute to soil and water conservation, carbon storage and clean air. When forests are sustainably managed, they can be healthy, productive, resilient and renewable ecosystems, which can thrive while at the same time providing essential goods and services to people worldwide.

The conservation and sustainable development of forest ecosystems and their associated resources is essential for sustainable poverty reduction and sustainable development. Forest ecosystems are important in conservation of soil, water and biodiversity as well as in moderation of climate. Maintaining forest biodiversity safeguards the economic potential of future opportunities for new non-timber products such as food and medicine as well as social sustainability by offering aesthetic, spiritual and recreational settings for people. The County's Forest resources are being subjected to overwhelming pressure from competing land uses like agriculture, timber industry, human settlement and development of infrastructure. In addition, extraction of forest products, illegal logging, cutting trees for fuel wood and charcoal and grazing of livestock have also contributed to the degradation of forests. These competing land uses have adverse effects on long term sustainability of forest ecosystems.

Large scale loss of forests would lead to catastrophic, permanent change in the county's ecology with consequent loss of agricultural productivity, industrial potential development,

living conditions and aggravated natural disasters such as floods and drought. It would also endanger the county's water supplies since the major water towers are located in forested lands.

The 19th session of United Nations Forest Forum (UNFF19) outlines that the thematic priorities should be based on the Global Forest Goals (GFGs) and targets, taking into account the programme of the High-level Political Forum on Sustainable Development (HLPF) and other relevant international forest related developments.

The thematic priorities for UNFF19 are:

- Enhancing forest-based economic, social and environmental benefits
- Increase significantly the area of protected forests and other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests
- Mobilizing financial resources and strengthening scientific and technical cooperation; promoting governance frameworks to advance implementation; and enhancing cooperation, coordination and coherence, for sustainable forest management.

Action Plan

The County Government will:

- 1. Develop a Forest and tree growing Bill that will guide in forestry management in On-farm forests, county forests and private forests.*
- 2. Formulate strategies to increase forest and tree cover to contribute towards the 15 bn tree strategy of 30 % by 2030.*
- 3. Develop and implement a county strategy for rehabilitation and restoration of degraded forest ecosystems and water catchment areas with active community involvement/participation.*
- 4. Support effective implementation of the forest and other related policies and laws.*
- 5. Formulate plans, programmes, strategies, standards, principles and policies that promote sustainable forest management and tree value chain in the County.*
- 6. Encourage development and implementation of appropriate forestry-based investment programmes and projects.*

7. *Involve and empower communities in the management of forest ecosystems through formation of Community Forest Management Associations.*
8. *Promote agroforestry practices such as plantations of crop combinations under multipurpose tree systems, intercropping with green covers in perennial woody crops, and inclusion of livestock, which contributes to achieving multiple benefits.*

4.1.2 Freshwater, Riparian zone and Wetland Ecosystems

Freshwater resources and wetlands form an important part of the County's natural resources with considerable provisioning, regulatory and supporting services. Their provisioning services include the storage and retention of water for domestic, agricultural and industrial use. Their regulating services include modifying water flows, recharging and discharging groundwater resources and diluting or removing pollutants. Their supporting services are important for soil formation and retention as well as nutrient cycling. These ecosystems also provide habitats for a great number of plant and animal species.

These critical ecosystems face numerous threats, most of which are human driven. Across the county, there is increased encroachment and illegal settlement onto the wetlands and riparian lands. Poor and unsustainable agricultural activities have left these ecosystems prone to soil erosion, increased pollution from agro-chemicals. Introduction of water-thirsty exotic trees along the riparian lands and in the wetlands have resulted to increased vulnerability of these ecosystems. Other threats include pollution, sedimentation and over-exploitation of wetland resources, introduction of alien species and adverse effects of climate variability. These have caused extensive degradation, reduction in water quality and quantity and loss of freshwater and wetland ecosystem goods and services.

To enhance the conservation of freshwaters, wetlands and riparian areas, deliberate effort to control encroachment and illegal settlement must be made. Scientific guided site-species matching must be carried out. Mapping and regular updating of a database of all the sources of freshwater, wetlands and riparian areas must be carried

Action Plan

The County Government will:

1. *Develop and implement integrated freshwater and wetland resources management strategies and action plans in consultation with relevant stakeholders.*

- 2. Map the riparian zone and gazette the zone as environmentally sensitive for protection.*
- 3. Developing management guidelines on management of the riparian ecosystem*
- 4. Promote and institutionalise user pay principle and payment for ecosystem services for natural resource services schemes to support catchment protection and conservation.*
- 5. Promote sustainable use of freshwater and wetland resources and the conservation of river and lake ecosystems through development and implementation of river basin management plans.*
- 6. Promote sustainable management of Lake Ol'Bolossat (Protected area, Ramsar Site, Nature Reserve, ENESCO Biosphere Reserve).*
- 7. Ensure rehabilitation and restoration of degraded wetlands, riverbanks and lakeshores and, as appropriate, promote and support establishment of constructed wetlands.*
- 8. Harmonise and coordinate the roles of various regulatory agencies charged with the management of freshwater and wetland ecosystems.*
- 9. Involve and empower communities in the management of freshwater and wetland ecosystems.*

4.1.3 Land

Land provides vital environmental functions and ecosystem services, including provisioning, regulating, supporting and cultural services. These ecosystem services support production of food, feed, fuel, and fibre to society, regulates risks of natural hazards, and provides cultural and spiritual services for human well-being. Sustainable Land Management (SLM) is a holistic approach to achieving long-term productive ecosystems by integrating biophysical, socio-cultural and economic needs and values.

Land is a key resource and is the basis of livelihood for the vast majority and a foundation of economic development of the County. Land resources are scarce, fragile and non-renewable and are considered a capital and asset that provides the essential services for development and human well-being. Consequently, the demand and pressure on land is ever increasing. The main driving force leading to pressure on land resources in the County is the increasing rate of population growth, hence demand for more food and shelter.

The unsustainable use of land in urban and rural areas remains a major challenge to all residents in the County due to the serious impact on the natural resources. Activities contributing to land degradation include unsuitable agricultural land use, poor soil and water management practices, deforestation and overgrazing. Natural disasters, including droughts, floods and landslides also contribute to land degradation.

Action Plan

The County Government will:

- 1. Ensure implementation of the Constitution and the National Land Policy in a way that will take into account sustainable conservation and management of land resources.*
- 2. Promote and enhance best practices for optimal and sustainable land use through capacity building of relevant stakeholders*
- 3. Promote urban greening.*
- 4. Promote land restoration strategies and guidelines.*
- 5. Promote research on land use in relation to the built environment.*
- 6. Involve and empower communities in land utilisation and management.*
- 7. Promoting land rehabilitation and reclamation*

4.1.4 Soils

Quality fertile soils are a foundation of sustainable agriculture. Soils are also essential in the hydrological cycle. Soil degradation processes of particular concern throughout the county include erosion, compaction and soil fertility depletion. Loss of natural habitats has reduced vegetation cover and exposed soils to extensive wind and soil erosion in many parts of the county.

Soil erosion is a major factor in land degradation and has severe effects on soil functions, such as the soil's ability to act as a buffer and filter for pollutants, its role in the hydrological and nitrogen cycle and its ability to provide habitat and support to biodiversity. Soil erosion also causes increased rates of siltation of dams and rivers and increased risk of flooding in rivers and estuaries. Thus, soil erosion reduces the productivity of land, requiring farmers to apply more and more fertilizers and other chemicals that help check declining productivity. The resultant excessive use of fertilizers and other chemicals contributes to soil degradation and water pollution.

Action Plan

The County Government will:

- 1. Implement the National Soil Conservation Policy.*
- 2. Promote and support eco and organic farming so as to maintain soil fertility.*
- 3. Ensure the protection of wetlands, riverbanks, hilltops and slopes from unsustainable practices to prevent soil erosion and environmental degradation.*
- 4. Promote good soil management practices to avert landslides, mudslides, floods and other disasters that are preventable.*
- 5. Involve and empower communities in soil conservation.*

4.1.5 Biodiversity

Nyandarua County is home to unique biodiversity including insects, birds, reptiles as well as underground biodiversity. The unique highland grasslands of Kinangop are home to Kenyan endemic and globally threatened Sharpe's Longclaw as well as other specialized birds. The Lake Ol'Bolossat and the numerous wetlands across the county are home and breeding grounds for many resident water birds including the endangered Grey Crowned Crane. They are also important wintering grounds for migrant water birds. The lake is also home to other fauna including hippopotamus and other fish species.

The diverse insects across the county form an integral part of the broader food web. Though mostly overlooked, insects are very vital in pollination and supporting other ecological services. They are unfortunately negatively impacted by the use of agro-chemicals as well as other unsustainable agricultural services.

Biodiversity contributes to a wide variety of natural resources, such as generation and conservation of fertile soils, dispersal and breakdown of wastes, pollination of many crops and absorption of pollutants. Human health and well-being are directly dependent on biodiversity. Biodiversity also provides genetic resources for food and agriculture and therefore constitutes the biological basis for food security and support for human livelihoods.

Loss of biodiversity is going on at an unprecedented rate. The most important drivers for biodiversity loss are land degradation, climate change, pollution, unsustainable harvesting of natural resources, unsustainable patterns of consumption and production and introduction of invasive and alien species. Such invasive alien species are *Salvinia molesta*, Eucalyptus, New thorny weed in the lake constitute major threats to biodiversity in the County.

Action Plan

The County Government will:

- 1. Implement the National Biodiversity Strategy and Action Plan (NBSAP).*
- 2. Regulate and encourage sustainable utilisation and bioprospecting of biological resources in accordance with existing laws.*
- 3. Develop mechanisms to ensure that the benefits arising from access to genetic resources, including intellectual property rights, traditional knowledge and technology are shared equitably with communities living in areas where the genetic material originated.*
- 4. Develop and implement a strategy to contain, control and mitigate alien and invasive species in consultation with relevant stakeholders*
- 5. Protection of endangered species including bird species*
- 6. Develop guidelines on site species matching, areas and zones to plant eucalyptus*

4.1.6 Wildlife

Wildlife resources contribute directly and indirectly to the local and national economy through employment, revenue generation and wealth creation. The increasing population, human–wildlife conflicts, widespread pollution, climate change and the transformation of vast wildlife areas into other land-uses threaten the continued existence of wildlife in the county. Lake Ol’Bolossat is home to over 300 hippopotamus. The County is one of the key conservational hotspots for wildlife. A big portion of the Aberdare Forest and National Park are in Nyandarua County. These highland forests are home to large mammals including Forest Elephant, Buffalo, Leopard, Rhino as well as numerous antelopes including the endangered Bongo. Although beyond the mandate of the County Government, the conservation of these unique wildlife is of major concern to the county government. Benefits accrued from tourism should also be trickled to community around the forest reserve and national park.

Action Plan

The County Government will:

- 1. Protect, conserve and improve the habitats, corridors and dispersal areas of wildlife.*
- 2. Provide incentives for investment in sustainable tourism and wildlife conservation initiatives.*

3. *Promote the establishment of transboundary wildlife conservation areas as a basis for enhancing the conservation of shared wildlife resources and their ecosystems through relevant regional instruments.*
4. *Encourage and support the establishment of private and community-based conservation areas in order to win more space for wildlife.*
5. *Maintain all gazetted protected areas, reclaim and restore the encroached reserves for enhanced wildlife conservation.*
6. *Strengthen and support wildlife research and monitoring to generate adequate information for decision making.*
7. *Protect endangered wildlife species in collaboration with relevant stakeholders.*
8. *Involve and sensitize the community in conservation activities.*
9. *Collaborate with KWS in development and enforcement of framework for conservation and reduction of human wildlife conflict.*

4.1.7 Fisheries

Fisheries contribute a significant proportion to Kenya's GDP. It also plays an important role in ensuring food security. Though not fully developed, fisheries sector is quickly becoming a major contributor of protein needs. Lake Ol' Bolossat is the major source of fisheries locally (madfish) while major rivers form a steady supply of trout fish.

Fisheries development in Nyandarua mirrors the overall state of Kenya's fishery resources and their ecosystems is deteriorating due to unsustainable fishing practices, habitat destruction, pollution and weak management structures. Other challenges include uncoordinated development approaches, low investment and inadequate aquaculture development, weak linkages between research and management and cross-border conflicts. To reverse this trend and achieve sustainability of fisheries, careful stewardship is required to conserve and protect all aquatic habitats for present and future generations.

Action Plan

The County Government will:

1. *Promote sustainable management and utilisation of fishery resource*
2. *Strengthen capacity of the Officers to carry out fisheries monitoring, control and surveillance.*
3. *Promote sustainable aquaculture development.*

4. *Strengthen community participation in fisheries resources management, value addition and marketing.*
5. *Protect fish breeding grounds and implement closed seasons regulations where necessary.*

4.1.8 Mining

The County's mineral potential is yet to be fully exploited due to lack of adequate geological information on deposits occurrence. With countywide coverage of geological surveys and mineral exploration, it is possible to fully exploit the mineral potential. Increased mining activity, including quarrying and harvesting of sand, may result in natural resource degradation unless measures are taken to guide and control operations in the mining sub-sector.

Mention the main minerals and main challenge

Capture the impacts of the mining on the natural ecosystem explicitly

Action Plan

The County Government will:

1. *The County will Develop a legal framework that will guide in quarry management in both private and public land.*
2. *Promote and implement mechanisms for sustainable harvesting key resources namely but not limited to: sand, building stones, any mining activities; untapped bio-deposits at the lake Ol' Bolossat*
3. *Ensure rehabilitation and restoration of all mining sites including quarries by enforcing the existing laws.*
4. *Encourage equitable exploitation and sound management of mineral resources while ensuring local participation and involvement of indigenous enterprises for investment in the mining sector.*

4.1.9. Semi-Arid Lands Ecosystems (SALs)

In the County all the grasslands are in the SALs. The SALs therefore provide critical habitats for wildlife and ecosystem diversity, including grasslands and wetlands for migratory species. Grasslands are well known as the habitats of the greatest assemblages of large wild mammals in the world and support a rich bird fauna. Consequently, grasslands are important for nature-based tourism, extensive livestock production and recreation activities as well as for water conservation and erosion control.

SALs are fragile but very resilient ecosystems that receive very low and unreliable rainfall. The main form of land use in SALs is livestock grazing mainly cattle, goats and sheep accounting for a large proportion of the total livestock population in the county.

The main threats to SALs include expanding agriculture, charcoal burning and fuel wood collection, uncontrolled fires, human settlements, land degradation, deforestation and overgrazing. Climate change influences the ability of SALs to cope with these challenges.

Capture the county context and localize with mention of SALs area (Ndaragwa) in the county

Action Plan

The County Government will:

- 1. Develop and implement an Integrated Land Use Master (Development) Plan for the SALs.*
- 2. Promote integrated natural resource management in SALs.*
- 3. Ensure application of Integrated Water Resources Management (IWRM) in SALs with a view to harvesting flood and river water.*
- 4. Promote efficient adaptation measures for productive and sustainable resource management in the SALs.*
- 5. Implement the National Action Plan (NAP) to combat desertification.*
- 6. Mainstream dryland issues into all County development plans and policies.*
- 7. Involve and empower communities in the management of SAL ecosystems.*

CHAPTER FIVE

5.1 NATURAL RESOURCE STEWARDSHIP

Stewardship of the natural resource management refers to a precautionary approach to natural resource management challenges, promoting greater responsibility and development and diffusion of friendly technologies. It means taking responsibility for our choices. The responsibility for natural resources quality should be shared by all those whose actions affect the natural resources. Sustainable development requires that at competitive prices, business and industry can supply goods and services that meet societal and individual needs, contribute to improved quality of life and ensure management and efficient use of renewable and non-renewable resources.

5.1.1 Natural Capital and Valuation

Natural capital is the extension of the economic notion of capital (manufactured means of production) to goods and services relating to the natural resources. Natural capital is thus the stock of natural ecosystems that yields a flow of valuable ecosystem goods or services into the future. Since the flow of services from ecosystems requires that they function as whole systems, the structure and diversity of the system are important components of natural capital.

The challenge is a reliable way to assess the true value of the services that natural resources provide, that is, what is their worth, what their loss would cost and what can be done about the loss.

The policy implication is that their future competitiveness and well-being depend heavily on improving the efficiency of natural resource use. It involves undertaking total economic valuation of county capital which include the review of what is known about the natural resources' services generated by natural capital, the ways in which humans benefit from those services and the ways in which human activities impact natural capital and change the future flow of services derived from it. This will lead to the green economy.

Action Plan

The County Government will:

- 1. Document and value natural capital and provide periodic assessments to support county accounting and planning.*
- 2. Develop and apply instruments and methodologies for Natural resource accounting into the County accounting and planning processes.*

3. *Promote rational and sustainable use of natural capital to ensure intergenerational equity.*
4. *Promote existing and develop new incentives for the payment of the ecosystem services as a measure to secure and invest in the natural capital.*
5. *Develop a monitoring and reporting framework for a range of stakeholders to monitor their use of natural capital, periodically assess and cost degradation.*
6. *Enhance Natural Capital Value through enhanced conservation activities and capacity building.*
7. *Involve and empower communities in periodic assessments of natural capital.*

5.1.2 Trade and Natural Resource Management

Trade is an important driver of economic growth. The County is committed to local, regional and international trade. The trend towards globalisation has in part reduced barriers to international trade and investment flows. The County focuses on trade in natural resources, such as fuels, forestry, mining horticulture and fisheries. A key question is to what extent the County gains from trade in natural resources. The role of trade in providing access to natural resources, the effects of international trade on the sustainability of natural resources and the so-called natural resources curse, and resource price volatility.

Trade has both direct and indirect effects on the Natural Resource and society. Trade-offs in natural resources between economic gains, environmental impacts and social effects must be made taking into consideration the multilateral trading systems. Trade liberalisation within the framework of sustainable development and its contribution to poverty reduction remains a priority concern for the County Government.

Action Plan

The County Government will:

1. *Mainstream natural resource management considerations into the County trade and investment Policy.*
2. *Ensure that issues on natural resources are integrated into international, national and regional trade negotiations and domesticate resulting agreements.*
3. *Promote and support capacity building in the field of trade and natural resources.*
4. *Promote and encourage the adoption, uptake and implementation of international natural resources stewardship standards.*
5. *Promote reduction of negative natural resource footprints in production and trade practices.*

5.1.3 Tourism and Natural Resources

Tourism is a source of income for the County and Kenya. However, the industry has suffered from decline in per capita spending, average length of stay and hotel occupancy rates. This is as a result of natural resource degradation and deterioration in the quality of tourism products. Whereas there is growing recognition that tourism does have some negative impacts on natural resources, there is need to gather more empirical evidence on the subject. There is also need to have a clear policy direction for mitigating the adverse and enhancing the positive natural resource management in tourism.

The main concern is that despite the county's Tourism policy advocating spatial distribution of tourists in the county, tourism marketing has continued to focus on the traditional attractions, thereby perpetuating concentration.

Action Plan

The County Government will:

- 1. Provide incentives to encourage ecotourism industry initiatives aimed at protecting the natural resources in the County.*
- 2. Improve policy implementation and strictly enforce natural resources regulation.*
- 3. Set up a framework for information exchange and for natural resources awareness creation of all stakeholders in the tourism industry.*
- 4. Market "green" tourism products in trade shows and exhibitions locally, nationally, regionally and internationally.*
- 5. Encourage the promotion of investment in sustainable tourism, including ecotourism and cultural tourism.*
- 6. Encourage community participation in the tourism industry through establishment of community-based tourism activities.*

5.1.4 Consumption and Production Patterns

Changing patterns of consumption and production through integration of natural resources considerations in all sectors is a prerequisite for sustainable development. Most production and consumption practices do not take into account the associated environmental costs. As a result, the benefits provided and accounted for by natural resources appear to be much smaller than actual.

An integrated accounting system will ensure that environmental costs in production systems are considered. Unsustainable consumption and production practices of natural resources

have been growing, resulting in many of today's environmental challenges. Environment-friendly technologies can yield enormous environmental benefits and lay the foundation for a green economy. There is a need to develop and apply methods and tools that serve to promote natural resource efficiency in consumption and production patterns across sectors. To achieve a clean and healthy environment, unsustainable patterns of production and consumption of Natural resources should be discouraged and intensified awareness instituted.

Action Plan

The County Government will:

- 1. Provide economic incentives for investment in more efficient, clean and environment-friendly natural resource production technologies and associated capacity building.*
- 2. Promote sound Natural resources management tools.*
- 3. Promote corporate and social responsibility and accountability.*
- 4. Promote public procurement policies that encourage development and diffusion of environmentally sound goods and services.*
- 5. Promote, strengthen, support consumer organisations and create awareness.*
- 6. Create awareness on impact of using non-biodegradable materials such as plastics on natural resources*

5.1.5 Industrialisation and Natural Resources

The structural changes implicit in attaining the growth rates demanded by the economic recovery strategy, Sustainable Development Goals (SDGs) and Vision 2030 means that ways must be found to achieve sustainable industrial development. This calls for a natural resource-friendly industrial development strategy that integrates and promotes cohesion of development and natural resources policies and enhances transfer of environmentally sound technologies.

Industrial development is identified as a key driving force that puts pressure on the natural resources. Industrialisation involves transformation of raw materials into value-added products using technology. These development activities are accompanied by generation of various forms of waste into the environment.

The Small and Medium Enterprises (SMEs) have been recognised as the engine to drive industrialisation. Besides contributing to economic growth and job opportunities, SMEs and industries also contribute significantly to natural resources degradation and pollution due to factors such as the type and age of the technologies in use, shop-floor practices and other specific industry characteristics.

SMEs are the fastest growing part of the Country's economy. The manufacturing SMEs consume substantial resources and also produce a significant share of industrial waste. They are prevalent in industrial sectors with relatively high resource and emission intensity thus causing pollution and resource depletion.

Action Plan

The County Government will:

- 1. Implement the County's environmentally-friendly industrialisation policy guidelines.*
- 2. Promote and support SMEs and other industries to adopt appropriate environmentally sound technologies through provision of appropriate incentives and disincentives.*
- 3. Promote use of strategic environmental assessment in the industrial development plans, policies and programmes.*
- 4. Develop capacity and promote natural resource management education and awareness among SMEs.*
- 5. Promote Resource Efficient and Cleaner Production (RECP) technologies, including best available techniques and applications.*

5.1.6 Infrastructural development and Natural Resources

Infrastructural development includes among others buildings, roads, energy, telecommunications, ports, railways, pipelines, irrigation systems, airports and electricity transmission. The natural resource aspects of such infrastructural development are distinct and unique such as effects on flora and fauna, vegetation clearance, excavation works and other negative externalities during construction.

Inadvertently, ambitious infrastructural development has huge ramifications on existing natural resources and the poor communities that rely on these resources for their livelihoods and survival. Of essential, every infrastructural development must pay close attention to these externalities and put in place mitigating mechanisms. Exploitation of NRs affect the envt

Action Plan

The County Government will:

- 1. Ensure Strategic Environmental Assessment (SEA), Environmental and Social Impact Assessment and Public participation in the planning and approval of infrastructural projects are undertaken during the design stages.*
- 2. Implement natural resource-friendly infrastructural development strategy and action plans.*

3. *Ensure that periodic Environmental Audits are carried out for all infrastructural projects.*
4. *Ensure inter-sectoral, inter-county and inter-departmental collaboration with the aim of reducing and/or curbing negative consequences to the natural resources.*
5. *Ensure infrastructural friendly utilisation of NRs (focus on transportation and extraction of the same) or Deposit Bonds to cater for road maintenance*

5.1.7 Management of chemicals

The first conference on chemicals management held in 2006 in Dubai approved the implementation of the Strategic Approach to International Chemicals Management (SAICM). This is a universally acclaimed systematic and coherent framework for managing chemicals for all levels of society. For its implementation, the system requires Governments to develop strong governance structures. In Kenya, management of chemicals has been without a guiding policy. In its absence, the county is vulnerable to risks and hazards associated with chemicals.

Action Plan

The County Government will:

- 1. Integrate chemicals management programme into development plans.*
- 2. Implement the international process of the Strategic Approach to International Chemicals Management (SAICM).*
- 3. Develop and implement a chemicals management policy guideline.*

5.1.8 Human Settlements

The pattern of human settlements in the county is influenced by natural resource endowments, which include availability, accessibility and control. The County is still largely a rural society with a high population with a high growth rate that constrains the county's resource base. Rural settlements have environmental problems which are influenced by many factors including population growth, socio-economic status, topography and climate variability. The huge numbers of settlement schemes have major impacts on the environment and natural resources. Sustainable human settlement involves creating the conditions under which people in both rural and urban settings can enjoy healthy, productive and well-integrated lifestyles. This should ensure that people live in safe, healthy and dignified conditions with relatively easy access to amenities. However, rapid urbanisation caused by population growth and rural-urban migration have hindered the capacity of urban centres to provide adequate housing, infrastructure, services and job opportunities.

Action Plan

The County Government will:

- 1. Integrate demographic issues into natural resources management and conservation.*
- 2. Ensure the development and implementation of an Integrated Housing Policy and Housing Master Plan that takes into account natural resources considerations.*
- 3. Develop and enforce integrated land use planning at all levels.*
- 4. Develop and promote a policy on eco-settlement centres including informal settlements.*
- 5. Mainstream Natural resource considerations in the informal settlements' guidelines.*

5.1.9 Energy Use, Efficiency and Conservation

Energy is essential for socio-economic development. Deliberate efforts have been made by the cCunty Government to provide power to remote areas in the county in order to spur development and improve livelihoods. The main sources for the county's domestic power are wood fuel, biogas, grid power, petroleum and solar energy. It is projected that the county's energy requirements will substantially increase with the growing population. The county's energy policies must ensure a robust and efficient energy system that is secure and sufficient. In order to facilitate industrial competitiveness and economic growth, the energy system should focus more on diversifying renewable energy development.

Action Plan

The County Government will:

- 1. Promote an integrated national strategy for generation and sustainable utilisation of renewable energy.*
- 2. Promote adaptation of the cleaner production concept in all renewable energy production and consumption activities.*
- 3. Develop comprehensive alternative renewable energy policies guided by research and the precautionary principle.*

5.1.10 Climate Change

The County is susceptible to climate-related events such as droughts and floods which pose a serious threat to the socio-economic development. County's existing vulnerability to climate impacts results from a wide range of factors including high natural resources livelihood dependency.

Scientists across the globe have stated that warming of the climate system is unequivocal and that it is largely spurred by human activities releasing greenhouse gases (GHG) into the atmosphere. For the County, climate change poses many serious and potentially damaging effects on human and the environment in the coming decades.

Increased vulnerability in climate and projected incremental changes will have profound social, economic and ecological implications. The effects of climate change have the potential to disrupt County's strides in agricultural production, forests, water supply, health systems and overall human development.

Climate-resilient, low carbon development is a national and County priority because it will support both to absorb disturbances and build capacity to adapt to additional stress and change. By pursuing a green economy path and minimising carbon footprints, the county will better deliver constitutional right to a clean and healthy environment while minimising the county's contribution to global climate change.

Measures to address existing climate variability and achieve national and county development goals should not be at the expense of preparing for future climate change.

Action Plan

The County Government will:

- 1. Develop and implement a comprehensive County Climate Change Policy through planning, cooperation and coordination with relevant stakeholders.*
- 2. Strengthen capacity for national and county level institutions to support national climate resilience, low carbon development through integrating climate change into implementation strategies.*
- 3. Develop and implement awareness raising strategies and capacity development on the opportunities for adaptation and mitigation measures as per the climate change action plan.*
- 4. Strengthen and enhance early warning and response systems for climate and disaster risk reduction.*
- 5. Build and strengthen research capacity on climate change and related natural resources management issues.*
- 6. Put in place a climate financing mechanism that will help the county take advantage of new and emerging climate change funds and also include innovative ways to fund climate change actions domestically through committing a percentage of the county development budget.*
- 7. Establish a county carbon trading platform and renewable energy trading certificate system.*
- 8. Involve and empower communities in mitigating and adapting to climate change.*

5.1.11 Emergency preparedness and Disaster Management

The county has continued to face a rising degree of vulnerability to disaster risk. A risk is the probability of a hazard turning into a disaster with households or communities being affected in such a manner that their lives and livelihoods are seriously disrupted beyond their capacity to cope or withstand using their own resources, with the result that the affected populations suffer serious widespread human, material, economic or natural resources and environmental losses. Communities are predisposed to disasters by a combination of factors such as poverty, aridity, settlement in areas prone to perennial flooding or areas with poor infrastructure and services such as the informal urban settlements or even living in poorly constructed buildings.

County's capacity to respond to emergencies and incidences is inadequate. This is despite recurrent occurrences of incidences such as fires in industries, trading centres, informal settlements, factories and accidents. The county population is increasingly concerned about inadequacies in local capacity for disaster management and emergencies and resultant risks

and hazards. There is therefore a need to build capacity for emergency preparedness, response and mitigation of impacts to human health and the environment.

These factors, coupled with naturally occurring hazards such as droughts, floods, landslides and epidemic outbreaks as well as those propelled by climatic change phenomena, pose extremely high and increasing disaster risks to the county residents and society.

Although the county's economy and by extension its population could be classified as highly vulnerable to natural and man-made disaster risks, the county does not have a comprehensive disaster management framework and strategies guided by appropriate policy and legislative provisions.

Action Plan

The County Government will:

- 1. Establish an institutional, policy and legal framework to effectively manage disaster risk and disasters in general.*
- 2. Ensure strategies for early warning and awareness on disasters are in place.*
- 3. Collaborate with international institutions on emergency and disaster response in controlling, responding and mitigation of emergencies occurring in the county.*
- 4. Involve and empower communities in disaster risk reduction.*

5.1.11 Gender, Vulnerability and Natural Resources Management

Gender plays an important role in the management of the Natural Resources. Different social groups and demographics are impacted differently by natural resources management and environmental challenges. They also play unique roles in managing the natural resources given their unique capabilities, experiences and knowledge relating to the natural resource management. Access to and ownership of natural resources should be enhanced for all women, youth, people living with disabilities, marginalised and minority groups.

Action Plan

The County Government will:

- 1. Provide incentives to attract the under-represented gender and other vulnerable groups into natural resources management careers, occupations and programmes.*
- 2. Mainstream gender and equity in all-natural resource management and sustainable development policies.*

3. *Youth access to Natural Resource*
4. *Women ownership to NRs eg land and forest apart from attending to them*

5.1.12 Invasive and alien species (IAS)

Globalisation has resulted in greater trade, transport, travel and tourism, all of which can facilitate the introduction and spread of species that are not indigenous to an area. Such invasive species may be either plants or animals non-natives that successfully out-compete local organisms for food and habitat. They then spread through their new environment, increasing in population and harm ecosystems in their new ecosystem.

Invasive and Alien species have serious impacts on landscapes and are a threat to hydrology of water catchment areas, significantly reducing their water retention capacity and also impact on biodiversity and ecosystem processes and services. Across the county, wetlands and riparian lands have been heavily invested by water-thirsty exotic species (eucalyptus) woodlots which have resulted to reduced ground water levels as well as reduced food production per unit area. Lake Ol'Bolossat as well as numerous wetlands are invested by plant (salvinia molesta) and animal (coypu and crayfish).

Action Plan

The County government will:

1. *Develop a strategy and action plan for mapping and management of invasive alien species.*
2. *Set up a framework for research, information exchange and natural resources management awareness on invasive alien species.*
3. *Collaboration with relevant stakeholders on research and development*
4. *Involve and empower communities in instituting measures for prevention, eradication and control of invasive species that have major natural resources management and economic impacts.*
5. *Sensitize the community on alternative tree species (indigenous trees) to manage the eucalyptus menace and implement the KFS eucalyptus planting guidelines*
6. *Innovative strategies on utilization of the invasive species*

CHAPTER SIX

6.0 NATURAL RESOURCES MANAGEMENT AND GOVERNANCE

Functioning governance structures, legal and policy instruments as well as institutional capacity for judicious implementation and enforcement are prerequisites for effective natural resource management and governance.

6.1 Natural Resource Management Legal Reforms

Environmental Management and Coordination Act (EMCA) of 1999 (Amended 2015) provides policy instruments for the protection and conservation of rivers, lakes, wetlands, areas of cultural significance, hilltops, hillsides, mountain areas and forests. The policy instruments include environmental impact assessment, economic instruments such as fiscal incentives, environmental quality standards, restoration orders, conservation orders and environmental easements. Under EMCA, developers and resource users are required to undertake environmental audits or impact assessments.

The EMCA provides for sound management of natural resources.

Action Plan

The County Government will:

- 1. Ensure harmonisation of sectoral laws with the EMCA and their implementation.*
- 2. Ensure that Environmental Impact Assessments and Audits are carried out when exploring natural resources.*

6.2 Institutional Framework

The multi-faceted nature of the environment and the need to integrate natural resource considerations in all development planning and activities calls for cooperation and consultation among responsible Government agencies and stakeholders at all levels. It is particularly important to recognise the existing institutional mechanisms and consider ways and means by which coordination and cooperation can be enhanced between the many institutions whose mandates relate to natural resources management.

National Environment Management Authority (NEMA) is the national regulatory agency coordinating with the decentralised entities. There are various committees on standards enforcement and action plans to support NEMA's performance in matters of natural resource utilization and planning. The multi-sectoral National Environment Council (NEC) is the apex national environment policy making organ while the Directorate of Natural Resources in the

NYANDARUA COUNTY NATURAL RESOURCES MANAGEMENT POLICY 2024

Department plays an oversight role in policy formulation as well as monitoring the implementation in relation to other sectoral policies.

Action Plan

The County Government will:

- 1. Strengthen the Directorate of Natural Resource Management by establishing technical units in charge of Forests, Wetlands and Riparian Land and Artisanal Mining to spearhead natural resource policy implementation, coordination of intervention activities and to monitor the implementation in relation to other sectoral policies.*
- 2. Facilitate capacity build the County Environmental Committee as the designated committee responsible for the general supervision and coordination in all matters relating to the natural resources.*
- 3. Enhance coordination of environmental institutions at the county levels so as to make them more effective and participatory.*

6.3 Human Resources Development and Capacity Building

Weak enforcement of natural resource management and environmental compliance is attributed to inadequate technical capacities, monitoring infrastructure and inadequate trained staff in oversight. Building a cadre of professionals in natural resources management is an investment for the future that requires immediate and long-term approach. Whereas short term training and targeted courses are important for skills and managerial development, the long-term training in specific areas enhances specialisation.

Action Plan

The County Government will:

- 1. Undertake staffing for the critical technical areas*
- 2. Support and promote the development of expertise in the County, local communities and civil society organisations in various areas of natural resource management through targeted short and long-term courses and awareness creation.*
- 3. Develop a wide range of training opportunities and modules in the field of natural resource management for different levels taking into account gender equity, emerging natural resources management issues at the County.*
- 4. Enhance and promote networking and knowledge sharing in natural resources management at the local, national, regional and international levels.*

6.4 Partnerships and Stakeholder Involvement

Partnerships, by their very nature, represent a sustained commitment to move forward together to reach a higher common objective. To ensure an inclusive partnership and stakeholder involvement in decision making, ways must be found to:

- (a) Ensure wide representation from across the local communities, private sector, National Government, donor agencies, bilateral and civil society organisations and
- (b) Ensure that community voices are at the centre of decision-making processes. This is because these stakeholders play a central role in natural resources management and conservation.

These non-state actors have the advantage of being more independent of political pressures than governmental formal management agencies. Thus, they are well positioned to play an important leading role in agenda setting and policy development processes. For example, NGOs can mediate in the resolution of resource conflicts at the local level by bringing considerable expertise and resources. At the national level, they can inform and shape the public debate on natural resources protection issues and challenges.

Participation of these non-state actors can be encouraged through provision of incentives to enhance investment in the sector as well as through mechanisms that provide a framework for building partnerships between these entities and the County Government.

Action Plan

The County Government will:

1. *Develop and implement a Strategy on Partnerships and Stakeholder Involvement to enhance Natural resources management.*
2. *Enhance public-private partnerships in natural resources management.*
3. *Provide economic incentives to CSOs and individuals in the Natural resources Sector.....*
4. *Establish stakeholders forum for consultation on NRM matters/ideas).....*
5. *Develop and implement mechanisms for conflict resolution and management in the conservation of natural resources.*

6.5 Funding Mechanisms

Sound Natural Resources management requires a sustainable financing mechanism. The County Government's budget is the single largest source of funding for protection and conservation of the natural resources. However, there is inadequate budgetary allocation to natural resources management. As such, there is an urgent need to complement this by harnessing additional funding from multilateral funding mechanisms, development partners, private sector and civil society organisations.

Action Plan

The County Government will:

- 1. Provide adequate resources for Natural Resources management through annual budgetary allocation.*
- 2. Promote participation of individuals, public and private partnership through fiscal incentives and voluntary agreements pegged on Natural Resource performance indicators.*
- 3. Broaden the revenue and funding base to ensure financial sustainability of Natural Resource management.*
- 4. Establish a mechanism for resource mobilisation*
- 5. Develop legal framework for establishment of a NRM fund for conservation, restoration and protection of natural resources within the County.*

6.6 Local, Regional and National Cooperation

Effective management of shared Natural resources requires local, regional and National cooperation.

Significant benefits can be realized and effectiveness increased through this cooperation. Under devolution the County is a party to agreements, treaties and conventions on natural resource management. These agreements are important in providing a framework for conservation of shared resources between partners.

Action Plan

The County Government will:

- 1. Establish and strengthen coordination mechanisms to ensure consistent negotiations, implementation and reporting of the MNRA's and regional agreements.*
- 2. Harmonise NRM policies.*
- 3. Promote and support the establishment of transboundary natural resources protection, conservation and management initiatives as a basis for enhancing the conservation of*

shared resources and their ecosystems through relevant MNRAs and regional instruments.

- 4. Keep a register of all MNRAs and regional instruments to which Kenya is a party to and ensure their domestication, effective implementation and reporting.*
- 5. Mobilise resources from MNRAs financing mechanisms such as the Global Environment Facility (GEF) to support sound natural resource management and sustainable development.*

CHAPTER SEVEN

7.0 RESEARCH, EDUCATION AND MONITORING

Scientific research technology and innovation are central to sound Natural resource management. High quality data generated from NRM research and monitoring improves the county's information base for decision making on NRM issues.

7.1 Scientific Research and Information Management

Information is the foundation of sustainable development and is fundamental to successful planning and decision making. Satellite and other remote sensing technologies can improve capabilities of capturing natural resource status and trends. In addition, satellite imagery, Geographic Information Systems (GIS) and aerial photography have greatly expanded opportunities for data integration and analysis, modelling and map production. There is a need for enhanced natural resource research, training and dissemination of NRM management tools in the county.

Action Plan

The County Government will:

- 1. Develop a County Data and Information Management Strategy on natural resources.*
- 2. Enhance integration of indigenous knowledge in Natural Resources planning and management.*
- 3. Support research and development programmes and projects that transfer knowledge and technologies for natural resources management and sustainable development.*
- 4. Partnerships and collaborations with research and academic institutions on research and development*

7.2 Education, Communication and Awareness

Natural Resources management education, both formal and informal, is vital to changing people's attitude to appreciate natural resources concerns. Formal education is important to increase awareness, improve extension services, sensitise people on NRM issues and build institutional capacities. Non-formal natural resources education benefits people outside the formal education system. Communication of NRM information to all stakeholders is still a challenge. Public awareness empowers the public to develop a strong sense of responsibility on NRM issues.

Action Plan

The County Government will:

- 1. Develop a County Strategy on NRM, Education and Public Awareness.*
- 2. Document, disseminate and encourage the use of indigenous knowledge in natural resources protection and conservation.*
- 3. Strengthen capacities for acquisition, packaging and dissemination of NRM information.*
- 4. Establish and strengthen NRM resource centres at Sub-County levels.*
- 5. Develop and implement NRM Education for Sustainable Development (ESD) Policy guidelines.*

7.3 Natural Resources Management Monitoring, Evaluation, Achievement and Learning (MEAL)

Natural Resources Management monitoring is important for determining Natural Resource Management status and trends and for updating NRM action plans and enhancing enforcement and compliance. It analyses many circumstances in which human activities carry a risk of harmful effects on the natural resources. It is imperative for demonstrating lessons learnt and achievements realized in the course of execution.

Action Plan

The County Government will:

- 1. Develop and implement standardised indicators that will form the basis of monitoring the status of the natural resources.*
- 2. Develop and implement a natural resources MEAL Programme to monitor the state of resources.*
- 3. Encourage reporting natural resources status on a balance sheet.*
- 4. Prepare annual report on county status of natural resources through the County State of Environment Report and forward to the County Assembly*

CHAPTER EIGHT

8.1 IMPLEMENTATION STRATEGIES AND ACTIONS

The main responsibility for following up the County Natural Resources Management Policy goal and objectives and ensuring their realisation rests with the County Government. The proposed implementation strategies and actions presuppose active participation of stakeholders at all levels. In this regard, a number of strategic actions will guide the implementation of this Policy.

Integration of Natural Resources management Concerns in all Policy, Planning and Development Processes

Integration of Natural Resource Management considerations in all County and relevant sectoral policies, planning and development processes is critical if this Policy is to achieve its goal and objectives. In order to operationalise these, the County Department responsible for the Natural Resources has to take the leadership role in ensuring that all county and all sectoral policy planning and development processes mainstream Natural resources considerations.

Action Plan

The County Government will:

- 1. Institutionalise cooperative governance and integrated approach to the management of the natural resources by explicitly identifying and integrating NRM considerations in relevant sectoral and cross-sectoral policies, laws, planning and development process.*
- 2. Ensure synergies between County and National Development planning processes. Align with CIDP, MTPs*
- 3. Institutionalise strategic NRM assessments approaches to all policies, programmes and plans.*
- 4. Ensure that all significant development projects are subjected to EIA and regular environmental audits.*
- 5. Community Engagement*

8.2 Clarifying Roles and Responsibilities

Implementation of this Policy involves many different groups including Government agencies at local, national and regional levels, private sector, civil society organisations, local

communities and the public. A key element is defining the roles and responsibilities of the various groups.

Enhance Partners and their roles in table format

National: KFS, KWS, NEMA

County Level: CA, CEC, CECM,

Action Plan

The County Government will:

- 1. Strengthen the capacity of the Directorate of Natural Resources under the Department responsible for the NRM to play the oversight role of monitoring the implementation of the NRM Policy.*
- 2. Strengthen the capacity of NRM institutions at the county levels so as to make them more effective in ensuring compliance and oversight.*
- 3. Strengthen County Government capacity to assess, negotiate and monitor investments, contracts, leases and concessions used for sustainable resources management.*
- 4. Strengthening capacity in the area of NRM economics that includes natural resources accounting, development of incentives and disincentives, indicators for sustainable development and valuation of Natural Resources goods and services.*
- 5. Strengthen the capacity on Strategic Environmental Assessment (SEA) process and subject all sector policies, plans and programmes to SEA.*

8.3 Environmental Compliance

Compliance is critical to achieving sustainable development. Voluntary compliance with environmental requirements on exploration of natural resources reduces costs of enforcement and monitoring. Compliance strategies involve both actions to promote and enforce legal requirements. Enforcement is important in order to create a climate in which the stakeholders will have clear incentives to make use of the opportunities and resources provided. It is however very important that the enforcement and the compliance so required must be timely.

Action Plan

The County Government will:

- 1. Develop and implement a Natural Resources Compliance and Enforcement Programme.*
- 2. Provide economic incentives for establishments that adopt NRM-friendly technologies.*
- 3. Promote Alternative Dispute Resolution Mechanism (ADR) .*
- 4. Engage with the National Environment Complaints Committee on matters of NRM.*

9.0 Review

This policy shall be reviewed in five (5) years.

POLICY IMPLEMENTATION MATRIX

NO	ACTION	ACTOR	TIME FRAME	BUDGET KSHS.	BUDGET SOURCE	STATUS
1	Final draft policy validation	Department- WECCNR	End January	200,000	WECCNR	Not yet
2	Cabinet Memo & Approval	CECM -Water	End February	0	WECCNR	Not yet
3	Public Participation	Department	March	1,200,000	WECCNR	Not yet
4	County Assembly/ Committee	Assembly/Department	End March	420,000	WECCNR	Not yet
5	Develop NRM Strategy	Department-Natural Resource	April	200,00,000	WECCNR	Not yet
6	Cabinet Memo & Approval	CECM	May	0	WECCNR	Not yet
IMPLEMENTATION MECHANISM						
7	Formulate strategies to increase forest and tree cover	WECCNR/ KWS/KFS/LOCCOG/CBOs/CCV	May 2021	2 M	WECCNR	Not yet

8	Develop County strategy for rehabilitation of degraded forest ecosystems and sustainable forest management	KFS/CFAs/TNC/WWF/EAWLS /	May 2021	2M	WECCNR	Not yet
9	Develop integrated freshwater and wetland resources management strategies	NEMA/EAWLS/WWF/FAO/LOCCOG/CBOs/	April 2021	2M	WECCNR	Not yet
10	Promote and institutionalise user pay principle for natural resource services	NEMA/EAWLS/WWF/FAO/LOCCOG/CBOs/	April 2021	1 M	WECCNR	Not yet
11	Develop a County wetland policy guidelines	NEMA/EAWLS/WWF/FAO/LOCCOG/CBOs/	April 2021	2 M	WECCNR	Not yet
12	Empower communities in the management of freshwater and wetland ecosystems.	WECCNR/EAWLS/Donors/NE MA/	May 2021	1.2 M	WECCNR	Not yet
13	Develop mechanisms to ensure communities living in areas where the genetic material originate benefit.	LOCCOG/DEPT/DONORS	MAY 2021	1 M	WECCNR	Not yet
14	Develop strategy to contain, control and mitigate alien and invasive species	DEPT/KFS/LOCCOG/CBOS	May 2021	2 M	WECCNR	Not yet

15	Protect, conserve and improve the habitats, corridors and dispersal areas of wildlife	DEPT/TNC/KWS/WWF/LOCCOG	May 2021	0	WECCNR	Not yet
16	support the establishment of private and community-based conservation areas	TNC/LOCCOG/EAWLS/WWF	May 2021	0	WECCNR	Not yet
17	Reclaim and restore the encroached reserves	KFS/KWS/LOCCOG/CGN	Nov 2021	1M	WECCNR	Not yet
18	Protect endangered wildlife species	KWS/CGN	Continuous	0	WECCNR	Not yet
19	Protect fish breeding grounds	KWS/DEPT OF AL&F/LOCCOG	Continuous	500,000	WECCNR	Not yet
20	Develop an Integrated Land Use Master (Development) Plan for the SALs.	KFS/KWS/FAO/WWF/EAWLS/CGN/LOCCOG	Sept 2021	5,000,000	WECCNR	Not yet
NATURAL RESOURCE STEWARDSHIP						
21	Document and value natural capital	CGN	Sept 2021	300,000	WECCNR	Not yet

22	Develop instruments and methodologies for Natural resource accounting	CGN	Sept 2021	500,000	WECCNR	Not yet
23	Develop a monitoring and reporting framework on natural capital use	CGN	Sept 2021	2,000,000	WECCNR	Not yet
25	Develop integrated land use planning	CGN	June 2021	0	Lands Dept	Not yet
26	Develop a policy on eco-settlement centres including informal settlements.	CGN	Dec 2021	1,500,000	WECCNR & Lands dept	Not yet
27	Develop comprehensive alternative renewable energy policies	CGN	Dec 2021	1,500,000	WECCNR	Not yet
28	Develop and implement a comprehensive County Climate Change Policy	CGN	Feb 2021	1,500,000	WECCNR	Not yet
29	Develop strategies for adaptation and mitigation measures as per the climate change action plan	CGN	April 2021	1,500,000	WECCNR	Not yet

30	Establish a county carbon trading platform and renewable energy trading certificate system.	CGN	May 2022	1,000,000	WECCNR	Not yet
31	Establish an institutional, policy and legal framework to effectively manage disaster risk	CGN	May 2022	1,200,000	WECCNR & Legal Dept	Not Yet
32	Develop a County strategy and action plan for mapping and management of invasive alien species	CGN/DONORS	May 2022	2000,000	WECCNR	Not yet
NATURAL RESOURCES MANAGEMENT AND GOVERNANCE						
34	Develop training opportunities and modules in the field of natural resource management	CGN/Training Institutions	Feb 2021	300,000	WECCNR	Not yet
35	Develop a Strategy on Partnerships and Stakeholder Involvement to enhance Natural resources management	CGN/DONORS	Sept 2022	2,000,000	WECCNR	Not yet

36	Develop mechanisms for conflict resolution and management in the conservation of natural resources	CGN, KWS, KFS	Oct 2021	500,000	WECCNR	Not yet
37	Broaden the revenue and funding base to ensure financial sustainability of Natural Resource management	CGN	Continuo us	0	WECCNR & Finance Dept	Not yet
RESEARCH, EDUCATION AND MONITORING						
39	Develop a County data and information management strategy on natural resources	CGN	May 2021	300,000	WECCNR	Not yet
41	Develop standardised indicators forming the basis of monitoring the status of the natural resources	CGN	May 2021	0	WECCNR	Not yet
42	Develop a natural resources MEAL Programme to monitor the state of resources	CGN/LOCCOG,/KWS/KFS	May 2021	0	WECCNR	Not yet
IMPLEMENTATION STRATEGIES AND ACTIONS						
43	Institutionalise cooperative governance and integrated approach to natural resources management	CGN/LOCCOG,/KWS/KFS/W WF/	May 2021	0	WECCNR	Not yet

44	Develop a Natural resources Compliance and Enforcement Programme	CGN/LOCCOG,/KWS/KFS/W WF/	May 2021	0	WECCNR	Not yet
REVIEW						
45	Review of the NRM policy	CGN	Feb 2026	2,000,000	WECCNR	