



REPUBLIC OF KENYA

SECTOR PLAN FOR ENVIRONMENT, WATER, SANITATION AND REGIONAL DEVELOPMENT

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STATEMENT BY THE CABINET SECRETARY THE NATIONAL TREASURY AND PLANNING

Kenya's long term development blue-print, Kenya Vision 2030, is in its third implementation phase under the Third Medium Term Plan (MTP III) 2018-2022. A total of 28 MTP III Sector Plans have concurrently been prepared through 25 MTP Working Groups and three (3) Thematic Working Groups. The Plans provide in detail policies, programmes and projects to be implemented in each sector for the period 2018-2022. The Plans also incorporate policies, programmes and projects necessary for the effective implementation of the "Big Four" initiatives namely: manufacturing and agro-processing; food and nutrition security; universal health coverage and affordable housing. Ongoing flagship projects and other priority programmes and projects carried forward from the previous Medium Term Plans will also be implemented. The Sector Plans have also mainstreamed key priorities outlined in the Manifesto of the Jubilee Government.

The MTP III and the Sector Plans have been prepared through a participatory and inclusive process involving representatives from the government, development partners, private sector, Civil Society, NGOs, organizations representing vulnerable groups, faith-based organizations and professional associations, among others and in line with the constitutional requirements.

The Sector Plans detail specific programmes and projects for implementation during the plan period, 2018-2022. The programmes and projects outlined in these plans will be implemented in close consultation and collaboration with county governments and in line with the Fourth Schedule of the Constitution. The Public Private Partnerships (PPPs) framework will be the vehicle through which the private sector will contribute to the implementation of programmes and projects highlighted in the plans.

The County Integrated Development Plans, County Spatial Plans and Ministries, Departments and Agencies (MDAs) Strategic Plans (2018-2022) will be aligned to the MTP III and the National Spatial Plan. Implementation of these plans will also be linked to the Results-Based Management Framework through Performance Contracts and Staff Performance Appraisal System.

A robust monitoring and evaluation framework will be put in place. In this regard, National Integrated Monitoring and Evaluation System (NIMES), County Integrated Monitoring and Evaluation System (CIMES) and the electronic Project Monitoring Information System (e-ProMIS) will be fully integrated with other governmental financial systems. This will ensure effective tracking of implementation of programmes and projects and also boost Public Investment Management.

In conclusion, I would like to appreciate the respective Cabinet Secretaries, Chief Administrative Secretaries, Principal Secretaries, staff in the MDAs and all those involved in the preparation of the Sector Plans for their valuable inputs. In addition, I commend staff from State Department for Planning led by Principal Secretary, Planning for the effective coordination of the MTP III preparation process.



Henry Rotich, EGH
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FOREWORD

The overall goal of the Environment, Water, Sanitation and Regional development Sector is to enhance “development in a clean, safe and sustainable environment, natural resources and access to water and sanitation services for all Kenyans”. This sector consists of Environment, Natural Resources, Water, Irrigation and Regional Development sub-sectors.

The formulation of the Sector Plan is informed by the achievements, challenges and lessons learnt during the implementation of the second MTP. This Sector plan offers a roadmap towards achieving the transformative initiatives on Universal Health care, Food and Nutrition Security, Affordable Housing and, finally manufacturing. In addition, the plan is aligned to the relevant Sustainable Development Goals (SDGs), Agenda 2063 and East Africa Community Vision 2050.

The Plan takes cognisance of the Constitution on the protection of Environment, Natural Resources and Water resources and the promotion of human rights which has been intertwined and become part of the fundamental pillars of sustainable development. Arising from provisions of the existing policy, legal and institutional frameworks will be aligned and strengthened in the Plan period by developing new policies, legal and institutional frameworks.

During the Plan period the Sector will continue to conserve and manage forests, wildlife resources, water catchments, and wetlands towards land degradation neutrality besides promoting green economy, strengthen waste management and pollution control measures among other programmes. Further, sustainable management of water resources continues to be critical to the realization of objectives of the social pillar in Kenya Vision 2030. In this regard, water resources management, and sanitation as well as management of trans-boundary water resources have been enhanced in this plan period. In addition, the Plan is aligned to the climate change Act 2016.

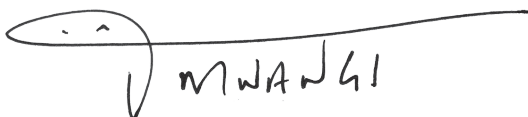
To achieve all the planned projects and programmes during the Plan period, the sector will target six strategic thrusts namely: Improved Environment Management and Conservation; Sustainable management and development of Water resources; Improved access to safely managed water and sanitation; Forest Conservation & Management, Wildlife Conservation & Management and Improved land productivity for enhanced food security in the Sector. This will be done with consultation between the National and County government taking into account the interrelations of the two levels as provided for in the Constitution.



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PREFACE

This third sector plan will cover the period 2018-2022. The plan highlights in detail the key programmes and projects including the Government transformative agenda that will be implemented towards the realization of Kenya's Vision 2030. The plan prioritizes programmes, projects and policies that will be undertaken during the Third MTP 2018-2022 which will be implemented through increased budgetary allocation and key sector reforms.

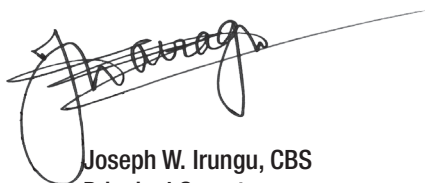
The Sector is faced with a number of challenges and emerging issues which include lengthy consultative legislative process, environmental degradation, climate change, insecurity, and inadequate budgetary allocation. This Sector plan has developed programmes and projects to mitigate the challenges and incorporate emerging issues.

The plan has been prepared through a sector-wide consultative process that involved various stakeholders in the Environment, Water and Sanitation sector. The plan incorporates comments from stakeholders and development partners that were provided during the preparation of the sector plan. The sector in collaboration with other stakeholders will continue promoting sustainable management of natural resources and relevant SDGs for the sector.

I wish to sincerely thank all those who participated in the preparation of this sector plan for Environment, Water, Sanitation and Regional Development. These include Government officers, private sector partners, the civil society and the development partners. I would like to acknowledge the important role played by Central planning and Project Monitoring Units in the sector Ministries which provided the secretarial services for the process. Special recognition is appreciated for the guidance and effective leadership during the Plan preparation that was provided by the State Department for Planning.



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LIST OF ABBREVIATIONS/ ACRONYMS

AFLRI	-	Africa Forest Landscape Restoration Initiatives
ASALs	-	Arid and Semi-Arid Lands
AWS	-	Automatic Weather Station
BDBA	-	Billion Dollar Business Alliance
CBS	-	Commission of Basic Systems
CDA	-	Coast Development Authority
CDM	-	Clean Development Mechanism
CLIP	-	Community Livelihood Improvement Project
CMS:	-	Catchment Management Strategy
CoK	-	Constitution of Kenya
EMCA	-	Environment Management and Coordination Act
ENNDA	-	Ewaso Ng'iro North Development Authority
ENSDA	-	Ewaso Ng'iro South Development Authority
E-Waste	-	Electronic Waste
GDP	-	Gross Domestic Product
GKFSP	-	Galana Kulalu Food Security Project
GNP	-	Gross National Product
GoK	-	Government of Kenya
Ha.	-	Hectares
ICT	-	Information Communication Technology
JKIA	-	Jomo Kenyatta International Airport
KEFRI	-	Kenya Forestry Research Institute
KEWI	-	Kenya Water Institute
KFS	-	Kenya Forest Service
KPA	-	Kenya Ports Authority
KVDA	-	Kerio Valley Development Authority
KWS	-	Kenya Wildlife Service
KWTA	-	Kenya Water Towers Agency
LAPSSET	-	Lamu Port South Sudan and Ethiopia Corridor
LBDA	-	Lake Basin Development Authority
MEAs	-	Multilateral Agreements
MoE&F	-	Ministry of Environment and Forestry
MIA	-	Mombasa International Airport
MOH	-	Ministry of Health

MOWS	-	Ministry of Water and Sanitation
MSMEs	-	Micro, Small and Medium Sized Enterprises
MTP	-	Medium Term Plan
NEAP	-	National Environment Action Plan
NEIP	-	National Expanded Irrigation Programme
NEMA	-	National Environment Management Authority
NFP	-	National Forest Programme
NRW	-	Non Revenue Water
NSP	-	National Spatial Plan
NWCPC	-	National Water Conservation and Pipeline Corporation
PPPs	-	Public Private Partnerships
RDAs	-	Regional Development Authorities
REDD+	-	Reduction of Emission from Deforestation and Degradation
SAGAs	-	Semi-Autonomous Government Agencies
SCMP	-	Sub Catchment Management Plan
SDGs	-	Sustainable Development Goals
TARDA	-	Tana and Athi Rivers Development Authority
UNICEF	-	United Nations International Children Emergency Fund
WARREC	-	Water Research and Resource Centre
WASH	-	Water Sanitation and Hygiene
WASREB	-	Water Services Regulatory Board
WMO	-	World Meteorological Organization
WRMA	-	Water Resources Management Authority
WRUAs	-	Water Resources Users Associations
WSBs	-	Water Services Boards
WSPs	-	Water Services Providers
WSTF	-	Water Resources Trust Fund

EXECUTIVE SUMMARY

The goal of the Environment, Water, Sanitation and Regional Development Sector is to enhance a clean, safe and sustainable environment, natural resources and access to water and sanitation services for all Kenyans. This Sector is a fundamental pillar of Kenya's economy as it plays a critical role in securing the stewarding and sustaining the natural capital of Kenya. Investment in this Sector therefore ensure the delivery of direct and indirect goods and services that are the backbone for the main productive sectors namely Agriculture, Tourism, Manufacturing and the Energy sector that present great potential in the attainment of the targeted annual GDP growth rate of 10% as stipulated in the Kenya Vision 2030.

In line with Article 42 of the Constitution, the sector is required to provide for a clean and healthy environment for every person while Article 69 requires the State to ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits. This plan highlights the achievements in the sector during implementation of the second MTP II and rolls forward the targets that were not realized to the period 2018-22. The plan also prioritizes the projects and programmes for implementation in the third medium term plan with clear responsibilities and resources required for the entire period.

Despite the efforts to improve the management and conservation of environment and natural resources, the sector continues to face several challenges. Key among these key challenges include impacts of climate change, increasing population, expansion of agriculture and settlements into fragile water towers ecosystems. This leads to biodiversity loss and unsustainable land-use practices thereby posing serious threats to the attainment of a clean and secure environment.

Sustainable management of water resources continues to be key in the realization of objectives of the social pillar in Kenya Vision 2030. Climate change is increasing the forces that degrade the environment and land in general. It must be re-emphasized that the management and conservation of water resources require a responsive and adaptable approach to climate change.

The sector has aligned its plan to the achievement of the Sustainable Development Goals (SDGs), Vision 2030, Regional, International and global commitments relating to the sector.

1. INTRODUCTION

The goal of the Environment, Water, Sanitation and Regional Development Sector is to enhance development in a clean, safe and sustainable environment. The sector comprises several sub-sectors that include environment, natural resources, regional development, water and irrigation. This sector is fundamental to Kenya's economy as it plays a critical role in securing the stewardship and sustainable utilization of natural resources. The sector contributes to other sectors such as agriculture, health, infrastructure, security, tourism, manufacturing and energy among others, and all will play a key role in the Government's transformation agenda focusing on manufacturing, food and nutrition security, universal health care and affordable housing for all.

During the plan period the Sector will continue to conserve and manage forests, wildlife resources, water catchments, and wetlands towards land degradation neutrality besides integrated development, promoting green economy, strengthen waste management and pollution control measures among other programmes. Further, sustainable management of natural resources continues to be critical to the realization of objectives of the social pillar of Kenya Vision 2030. In this regard, natural resources management integrated development, water and sanitation, as well as management of trans-boundary water resources have been enhanced in this plan period.

Article 42 of the Constitution provides for a clean and healthy environment for every person while Article 69 requires the State to ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits. The sector, however, faces a number of challenges with implications on the capacity of the environment to support sustainable socio-economic development. Regional development also faces challenges in the implementation of integrated programmes emanating from lack of an enabling Act in line with the Constitution of Kenya.

Despite the efforts to improve the management and conservation of the environment and natural resources, the sector continues to face several challenges. Key among these challenges are impacts of climate change, increasing population, expansion of agriculture and settlements into fragile water towers ecosystems. This has led to continuous loss of biodiversity and unsustainable land-use practices, thereby posing serious threats to the attainment of a clean and secure environment.

This Sector plan offers a roadmap towards achieving the relevant global/regional commitments such as Sustainable Development Goals (SDGs), Agenda 2063 and East Africa Community Vision 2050 on environment, water and sanitation by reversing the negative effects arising from the existing challenges enumerated. The plan will therefore focus on environmental and natural resources conservation and management and in particular forests, wildlife resources, water catchments, water and trans-boundary water resources, wetlands, green economy, waste management, sanitation, pollution control and irrigation among other programmes. The sector will also ensure the integration of climate change adaptation and mitigation in all its operations.

The Sector will focus on improved access to water and sanitation, innovative self-sector financing mechanisms and adequate investment planning to move the sector into the path of Vision 2030. In this respect, about 350,000 new water connections will be required annually for universal water access to be realized by 2030. Likewise, about 300,000 new sewer connections for urban population (about 3.2 million people) will be required annually for universal sanitation access to be reached. Emphasis will be on operationalization of Water Act, 2016 to streamline water services.

The sector will focus on integrated regional development in order to achieve the expansion of area under irrigated agriculture to over 75,000 hectares, construction of at least four (4) multipurpose dams with capacity of 4.8 billion cubic metres, and generation of 100 megawatts of hydroelectric power, as well as improvement of access to water. The sector will create four (4) resource centres across the country and review their long term master plans within the implementation period. In the conservation of catchments, the sector will rehabilitate and re-afforest 200 square kilometers of forests. This is expected to enhance greenhouse gas sink, as well as improve the sectors climate change adaptive capacity.

Sustainable management of natural resources continues to be key in the realization of the objectives of the social pillar in Kenya Vision 2030. Climate change is increasing the forces that degrade natural resources in particular and land in general. It must be re-emphasized that the management and conservation of natural resources require a responsive and adaptable approach to climate change. Towards this end, the sector will develop new and review existing policies, strategies and regulations on environmental management and regional development. Design, develop and apply economic instrument in environmental, natural resources, integrated regional development, water and irrigation management.

To ensure that these aspirations are met, the sector plan outlines prioritized policies, programmes and projects that will be undertaken during the third Medium Term Plan period (2018 - 2022) including a Monitoring and Evaluation Matrix to ensure reporting and accountability.

2.0 SITUATION ANALYSIS

2.1 Overview

Kenya's land area is about 582,728 km² of which 80 per cent is in Arid and Semi-Arid Lands (ASALs) while 2.2 per cent is surface water. The country is endowed with diverse ecosystems and habitats that are home to unique and diverse flora, fauna and microbes. The effects of climate change, increase in human population and the high dependence on the natural capital exert pressure on the limited resources, leading to over-exploitation and degradation.

Despite the efforts put in place by the Government, land degradation and ecosystem destruction continues to be a major concern. This is manifested in the increasing siltation of water bodies and rivers. Further, waste management, air and water pollution remain major challenges in most of our urban centers. Rapid population growth and urbanization has continued to increase waste generation leading to unsustainable disposal. A key component of our natural capital is the biodiversity which supports agriculture, tourism, health and other sectors. Despite its importance, the country continues to lose its biodiversity due to rapid population increase, habitat degradation and loss; Land degradation; desertification and over-exploitation of the ecosystems and species, as well as through application of herbicides and pesticides.

In the last decade, water reforms have improved service provision to consumers and attracted increased investments. The realization of universal access to water appears to be a heavy task that must be performed within the next five years, considering that by June 2017, the national water coverage was 59.9%, while sewerage coverage was at 15%. The budget provision required for universal access to water and sanitation by 2030 is Ksh.1.764 trillion which translates into an annual requirement of Ksh.100 billion - of which only about Kshs 40 billion is availed. In this regard, the financing gap is still very wide and has to be bridged through innovative ways of funding including Public Private Partnerships.

The Regional Development Authorities have implemented 44 integrated projects which have made significant contribution in addressing the issues of food security, energy, water harvesting and supply as well as environmental protection. Specifically, in ensuring food security, the authorities have put 7000 hectares under irrigation. In water conservation, around 400 water pans and over 70 boreholes have been rehabilitated or drilled. In addition, over 170 kilometres of riparian land has been reforested with over 9 million tree seedlings produced and planted.

The sector has made progress based on the implementation of MTP II (2013-2017) and the entrenchment of devolution. It is worth noting that during this period, projects and programmes were being implemented by both the National and County governments in line with constitutional requirements. The sector made efforts towards sustainable exploitation, utilization and management of natural resources as well as strengthening the framework for equitable sharing of the benefits.

2.2 Achievements During MTP II

2.2.1 Strengthening Environmental Governance

The sector facilitated the review of Environmental Management and Coordination Act 1999 and Wildlife Conservation and Management Act 2013 to harmonize them with the Constitution. In addition the sector enacted Forest Conservation and Management Act, 2016, Natural Resources (Classes of Transactions Subject to Ratification) Act, 2016, Water Act 2016, and Climate Change Act, 2016, to align them to Constitution and also incorporate global issues that are pertinent to the sector. Other instruments

developed to strengthen the sector include National Climate Change Action Plan, Green Economy Strategy and Implementation Plan, National Adaptation Plan, National Water Master Plan 2030, and National Forest Programme 2016-2030. During the review period, the National Environment Management Authority (NEMA) was accredited as a National Implementing Entity for the Green Climate Fund.

2.2.2 Waste Management and Pollution Control

The programme achieved the following: developed a National Solid Waste Management Strategy in 2015; established status and developed action plans on waste management and pollution levels in Mombasa, Thika, Nakuru, Eldoret and Kisumu; implemented Plastic Bags Initiative vide Gazette notice No. 2334 of March 2017; harmonized Municipal and Industrial effluent standards within the Lake Victoria Basin; constructed sewerage treatment plants in Kisumu, Homa Bay, and Bomet Towns; and developed a system to monitor Nutrient and Sediment Losses from Land Use and Covers in the Nyando Basin.

2.2.3 Rehabilitation of Urban Rivers

Urban rivers in Kenya remain highly polluted from dumping of solid and liquid waste including toxic chemicals. Some priority rivers that were rehabilitated included Nairobi and Sosiani Rivers. Achievement towards the rehabilitation of rivers were as follows: Approximately 270 kms of urban rivers were rehabilitated; Reclaimed lands along the riparian zones at the Michuki Memorial Park; constructed 2.5 km river banks embankment to stabilize them; and planted 270,000 indigenous trees along Mathare, Ngong, Nairobi, and Sosiani river banks.

2.2.4 Modernization of Meteorological Services

This flagship programme aimed at expanding the data collection network for improved accuracy in weather forecasting; improved flood forecasting and early warning; improved safety of air transport and fulfillment of requirements for direct flights to the US. In this regard, the Ministry installed 88 Automatic weather Stations (AWS); installed two (2) automatic hydro – meteorological stations; installed two (2) upper air observing systems (Garissa and Lodwar); installed three (3) Automatic Airport Weather Observing Systems (JKIA, Eldoret and MIA); and Commissioned three (3) additional manned observatories at Ngong, Kitui and Nganyi. Further, meteorological services were decentralized to the 47 counties; recruited and trained staff for performance improvement and skill development.

2.2.5 Advertent Weather Modification Programme

The programme objective is to mitigate impacts of severe weather and extreme climate events. The programme entailed the construction, establishment and equipping of a weather modification operation and research centre; and establishment of a cloud physics laboratory.

2.2.6 Forest Conservation and Management

Kenya's Constitution and Vision 2030 require forest and tree cover to be increased to at least 10% of the total land area. Forest and tree cover increased to an estimated 7.24 per cent in 2016 from an estimated 4.4 per cent reported in 2012. The sector increased the state managed forests from 1.2 million hectares to 2.4 million hectares, developed 115 Forest Management plans, facilitated production of 222,124 bamboo seedlings and 800 million tree seedlings and availed these for planting 500,000 hectares on farmlands for livelihood improvement. This contributed to climate change mitigation through the enhancement of GHG (forest) sink.

2.2.7 Wildlife Conservation and Management

The focus of the sector on wildlife conservation and management was to identify, map and document hotspots, refurbish and equip wildlife research stations, enhance ecological monitoring programs in protected areas, develop information and database for national wildlife research. The sector enhanced wildlife security and management, and promoted eco-tourism. The following were achieved: Mapping and documentation of wildlife migration corridors and dispersal areas in Naivasha-Hells Gate-Longonot-Lake Nakuru, Nairobi National Park-Swara Conservancy and Southern Kenya Rangeland (Amboseli National Park-Kimana-Chyulu National park). In addition, an Integrated Database System which incorporates wildlife research was developed.

2.2.8 Forestry research and development

The target for forestry research and development in the review period was to conduct research to develop intervention measures for causes of forest degradations, provide forestry related baseline data, establish a monitoring system on forest and aspects of climate change, identify and improve tree species for various uses and services, develop and demonstrate forestry technologies, new products, generate and disseminate knowledge and technologies.

In line with research, 16 demonstration plots were established on Prosopis management and utilization; technology of raising indigenous bamboo through cuttings was developed; 81Ha of seed sources established and 45,000 kg of high quality tree seed produced and distributed. In addition, 200,000 seedlings of difficult to germinate tree species were raised; 30 demonstration plots established on planting high value trees on farms including Bamboo and four (4) new tree products (food flavor from *Vitex payos* fruits, juice from *Syzygium cordatum*, *Opuntia jam* and nectar from *Vitex payos* and baobab) developed.

2.2.9 Rehabilitation and protection of water towers

This programme entailed the rehabilitation and protection of Kenya's five (5) major water towers namely; the Aberdares, Cherangany, Mau, Mt. Kenya and Mt. Elgon and other smaller significant Water Towers and catchment areas such as Chyulu Hills, Nyambene, Ngong Hills, Taita Hills, Maragoli, Marsabit, Shimba Hills, Ndotos, Nyiru, Hills in Machakos, Makueni and Kitui, Leroghi, Matthews Range and Dunes in Lamu and Northern Kenya.

The major achievements included: rehabilitation, protection and securing of 121,000 Ha in Enoosupukia (12,000 Ha), South.West Mau (19,000 Ha), Maasai Mau (64,000 Ha) and Olpusimuru (26,000 Ha) through Joint Enforcement Unit providing basis for natural regeneration; Conducted assessment of 18 water towers and developed water towers ecological health status reports; Identified critical catchment, wetlands and Biodiversity Hotspots in Mt. Kenya, Mau Complex, Mt. Elgon, Shimba Hills and Chyulu water towers.

In addition, Community Development Action Plans for Leroghi, Shimba Hills & Chyulu; Mau Ecosystem Strategic Management Plan; Micro-Catchment Conservation Plan for Taita Hills were developed. There was also voluntary surrender of 1,250 Ha in Mau complex and the Water Towers Conservation Fund established.

2.2.10 Promotion and piloting of Green Energy

The sector supported the development and implementation of 17 technologies and innovations including

clean cooking stoves and solar lighting that address the energy demand in the country. In addition, the Sector facilitated a research project on the factors influencing household adoption of renewable energy technologies in rural households in three (3) counties: Tharaka Nithi, Elgeyo Marakwet and Narok. National level assessment was undertaken through literature reviews. The findings will be used to promote the adoption of renewable energy options at household levels in rural communities. A policy brief and research publications were also developed.

2.2.11 Carbon credit trading

This programme planned to establish carbon trading schemes and a regional framework for carbon trading across the East African Community, the wider African region and beyond. While this was not done due to the collapse of the global carbon markets, some carbon offset schemes such as the Clean Development Mechanism (CDM) and Joint Credit Mechanism (JCM) have been operationalized.

2.2.12 Rehabilitation of storm water drainage systems in selected towns

The programme involved rehabilitation of storm water drainage systems in Nairobi, Mombasa, Kisumu, Eldoret, and Maua.

2.2.13 Digitization of Urban Plans

The objective was to prepare strategic development plans to enhance socio-economic development and optimal development of land use in 45 towns. Three draft urban plans for Bungoma, Webuye and Eldoret were prepared and will be digitized during the MTP III period.

2.2.14 Water Resources Management

This programme was geared towards sustainable utilization of water resources. During the planned period six (6) catchment management strategies were reviewed and 157 Sub Catchment Management Plans developed. The sector also implemented 30 sub-surface dams along seasonal rivers, especially in ASAL areas. In addition, 140 hydro-metrological stations were rehabilitated and installed across the 6 catchment regions. The sector upgraded 15 gauging stations to telemetry. Groundwater surveys in Northern and Central Turkana were completed. Hydrological mapping and drilling of exploratory boreholes in Turkana and Marsabit were completed and a Hydrological assessment report was prepared, leading to the drilling of ten exploratory boreholes. Towards the development of the national water allocation plan the sector developed and consolidated water allocation plans for three (3) basins namely Athi, Lake Victoria and Ewaso Ng'iro North.

2.2.15 Trans boundary Waters

The programme entailed negotiations on mutual utilization and conservation of trans-boundary waters thereby fostering harmonious coexistence on the continent and in the region. The sector intended to map shared water resources of the country and their parameters; Review international treaties on trans-boundary waters to address the water supply management and finalize the negotiations for the joint management and development of all shared water resources within the riparian states. In this respect, the locations of trans-boundary surface waters and their status were established and three bilateral frameworks developed, negotiated and finalized for the management of transboundary water resources of Sio-Malaba-Malakisi River, Mara River and lakes Challa-Jibe and Uмба River.

2.2.16 Water Harvesting and Storage

This programme targeted to increase of water storage capacity and availability for multipurpose uses. In line with this aspiration a final development plan for Nzoia dam was completed. The Nyando (Koru) Dam resettlement action plan was developed, land compensation surveys completed designs and tendering documents finalized. On the construction of 21 medium sized dams with storage capacity of 2 billion m³; Kiserian, Chemususu and Maruba dams were completed. Completion of Umaa and Badasa dams was hampered by contract disputes. Additionally, the regional development authorities have constructed 400 water pans and 70 boreholes, in an effort to mitigate the effects of droughts and climate change.

2.2.17 Urban Water Supply

The programme aimed at achieving universal access to safe water in urban areas. The overall coverage of the population with access to safe drinking water rose from 53.3 per cent in 2013 to 59.9 per cent in 2017. Over the same period, urban water supply coverage increased from 61.7 per cent to 70.3 per cent. The increase in water coverage was achieved through the establishment of water schemes in the major cities of Nairobi, Kisumu and Mombasa. The construction and expansion of water supplies in 15 medium sized towns partially contributed to the increase in access.

Access to sewerage is estimated to be 15 per cent in urban areas and 7.3 per cent nationally. The national sanitation coverage (which includes sewerage and onsite sanitation) is estimated at 68 per cent. The increase in coverage has been achieved through rehabilitation of sewerage schemes in Nairobi, Kisumu, Mombasa, Kericho, Kisii, Nyahururu and Muranga. In addition, new sewerage schemes were constructed in Othaya, Ruiru, Isiolo, Bomet, Garissa, Siaya, Bondo and Kitui.

2.2.18 Rural Water Supply

The programme aimed at achieving universal access to safe water in rural areas. National Rural water supply coverage improved from 47.1 per cent in 2013 per cent to 50.2 per cent in 2017. Rural access was boosted through the rehabilitation and extension of rural water schemes where 199 new water and sanitation projects were constructed, 410 existing rural water supplies were rehabilitated and 276 new boreholes were drilled and equipped.

2.2.19 Water Research and Resource Center (WARREC)

The Centre seeks to enhance and facilitate research in fields related to water resources utilization and management. The research center through its representatives participated in the Annual Water Conferences, signed the "Billion Dollar Business Alliance (BDBA) for Rainwater Harvesting– Kenya Chapter. WARREC also facilitated several capacity building activities on water sector issues such as training of Practitioners on Water Sanitation and Hygiene (WASH); training of women farmers on rainwater harvesting; and training of Water Resource Users Associations of the Tana Basin on integrated watershed management.

2.2.20 Provision of Water to Poor Un-Served Areas Including Informal Settlements

The programme earmarked strengthening of the Water Services Trust Fund (WSTF) to ensure that less fortunate and vulnerable members of society in the rural areas and informal settlements are served. The Water Services Trust Fund financed 27 urban water projects, 19 Urban Sanitation projects, 15 Water Resources projects and 103 rural water projects. As a result, a total 450,333 people have improved access to water services and 10,150 people have improved access to sanitation services. Social (flat rate) tariffs were also adopted to make water affordable to the poor.

2.2.21 Irrigation and drainage infrastructure

The programme seeks to increase food security potential through irrigation development and management. It targeted to put 404,800 hectares under irrigation, undertake a cost benefit analysis and introduce water recycling for irrigation purposes. The programme managed to increase the area under irrigation from 142,000 ha (355,000 acres) to 193,600ha (484,000 acres). This was realized through different programmes that include: Galana Kulalu; Food Security Project (GKFSP); National Expanded Irrigation Programme (ENIP); and Community Based Smallholder and Irrigation Projects.

2.2.22 Land reclamation

The programme entailed rehabilitation and reclamation of land in the counties prone to landslides, floods and heavy soil loss that leads to gullies formation and loss of landscape. During the plan period the total land reclaimed was 4,800 hectares out of an ultimate target of 50,000 hectares. This land included degraded and wasted environments rehabilitated with ecosystem water conservation structures. In addition, 4,984 reclamation structures and 701 water pans were constructed increasing water storage capacity by 16 million cubic meters.

A Kenya Socio Economic Atlas outlining areas vulnerable to degradation was also published during the plan period. Additionally, capacity building communities of 1200 people in ASAL counties to respond and participate in reversing degradation and climate change was undertaken.

2.2.23 Integrated regional development

The objective of the integrated development was to enhance food security in the country through irrigation, improve water storage and supplies for both domestic and livestock, step up flood control measures that will avert human loss and property destruction, increase conservation in major water towers and protect riparian land.

The programmes and projects delivered during the MTP II included continuation of review process on Regional Development policy and RDAs legal framework, Kimira Oluch Farm Improvement Project; Wei Wei Phase III and Mwaché Multipurpose Dam Project (Project Appraisal and Catchment Management Component). The review of various Public Private Partnership (PPP) projects to attract funding included Aror, Magwagwa, Nandi Forest, and Kimwarer multipurpose dams. Further, implementation of the National Water Harvesting and Storage Programme, Irrigation for National Food Security Programme and National Drought Mitigation Programme were achieved. In addition, construction of commercial facilities for sustainability and improvement of business environment, community empowerment projects and programmes of value addition and technology transfer across the RDAs regions.

3.0 EMERGING ISSUES, CHALLENGES AND LESSONS LEARNED

During implementation of projects and programmes in the Second Medium Term Plan, various emerging issues, challenges and lessons learnt have been considered in the preparation of the Third Medium Term Plan.

3.1 Emerging issues

The following issues came up in the implementation of the second medium term plan which affected the delivery of the sector. These issues need to be addressed in the third medium term plan.

i. Transitioning to green economy

The green economy is placing more demands on planning, training and capacity building

ii. E-waste management

Electronic and electrical equipment waste (e-waste) is the fastest emerging waste stream that is rapidly and increasingly being seen in dumpsites across the country today. Inappropriate disposal of e-waste leads to significant environmental problems and a systematic loss of secondary materials.

iii. Sophistication of poaching, smuggling and trafficking

There is an escalation of wildlife poaching, smuggling and/or trafficking in trophies like ivory and rhino horn through Kenya. The rise in demand for wildlife products in the international market has led to a resurgence of elephant and rhino poaching. This is due to the proliferation of small arms and light weapons into the country that pose a great danger to wildlife.

iv. Climate change

Effects of climate change and associated extreme weather events threaten sustainable development and impacts negatively on the sector. Flooding and droughts affect food production, water supply, housing access, livestock production and general livelihoods of the people. This results in substantial reallocation of resources towards drought mitigation and adaptation.

v. Integration of the National spatial plan policies into sector plans

The national spatial plan calls for assimilation of NSP policies to the sector plans and programmes. Sustainable development requires balancing social, economic and environmental dimensions of development and catering for current and future generations while Promotion of ecological integrity requires that plans promote the protection and conservation of environmentally sensitive areas.

3.2 Challenges

- i. Inadequate budgetary allocation;
- ii. Inadequate enactment of policy and legislation;
- iii. Slow implementation of PPP projects;
- iv. Environmental degradation and pollution;

- v. Inadequate bilateral mechanisms of trans-boundary natural resources;
- vi. Increased population pressure;
- vii. Inadequate institutional capacity to implement certain environmental initiatives such as national Air Quality Monitoring System;
- viii. Inadequate technical capacity to implement projects and programmes;
- ix. Inadequate water conservation strategies;
- x. Insecurity and resource conflicts in project areas;
- xi. Invasive plant species have posed a remarkable challenge to the integrity of the various ecosystems across the country;
- xii. Delays in implementation of functions devolved from National to County;
- xiii. Frequent shifting of the integrated development functions across ministries leading to slow implementation of ongoing projects and programmes;
- xiv. Poor infrastructure that inhibits access to project sites;
- xv. Political interference; and
- xvi. Lack of Commitment to multi-lateral environmental agreements such the African Forest Landscape Restoration Initiative (AFR 100).

3.3 Lessons Learnt

These lessons learnt include the following:

- i. Resource mobilization strategies are essential to support implementation;
- ii. Institutional capacity development is critical for effective implementation of projects and programs;
- iii. Pro-poor focused regulations are necessary to move development towards attainment of basic rights enshrined in the Constitution;
- iv. There is need for mainstreaming climate change in environment, natural resources conservation and management and integrated development programmes;
- v. Increased peri-urban and satellite towns has led to increased demand for water and sanitation services as a result of devolution;
- vi. Active stakeholder engagement is essential to the success of projects;
- vii. Implementation of integrated development programmes has the capability of spurring socio-economic development; and
- viii. Collaborative frameworks between the National and County governments are required in implementing shared and/or devolved functions.

4.0 PROGRAMMES AND PROJECTS FOR 2018 -2022

4.1. Flagship Programs

The programmes are designed to embrace development through manufacturing, affordable housing, improved food security and enabling a healthy population.

4.1.1. Waste Management and Pollution Control

The objective of the program is to improve solid waste management in urban and rural areas, consequently enhancing preventive health care. This will involve research, appropriate technologies and enforcement of statutory mechanisms for the disposal of human and industrial waste, e-waste, elimination of harmful emissions including those from factories and motor vehicles. Public awareness will be done to encourage use of biodegradable materials. In addition, Small and Medium Enterprises will be supported to set up recycling plants to manage the waste.

4.1.2. Strengthening Environmental Governance

The sector will establish enabling policy, legal and institutional framework coordination on governance for environmental, water, natural resource management, irrigation and regional development.

4.1.3. Modernization of Meteorological Services programme

The objective of this flagship is to integrate emerging technologies into the improvement of provision of meteorological services and information in order to better meet user needs and forecasting food production and its strategic reserves. This programme will involve Expansion and Automation of data collection network and weather observing systems; Improvement of data processing, analysis and forecasting systems; Improvement of data exchange and telecommunication systems; Enhancement of data management and archival systems; Enhancement of capacity for dissemination of information on disaster preparedness, mitigation and response; and Decentralization of meteorological services to counties.

4.1.4. Adverent Weather Modification Programme

The flagship programme seeks to mitigate the adverse impacts of severe weather and extreme climate events in order to reduce crop losses. This flagship programme will undertake the following: Hailstone suppression over Kericho-Nandi Hills area; Rainfall enhancement over the northern, north eastern and south eastern parts of Kenya (ASALs); Snow-pack augmentation over Mt. Kenya; Establishment of cloud chamber laboratory for studying the physics and chemistry of clouds and weather modification; Strengthen research on fog suppression in the high-ground areas of Kenya including fog suppression at airports/national highways; and Strengthen research on frost suppression in the high-ground areas of Kenya including frost bite mitigation; Aerosols and gaseous pollutants suppression in urban areas and establishment of a National weather radar network

4.1.5. Rehabilitation of Urban Rivers

This program seeks to rehabilitate and protect riparian areas to reduce siltation and maintain soil nutrients for increased food and nutrition security. The Sector will rehabilitate the major urban rivers in all counties. This will be done by undertaking the following: reclamation of the encroached areas; rehabilitation of

reclaimed riparian areas through; planting and nurturing of indigenous trees, river banks stabilization, dislodging to remove solid waste and sludge from the rivers; and environmental public awareness campaigns in all Counties; These activities will be done in consultations and partnerships with the County Governments, community participations and other agencies. In collaboration with County Governments, the national Government will enforce environment laws to prevent release of harmful effluents to rivers thus protecting pollution downstream and improving industrial and household water use.

4.1.6. Forest Conservation and Management

Forestry development in Kenya aims at maintaining the long-term health of forest ecosystems while providing environmental, ecological, economic, socio and cultural opportunities for the benefit of present and future generations. The Vision 2030 has provided a target to attain and sustain a minimum of 10% tree cover. There is a remarkable increase in forest cover from 6.01% in 2000 to 7.24% in 2016 equivalent to an annual increase of 0.1%. Strategies that will enable achievement of the 10% plus cover will include: use of superior germplasm, management plans, promote establishment on public, community and private land, concessions or contracts with private sectors, extension services and establishment and improvement of forest infrastructure. The forest products support construction industry, as well as non-timber uses; mainly gums, resin and honey, all of which will contribute to the wider manufacturing sector, housing sub-sector and job creation in general.

4.1.7. Rehabilitation and Protection of the Water towers

Proper management of water towers will ensure that there is a regular supply of quality water for households and manufacturing, while at the same time biodiversity is conserved, climate change mitigated against, and other benefits of sustainably managed forests are enjoyed by Kenyans for years to come. The programme will entail rehabilitation and protection of the 5 major Water Towers namely Aberdares Range, Mt. Kenya, Mau Forest Complex, Mt. Elgon and Cherengany. In addition, other smaller significant Water Towers and catchment areas in the country such as Chyulu Hills, Nyambene, Ngong Hills, Taita Hills, Maragoli, Marsabit, Shimba Hills, Ndotos, Nyiru, Hills in Machakos, Makueni and Kitui, Leroghi, Matthews Range and Dunes in Lamu and Northern Kenya will be rehabilitated. Other projects to be undertaken under this programme are: Mitigation and management of soil loss; Community Livelihood Improvement (CLIP); and Water Tower Protection and Climate Change Mitigation and Adaptation (Water). Further, other projects include promotion of bio-green energy, ASAL adaptation to climate change and TUNZA water towers project.

4.1.8. Forestry Research and Development

Forestry research and development program will undertake research activities related to; promotion of sustainable forest products utilization, development of forestry research technologies for propagation of fast growing species, forests conservation and management, biodiversity and environment management, and strengthening environmental governance. The program will also enhance forest information management for sustainable utilization and monitoring.

4.1.9. Wildlife Conservation and Management

The programme aims to sustainably conserve, manage and enhance Kenya's wildlife, its habitats, and provide a wide range of public uses in collaboration with stakeholders for posterity in support of tourism and biodiversity. In line with this programme the sector will: Strengthen governance in wildlife conservation and management, Enhance species conservation and habitats through securing of wildlife corridors and

dispersal areas, Reduce Human-Wildlife Conflicts, eliminate poaching, Strengthen partnerships in wildlife conservation and management with stakeholders, Enhance resource mobilization and Enhance Wildlife Research and Development

4.1.10. Water Resource Management

This program seeks to ensure sustainable utilization of water resources and improve quality of water in support of transformative agenda. During the plan period, 56 Sub-catchment management Plans (SCMPs) will be developed and 236 SCMPs implemented, 400 monitoring stations will be rehabilitated, ground water mapping will be undertaken and upgrade of 130 to telemetry, establishment of 80 surface water stations, 50 ground water monitoring stations and establish 4 national Water Quality reporting stations to reduce incidences and outbreak of water borne diseases during flood and drought periods. Pollution of water resources will be identified and measures undertaken to mitigate against its occurrence. These will include establishment of aluminium residues in drinking water, mapping of arsenic and fluoride in groundwater resource in 30 counties. Isotope Hydrology Laboratory will be established and operationalized.

For the counties, the sector will undertake development of Trans-County Water Resources Management Framework to guide the management of inter-county water resources which will ensure equity in water access and management. This will mitigate against the emerging inter-county conflicts on resource sharing and management. Mapping of water conflict areas and resolution mechanism will be undertaken in the hot spot areas and develop conflict resolution frameworks. A framework for protection and gazettelement of water bodies and the sources will be developed.

4.1.11. Water Harvesting and Storage

The programme targets to enhance reliable and adequate water harvesting and storage capacity to meet domestic, irrigation, industrial and environmental needs through the construction of dams and water harvesting structures.

The multi-purpose dams proposed include Mutonga High Grand falls, Soin-Koru and Thwake for hydro power, flood control, domestic use and irrigation. Towards improved access to water, medium sized dams for water supply include, Itare, Maragua, Ruiru II, Karimenu II, Bosto, Keven, Ndarugu I, Bonyuny, Umaa, Badasa, Muruny (Siyoi), Yamo, Kinja, Pesi, Kinale, Londiani, Upper Narok Bute, Kahurura, Isiolo, Rumuruti, Kitiri, Rare Rupingazi, Kamumu, Thambana, Mosegem, Bergei, Two Rivers, Kithiru, Kieni, Arat Fall, Wayu, Hirimani, Mwache Asa Kone, Kibuka, Kalundu, Matinga, Ukasi, Ikoo, Kaki-Ngunini, Kasaala.

Concerning enhanced food security, large and medium sized dams for irrigation include Galana, Thiba, Lowaat, Radat, Thuchi, New Gogo, Rwabura, Thiririka, Kaiti, Kitheno, Karemuni, Narumoru, Maara dams. In addition, the sector will enhance access to irrigation water in ASAL areas through rainwater harvesting by construction of 1,500 water pans, small dams and 4,000 water harvesting structures.

4.1.12. Urban Water Supply and Sanitation

The programme strives to achieve universal access to safe water in urban areas to reduce water-borne diseases. During the plan period a number of projects will be undertaken to increase the national water coverage from 60% to 80%. Likewise, urban water coverage will increase from 70.3% to 83%. This will be achieved by improving water supplies in major urban towns of Nairobi, Mombasa, Kisumu, Nakuru and Eldoret. Nairobi Northern collector, Chemususu water project, Itare water project and Mzima II are some

of the major projects that will increase water supply in the major urban towns. Increasing access to water supply will be undertaken for Nairobi satellite towns of Kiambu, Ruiru, Juja, Kikuyu Kiserian and Ongata Rongai.

Water supply and sanitation will be expanded in the proposed resort cities of Isiolo and Lodwar as well as the new port of Lamu under Lamu Port, Southern Sudan and Ethiopia Transport (LAPSSET) corridor. Expansion of water supply and sanitation will be undertaken in 20 medium sized towns namely; Chuka, Chogoria, Runyenjes, Naivasha, Narok, Maralal, Moyale, Wote, Kitui, Mavoko, Matuu, Wajir, Lamu, Moi's Bridge, Matunda, Malava, Marsabit and Nanyuki Nyahururu, Londiani, under the Vision 2030. Focus will also be given in the expanding water and sanitation coverage in the towns of Maseno, Mbale, Kaimosi, Malaba, Kapsabet, Nandi Hills, Wanguru, Kerugoya, Kutus, Kinango, Malindi, Meru, Embu, Karatina, Naro Moru, Timau, Nkubu, Kathwana and Garissa, Mandera, Makueni, Kisii, Homabay, Nyamira, Kericho, Migori and Mutuati. Mwala – Mbiuni cluster, Oyugis, Kendubay, Ukwala- Ugunja- Sega cluster, Mbita- Lwanda-Koyani cluster, Bomet – Mulot, Kilgoris, Lolgorian, Narok, Olkalau,, Kapenguria, Chepararia, Changamwe-Mombasa, Pemba, Limuru, Keroka, Isebania, Kiptogot, Kipkaren, Marigat, Turbo and Kabartojo.

The sector also will undertake “all round 30 minutes water fetch” connectivity in collaboration with County Governments. In addition, the service areas of 15 urban utilities will be digitally mapped, reduce Non-Revenue Water (NRW) by 2 percentage points per year. The sector will explore alternative financing options for water such as Green Water Credit Mechanism, Water Reserve Fund, Water Bond, Kenya Water Pool Fund, Commercial Financing and harnessing capital market resources.

4.1.13. Rural Water Supply

The programme pursues to achieve universal access to safe water in rural areas for household, industrial and irrigation uses. Water access coverage to rural areas has remained low over the years; during the plan period water coverage in rural areas will be increased by rehabilitating and expanding existing large rural water supply schemes. A total of 215 strategic boreholes will be drilled and equipped in Machakos, Makueni, Kajiado, Kitui, Turkana, Marsabit, Garissa, Isiolo, Wajir, Mandera, Tana River, Samburu, Laikipia, Baringo, West Pokot, Narok, Kwale, Lamu, Taita Taveta, Kilifi, Karatina, Murang'a, Naivasha, Tharaka Nithi, Homabay and parts of Meru. Further, Provision of safe, reliable and sustainable water to the needy 3000 public primary and 500 Public secondary schools will be undertaken. This will enhance access to clean and safe water, health and Clean living environment in the schools and the surrounding communities.

4.1.14. Water Research

The programme targets to enhance and facilitate research in fields related to water resources utilization and management. The sector will operationalize Water Resource Center at KEWI; establish and operationalize Water Resources Management Institute; establish Sewerage Research Centre in Kisumu; establish a Water Sector Research Funding mechanism to support water research projects; capacity building and technical assistance will be undertaken at county level. It will support and strengthen the participation of local communities in improving water resources management in the basins. Regional Centre for Groundwater Resources Education, Training and Research will conduct research on the current status of groundwater in the East African Region and undertake capacity building.

WARREC will provide research capacity to facilitate water management; work in consultation with Government and private institutions on joint research projects to support research in water for agriculture, hydraulics, land reclamation, irrigation and drainage development. Implement annual national and international scientific conference to capture new and emerging issues, trends and technologies in the

broad water sector. In addition, it will set up a national scientific database to capture emerging issues, trends and technologies on water sector issues.

4.1.15. Provision of Water to Poor Unserved areas including informal settlements

The programme will ensure that under-served areas in Kenya have adequate access to water and sanitation services to improve health care. The Sector will finance rural and urban water and sanitation projects in low income areas in collaboration with County Governments and implement the School WASH programme. The social/flat rate tariff shall continue to be implemented on an area basis and develop a system for reporting on low income areas to monitor progress in coverage.

4.1.16. Irrigation and drainage infrastructure

The programme seeks to increase food security potential through irrigation development and management. The sector will strive to increase land under irrigation by 625,000 acres (250,000 ha) through the implementation of large scale irrigation, smallholder irrigation projects, and ground water irrigation project for ASAL areas.

Galana Kulalu Food Security Project that entails developing 300,000 acres is the main large scale irrigation project whose objective is to stabilize supply of maize in the country. Other large scale projects to be developed alongside the dam projects include Lower Tana (Bura, Hola and Tana Delta), Greater Kibwezi, Mwea; Turkwel and Kerio Irrigation Project; Perkerra, Kaagari Gaturi, Lower Kuja, Rwabura, Kieni, Muringa Banana, Upper and Lower Nzoia, Ahero and West Kano, Lower Murang'a, Mitunguu, Rahole canal irrigation project to cultivate 225,000 acres.

Smallholder irrigation projects covering 100,000 acres will spread through the country to be implemented under the National Expanded Irrigation Program and Community Based Smallholder Irrigation Program. Lastly, installation of 15,000 greenhouses under groundwater irrigation project and water harvesting structures (water pans and small dams).

4.1.17. Irrigation Water Storage Programme

The programme seeks to increase reliability of irrigation water to support full exploitation of irrigation potential for food security through construction of water harvesting and storage facilities. This will involve construction of large and medium-sized irrigation dams which include Twake, Thiba, Lowaat, Radat, Thuchi, New Gogo, Kerita, Rwaburu, Thirirka, Galana, Kaiti, Sergoit, Kitheno, Karemuni, Narumoru, Elgeiyo Border dam, Lower Sabor, Maara, Narosura, Ngurumani, Kyakivai, Miu/Itharani, Uмба, Kipkoi/Kimatgei, Kora and Upper Nzoia dams to provide 2.74BCM irrigation water to cover 674,000 acres. In addition, it will involve construction of 1,500 water pans, small dams and 4,000 water harvesting structures in ASAL areas.

4.1.18. Irrigation Water Management Programme

The Sector will increase irrigation production and productivity efficiency from 60 per cent to over 150 per cent by 2022. This will involve the development and review of policies, legislations, regulations and guidelines; including research, capacity building and technical support to counties, irrigators and related stakeholders in order to promote sustainability of irrigation schemes through participatory irrigation management. In addition, an Irrigation and Drainage Information Management System (IDMIS) will be developed to facilitate mapping of irrigation schemes, water storage structures and general information

management.

4.1.19. Integrated Regional Development Programmes

The RDAs have made significant contributions in the development of this country in energy, water, environment, agriculture, transport and to some extent health sectors through the development and implementation of the regional integrated master plans within the respective basins. The initiatives to be undertaken on community support programmes and projects are the Tana Delta Irrigation Project, Wei Wei Community Livelihood Improvement Project, Kimira- Oluch Farm Improvement Project (KOSFIP), Malindi Integrated Social Health Development Project (MISHDP), Honey processing and Beehive production programmes among others.

In environmental conservation initiatives, programmes and projects will be undertaken at Mau, Cherangany, Upper Tana, Ewaso Ng'iro North River, Sabaki river catchments and Mt. Elgon.

In Technology Transfer Centres, programmes to be implemented across all the regions are Livestock multiplication Centres at Emali in Machakos County, Alupe in Busia County, Lichota in Migori County, Chesongoch in Elgeyo Marakwet County, Chemeron in Baringo County and Nomotio in Samburu County. Other centres include greenhouse technology for horticulture production, fingerlings production and manufacturing of building bricks.

On implementation of the projects of which feasibility studies were done includes, the proposed High Grand Falls Multipurpose Dam which is a major project in the TARDA master plan, the Nandi Forest, Magwagwa and Webuye Multipurpose Dams within the Lake basin, the Mwache Multi-purpose Dam Development Project and Lake Challa Integrated Water Development Programmes, Arror, Kimwarer and Embobut multi-purpose investments within the Kerio and Turkwel Basins. In addition, the Lower Ewaso Ng'iro Multipurpose Dams Project, Chalbi Integrated Development Programme (CIDP) and the Ewaso Ng'iro North Integrated Development Project (ENNIDP) within Ewaso Ng'iro South basin will be implemented.

4.2. Other Projects and Programmes

4.2.1. Promotion and Piloting of Green Energy

Besides large scale initiatives, the Government intends to promote green energy options by piloting innovative options that can be commercialized to reduce both air and liquid pollution. The sector, with other partners, will support the identification, refinement and development of green energy technologies through a comprehensive incubation programme. It is expected that these technologies will contribute towards reducing the energy deficit in the country and increasing efficiency. This will also contribute to the growth and development of green Micro, Small and Medium Sized Enterprises (MSMEs).

4.2.2. The Plastic Bags initiative

This will require sustenance of the total ban of plastic bags pursuant to the Gazette notice No. 2334 on the ban on use, manufacture and importation of all plastic bags (carrier and flat bags) to enhance clean environment and encourage use of biodegradable bags. This will therefore involve continuous monitoring, compliance enforcement and stakeholders' engagements. It will require collaboration between the National and County Governments.

4.2.3. National Environment Support Programme

This programme will enhance and promote conservation, protection and management of Environment through domestication and implementation of multi-lateral Environment Agreements. It will also support development and implementation of strategies and Action Plans, and assist to meet national obligations under MEAs including capacity building as well as institutional strengthening.

4.2.4. Trans-boundary Waters

This will entail development of legal framework for the implementation of trans-boundary water policy; Implementation of Kocholia multipurpose trans-boundary water resources; Sustainable development of Lake Turkana and its River Basin including establishment of four green villages for sustainable livelihoods, and four monitoring and Project Coordination mechanism; Mapping all surface and ground trans-boundary water resources and establishing their status; establishment of 20 hydro-meteorological stations on trans-boundary waters; Implementation of bilateral frameworks on Sio-malaba-Malakisi river sub-basin; and Mara River basin and Lakes Chala/Jipe and Uмба River basin; Negotiations for a joint management and development of shared water resources and Review of three international water treaties/conventions. Implementation of Maira and Norera trans-boundary storage dams; implement integrated management plan for Daua trans-boundary shared water resources

4.2.5. Land reclamation

The Sector targets to undertake rehabilitation and reclamation of 60,000 Ha in the counties prone to landslides, floods, heavy soil loss that leads to gullies formation, and loss of landscape function. It will identify and map all degraded land in the country and increase the utilization of waterlogged lands, swamps and flood prone areas by a further 50,000 Ha, including the use of wastewater.

In addition the Sector has earmarked utilization of one (1) million Ha of currently uncultivated reclaimed land and new cultivation of 1.2 million Ha of land by strategically developing more irrigable areas in arid and semi-arid lands for both crops and livestock.

4.2.6. Solar powered irrigation schemes

The Sector will implement other renewable energy projects on solar that include: Lichota, Muhoroni and Alupe solar irrigation projects which will improve food security and livelihoods. Other such projects are:- Ewaso Ng'iro South solar powered boreholes project, Masinga and Kiambere solar power generation projects, Samburu solar power project and the Expansion of Napuu II solar power generation project for water supply and irrigation support.

4.3. Other New Projects

4.3.1. Promotion of Green Economy

This initiative seeks to help implement the Green Economy Strategy and Implementation Plan (GESIP) to enhance green energy for manufacturing and household consumption. This will include resource use efficiency promotion and piloting of green energy in building resilience.

4.3.2. Green Technologies and Innovations Programme

The Sector will focus on creating awareness of green technologies and their initiatives; recognizing and rewarding best practice; and, creating an enabling environment for the promotion of green growth. This will promote financial inclusion, investments in green initiatives and improvement of innovative funding mechanisms.

4.3.3. Communication, Education and Awareness

This will enhance sharing of existing technical knowledge and implementation experiences at regional, national local and community levels.

4.3.4. Conservation and Rehabilitation of Wetlands

Wetlands are under immense threat and many continue to be degraded and lost at an alarming pace. The Sector will establish community based wetlands sites committee, rehabilitate degraded lands, and gazette critical wetlands.

4.3.5. Water Towers Information Management And Monitoring Programme

The programme entails establishing appropriate infrastructure for improved generation of data and information on management of water towers. It will develop a data platform to enhance better data and information archival, retrieval and support development of Water Towers Status report.

4.3.6. Sewerage programme:

The Government endeavors to provide universal access to sewerage facilities in urban centres by 2030. During the planning period the following projects will be undertaken: Improve sewerage facilities in Nairobi and satellite towns such as Kiambu, Ruiru, Juja, Kikuyu Kiserian and Ongata Rongai; Augmentation of sewerage facilities in Mombasa, Kisumu, Nakuru, Eldoret, Kitale, Kakamega, Garissa, Murang'a, Nanyuki, Homabay, Meru, Embu, Kericho and Machakos; Construction of new sewerage schemes in Malindi, Oloitoktok, Ol Kalou, Chapareria, Iten, Kabartonjo, Moi's bridge-Matunda, Malaba, Marsabit, Matuu, Mwingi, Voi, Mandera, Kapenguria-Makutano, Eldama Ravine, Narok, Marigat, Chuka, Chogoria, Kerugoya/Kutus, Kenol/Makuyu and Narumoru Towns.

4.3.7. Population, Health and Environment Programme

The programme will strengthen the legal and policy framework of population, health and environment approach in development planning. This will be done in collaboration with the National Council for Population and Development.

4.3.8. Micro Irrigation Development Programme

During the plan period the government will initiate irrigation programmes at the household level. This is aimed at providing food to families and increasing their income. This programme will cover the entire country, with special focus on major cities such as Nairobi, Mombasa, Kisumu and Nakuru, irrigation activities will be undertaken on roof tops. The programme will target one (1) Million households and farmers.

4.3.9. Promotion of Solar Energy and Wind Power for Irrigation Farming

The sector will put in place measures to ensure solar energy and wind power technologies are promoted to support irrigation farming. Areas to be targeted are Garrissa, Turkana, Makueni, Tharaka Nithi and other places with high solar and wind power potential

4.3.10. Promotion of Drip Irrigation and Green Houses

The effects of climate change have contributed greatly to decline of water available for irrigation agriculture. This has called for introduction of new technologies such as drip irrigation and use of green houses to ensure efficient water utilization. During the plan period the Sector will support five (5) Million farmers/households.

4.3.11. Swamps Reclamation Programme

Global warming has contributed to increase of sea level hence encroaching agricultural productive land. On the other hand floods in river Nzoia basin have turned agricultural productive lands into swamps. During the plan period the Sector will reclaim 50,000 Ha.

4.3.12. Irrigation Water Management

The programme will strive to increase irrigation production and productivity efficiency from 50% in 2016 to over 90% by 2022 for food security. This will entail development and review of policies, legislations, regulations and guidelines; including research, capacity building and technical support to counties, irrigators and related stakeholders in order to promote sustainability of irrigation schemes through participatory irrigation water management.

5.0 POLICY, LEGAL AND INSTITUTIONAL REFORMS

Arising from the CoK provisions and emerging issues, there is need to align and strengthen the existing policy, legal and institutional frameworks. In some instances, new policies, legal and institutional frameworks will be developed

5.1. Policy Reforms

- a. Develop Meteorology Policy;
- b. Develop Policy on Plastics;
- c. Develop National Air Quality Management Strategy;
- d. Develop National Solid Waste Management Policy;
- e. Develop policy on Population, Health and Environment;
- f. Finalize the National Wildlife Conservation and Management Policy (May 2017);
- g. Develop National Resource Assessment policy;
- a. Develop guidelines for the Wildlife act 2013;
- b. Develop guidelines for the Forest Conservation and Management Act 2016;
- c. Develop National Water Policy;
- h. Finalize the National Irrigation Policy;
- i. Finalize the National Land Reclamation Policy;
- j. Develop Sanitation Management Policy;
- k. Finalize the National Policy on Groundwater Resource Development and Management;
- l. Develop National Water Harvesting and Storage Bill; and
- m. Finalize review of the RDA Policy.

5.2. Legal Reforms

- a. Develop Meteorology Bill;
- b. Develop Bill on Plastics;
- c. Develop National Solid Waste Management Bill;
- d. Review Environmental Management and Co-ordination (Wetlands, river banks, lake shores and sea shore management) Regulations, 2009;
- e. Review Environmental Management and Co-ordination (Water Quality) Regulations, 2006;
- f. Finalize regulations and guidelines to operationalize the Water Act 2016;
- g. Enact regulations to operationalize the Wildlife act 2013;
- h. Develop regulations to operationalize the Forest Conservation and Management Act 2016;
- i. Drafting of Biodiversity bill;
- j. Drafting Water Towers Management Policy and bill;
- k. Review the Kenya Water Institute Act 2001;
- l. Review Environmental Impact/Audit Regulations of 2003;
- m. Finalize National Irrigation bill;
- n. Finalize National Land Reclamation bill;
- o. Develop Legal framework for the implementation of trans -boundary water policy;
- p. Draft National Water Harvesting and Storage Bill; and
- q. Finalize review of the RDA legal framework.

5.3. Institutional Reforms

- a. Establish Environment Sector Coordination Unit
- b. Operationalization of the National Water Harvesting and Storage Author

ANNEX I: IMPLEMENTATION MATRIX

Programme/ Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Flagship Projects												
Waste Management and pollution Control	To improve solid waste management in urban and rural areas	Improved solid waste management countrywide	Number of county dumpsites with ten minimum points	MoEF/ NEMA	2018-2022	GoK/DP	4,260	860	850	850	850	850
Strengthening Environmental Governance	To provide enabling policies, legislation and institutional arrangement.	Enhanced environmental natural resources' governance	No of policies, legislation and regulations implemented	MoEF/ NEMA	2018-2022	GoK/DP	5,821	1,042	1,161	1,206	1,216	1,196
Modernization of meteorological services	To enhance provision of meteorological services	National Weather Network Modernized	% of Meteorological services modernized	MoEF/KMD	2018-2022	GoK	4,325	726	827	860	932	980
Advertent weather modification	To promote operational research and real time monitoring of weather parameters	Radar derived weather data	No of Components of weather derived data system in place	MoEF/KMD	2018-2022	GoK	4,950.4	945.8	990	996	999	1,019.6
Rehabilitation of Urban Rivers	To rehabilitate and protect riparian areas in urban areas	Riparian areas in urban areas rehabilitated and protected	No. of KM of riparian areas rehabilitated	MoEF	2018-2022	GoK	1,500	300	300	300	300	300
Other Projects and Programs												
Promoting and Piloting of Green Energy	To increase adoption and sustainable use of clean and renewable energy technologies among Kenya rural households.	Renewable energy and renewable energy technologies agenda mainstreamed in the second generation CDIPs	No. of Renewable energy technologies adopted	NETFUND/ Development Partners	2018-2023	NETFUND/ DP	170	-	-	60	60	50

Programme/ Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Plastic bags initiative	Plastic bags banned in Kenya	Total ban of plastic bags in Kenya	% ban in plastic bags	NEMA, MoEF	2018 -2022	GoK	500	100	100	100	100	100
Promotion of Green Economy	To help the country transition towards a circular economy with Green Growth	Improved environment and climate change management	Number of Green Growth initiatives	MoEF/NEMA/ NETFUND	2018 -2022	GoK/DP	8,362.5	1,795.5	1,766	1,796.5	1,487	1,517.5
Conservation and Rehabilitation of Wetlands	Rehabilitation and conservation of wetlands and catchment areas	Catchment and wetlands conserved and rehabilitated	Hectares of wetlands and catchment areas rehabilitated	NEMA, KFS, KWTA, KWS	2018 -2022	GoK, DP	5,000	1,000	1,000	1,000	1,000	1,000
Population, Health and Environment Program	To simultaneously improve access to reproductive health including family planning services while helping communities manage their natural resources in ways that improve their health and livelihoods	Sustainable management of natural resources, improvement of livelihoods, food security, nutrition and habitats and ecosystem restored	Population, Health and Environment integrated approaches Policy	NCPD, NEMA, MoEF	2018 -2022	GoK/DP	500	100	100	100	100	100

Natural Resources Sub-Sector

Programme / Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs. Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Flagship Projects												
Natural Resource Policy and Governance	Strengthen policy, legal and institutional frameworks for Natural resource management	Well governed natural resources sector	No. policies developed	SDNR/ Agencies	2018 -2022	GoK/ Development Partners	53,812	9,930	10,380	10,861	11,158	11,483

Programme / Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs. Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
	To establish Wildlife Compensation Insurance Scheme (WCMA, 2013)	Wildlife Compensation Insurance Scheme Established	Wildlife compensation insurance scheme	SDNR	2018 -2022	GoK	5,000	1,000	1,000	1,000	1,000	1,000
	Establish the Wildlife Research and Training Institute	Wildlife Research and Training Institute established	Wildlife Research and Training Institute	SDNR/KWS	2018 -2022	GoK	10,000	5,000	2,000	1,000	1,000	1,000
Forest Conservation and Management	To increase forest cover from 7.24% in 2016 to 8% in 2022	Increased forest Cover to 8%	No of Ha	KFS	2018 -2022	GoK/ Development Partners	41,511	7,311	7,996	8,534	8,720	8,950
Rehabilitation and Protection of Water Towers	To rehabilitate and restore five water towers and other selected areas	Five (5) water towers and other selected areas rehabilitated and restored	No. of hectares rehabilitated	SDNR/KWTA/ KFS	2018 -2022	GoK/ Donor	20,074	3,700	4,500	4,233	3,821	3,320
							30	6	6	6	6	6
Forest Research and Development	To develop forest research technologies for sustainable management of forest and allied natural resources	Forest and allied technologies developed	No. of technologies developed	KEFRI	2018 -2022	GOK/DP	3,432	569	683	700	730	750

Programme / Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs. Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Wildlife Conservation and Management	To protect and conserve wildlife resources	Protection and Security of Wildlife, Mapping and Securing Wildlife Migratory Corridors, Reducing Human-Wildlife Conflicts, Modernizing anti-poaching technologies, Enhancing species conservation	Km of fence No of maps	KWS	2018-2022	GOK/DP	31,654	6,406	6,403	6,380	6,271	6,194
Other Projects and Programs												
Water Towers Information Management and Monitoring Program	To support water towers information management for improved conservation and management	Timely information and reporting on water towers status and management	No of reports Data platform on Water Towers Water Towers Monitoring Program	KWTA	2018-2022	Gok/De velopment Partners	1,800	400	400	400	300	300

Water Sub-Sector

Programme/Project	Project/ Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Flagship Projects												
Water Resources Management Programme	Conserve and Protect Water Resources	Increased availability of water resources	Total renewable freshwater (TRWR)-per capita (10 ⁹ m ³ /yr)	MWSWRMA/ WSTF	2018-2022	Gok/ De velopment Partners	43,116	8,263	9,310	9,349	9,015	7,579

Programme/Project	Project/ Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Water Harvesting and storage programme	Increase water storage and availability	Increase water storage capacity by 700 Million cubic meters	Storage capacity (M ³)	MWS	2018-2022	GoK/ De velopment Partners	325,626.2	83,349.2	89,442.5	76,148.5	50,250.5	26,435.5
Urban water supply	To increase access to safely managed water and sanitation supply	83% urban water coverage	Proportion (%) of population using safely managed drinking water services	MWS/WSSIs	2018-2022	GoK/ De velopment Partners	330,000	45,658	67,240	88,731	70,136	58,235
Rural Water supply	To increase access to safely managed water and sanitation supply	70% rural water coverage	Proportion (%) of population using safely managed drinking water services	MWS/WSSIs	2018-2022	GoK/ De velopment Partners	20,474.4	2727.6	5080.8	5057	3971	3638
Water research programme	Technical Capacity built in the subsector	Improved water sector reforms	Degree of implementation of capacity building and research on water at all levels. (%)	MWS/KEWI/ WSTF	2018-2022	GoK/ De velopment Partners	1857.5	572.5	484.5	301.5	299.5	199.5
Provision of Water to Underserved areas including informal settlements	To increase access to safe water and sanitation in underserved areas	Improved access to water and sanitation services for 3,145,300 people	No. of people accessing safe water and sanitation	MWS/WSTF	2018-2022	GoK/ De velopment Partners	10543.3	1770.3	2330.5	1993.9	2076.9	2371.6

Programme/Project	Project/ Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Other Projects and Programs												
Trans boundary Waters Management	Enhance cooperation in Sustainable management and development of shared water resources	Equitable utilization and sharing of benefits from these shared water resources	Proportion of transboundary basin area with an operational arrangement for water cooperation	MWS	2018-2022	GoK/De velopment Partners	9,342	2,746	2,481	1,918	1,246	951
Sewerage Programme	To increase access to safe water and sanitation	16% national sewerage coverage	Proportion of population using safely managed sanitation services	MW/WSIs	2018-2022	GoK/De velopment Partners	63287	8627	18544	2205	20248	13663

Irrigation Sub-Sector

Programme/ Project	Objectives	Expected Outcomes/ Outputs	Performance Indicator	Implementing Agency	Time Frame	Sources of Funds /Unit of measure	Indicative Budget (Kshs. Million)						
							Total	2018/19	2019/20	2020/21	2021/22	2022/23	
Irrigation and drainage infrastructure	Expand area under irrigation	Increase area under irrigation by 170,000 acres for Galana Kulalu Food Security project	No. of Acres increased	MOAI	2018-2022	GoK/ Development Partners	21,000	6,600	2,400	3,600	3,600	3,600	4,800
							36,375	2,000	3,125	6,250	9,375	15,625	
							75,000		7,500	15,000	22,500	30,000	
Irrigation water storage programme	Increase water storage and availability for irrigation	Increase water storage capacity by 2200(large and medium size dams)	Storage capacity (M³) increased	MOA/NIB	2018-2022	GoK/ Development Partners	180,120	6,657	18,186	34,973	51,759	68,545	
							2,198	180	20	20	879	1,099	
Strengthening Governance	To provide enabling policies, legislation and institutional arrangement	National water harvesting programme	Storage capacity (M³) increased	MOAI	2018-2022	GoK/ Development Partners	21,000	2,000	4,000	5,000	5,000	5,000	
							11,730	530	2,500	2,700	3,000	3,000	
							45	5	10	10	10	10	

Programme/ Project	Objectives	Expected Outcomes/ Outputs	Performance Indicator	Implementing Agency	Time Frame	Sources of Funds /Unit of measure	Indicative Budget (Kshs. Million)						
							2018/19	2019/20	2020/21	2021/22	2022/23	Total	
							1	1	13	10			
		Land reclamation policy and bill developed	Policy and bill	MOA	2018-2020	GoK/ Development Partners	25						
Irrigation water management programme	Increase production, efficiency and sustainability of irrigation schemes	Increase production and efficiency from 50% to over 90% by 2022	Increased efficiency by 90%	MOA/SDI	2018-2022	GoK/ Development Partners	4,600	0	200	2,000	1,400	1,000	
		Capacity building and knowledge management	No. of IUWAS capacity built	MOA/SDI	2018-2023	No	200	40	40	40	40	40	
		Establishment of irrigation data base and mapping of irrigation schemes	Irrigation data base established	MOA/SDI	2018-2022	GoK	220	0	50	100	50	20	
Micro/drip irrigation development programme	Expand irrigated area	Increase area under irrigation	No. of farmers	MWI	2018-2023	GoK	50,000	0	5,000	15,000	15,000	15,000	15,000
Promotion of solar energy and wind power for irrigation farming	Expand irrigated area	Increase area under irrigation	No. of farmers	MWI	2018-2023	GoK	5000	0	500	1,000	1,500	2,000	
Promotion of green houses	Expand irrigated area	Increase area under irrigation	No. of green houses	MW/NIB	2018-2023	GoK	50,000	0	2,000	10,000	20,000	18,000	

Programme/ Project	Objectives	Expected Outcome/ Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
		Degraded land identified and mapped	National land Regional Maps and Report	MWS	2018-2023	GoK/ Dev. Partners	100	20	20	20	20	20
		Reclamation of 60,000 ha	No. of hectares	MWS	2018-2023	GoK/ Dev. Partners	10,200	1,435	1,920	2,010	2,425	2,410
Micro Irrigation Development Programme	Expand irrigated area,	Increase area under irrigation	No Ha irrigated	SD/MWS	2018-2022	GOK	50,000	5,000	3,000	10,000	12,000	20,000
Promotion of solar energy and wind power for irrigation farming	Expand irrigated area,	Increase area under irrigation	No Ha irrigated	SD/MWS	2018-2022	GOK	5,000	300	400	1,000	1,200	2,000
Promotion of drip irrigation and green houses.	Expand irrigated area,	Increase area under irrigation	No. of Green Houses established	SD/MWS	2018-2022	GOK	50,000	2,000	10,000	18,000	15,000	5,000
Irrigation Water Management Programme	Increased production and productivity efficiency and sustainability of irrigation schemes	Increased production and productivity efficiency from 50% to 90%	% of efficiency increased	SD/MWS	2018-2022	GoK/ Development Partners	4,620	170	1,870	1,390	680	520

Integrated Regional Development

Project/ Program	Objective	Expected Output/ Outcome	Indicators	Implementing agency	Time frame	Source of funds	Indicative Budget (Kshs. Millions)					
							Total	2018/19	2020/21	2021/22	2022/23	
Flagship Projects												
Magwagwa Multipurpose Dam Project	To develop a concrete faced rock-fill dam with live storage capacity of 445 million cubic metres as well	ESIA report; Stakeholder mobilization report;	No. of reports	LBDA	2018-2023	GOK/ Donor	5,268	30	1,736	1,736	1,736	1,736

Project/ Program	Objective	Expected Output/ Outcome	Indicators	Implementing agency	Time frame	Source of funds	Indicative Budget (Kshs. Millions)						
							Total	2018/19	2020/21	2021/22	2022/23		
	as generate of 120 MW and irrigate 13,807 ha of land.	Duly signed implementation contract;											
Nandi Multipurpose Dam Project	To develop a 63 m high roller compacted earth dam with live storage capacity of 230 million cubic metres as well as generate of 50 MW and irrigate 7,500 ha of land.	ESIA report; Stakeholder mobilization report; Duly signed implementation contract;	No. of reports	LBDA	2018-2023	GOK/ Donor	2,010	30	200	250	1,500		
High Grand Falls Multipurpose Dam	Sustainable utilization of environmental resources, improve Food Security and income generation	5.4 bn M ³ Water storage; Hydro Power generation of 700 Mw ; Up to 180,000 ha irrigation potential; 20000 ha land conserved;	% Completion rate	TARDA	2018-2023	GoK Grants	100,060	20	20,000	30,000	50,000		
Tana Delta Sugar Irrigation Project (TDIP)	Sustainable utilization of environmental resources, food security, infrastructure development and revenue generation	16,000ha nucleus farm 4,000ha out growers component;	Tonnes of sugar produced	TARDA	2018-2023	GoK, Grants	30,080	20	5,000	10,000	15,000		

Programme/ Project	Objectives	Expected Outcome/ Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)						
							Total	2018/19	2019/20	2020/21	2021/22	2022/23	
		Sugar mill with cane crushing capacity of 10,000 ton/day; 35 MW power co-generation; White sugar at least 100,000 tons/year;											
Munyu Multipurpose Dam	To enhance quality of life through environmental protection, food security and revenue generation	Feasibility Study Report; Impound 575 million M ³ of live storage at Munyu Dam and Fourteen falls Hydro-Power Station – 4yrs; Hydro Power generation of 40 Mw; Develop 13,000 ha irrigation at Greater Kibwezi Irrigation – 8yrs	% completion rate	TARDA	2018-2023	GoK Grants	7,090	30	40	20	2,000	5,000	
Arror Multi-Purpose Dam Development Project	To enhance quality of life through environmental protection, food security and revenue generation	Constructed reservoir of 64 million cubic meters capacity; Provision of Clean water for domestic use to serve 50,000 hous-	No. of dams constructed; MWs of HEP; Acres of land irrigated;	KVDA	2018-2023	GoK Donor	35,000	5,000	8,000	10,000	8,000	4,000	

Programme/ Project	Objectives	Expected Outcome/ Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Kimwarer Multi-Purpose Dam Development Project	To enhance quality of life through environmental protection, food security and revenue generation	eholds & 80,000 livestock; Generation of 60MW of Hydro-electric power; Conserve and manage 185 km ² of the catchment area ;	No. of households and livestock provided with water;									
		Constructed reservoir of 22.3 million cubic meters capacity; Provision of Clean water for domestic use to serve 30,000 households & 80,000 livestock ;2,500 ha irrigable land for improved food security; Generation of 20MW of Hydro-electric power; Conserve and manage 136 km ² of the catchment area ;	No. of dams constructed; MWs of HEP; Acres of land irrigated;	KVDA	2018- 2023	GoK/ Donors	28,000	5,000	10,000	8,000	3,000	2,000

Programme/ Project	Objectives	Expected Outcome/ Output	Indicators	Implementing Agency	Time Frame	Sources of Funds	Indicative Budget (Kshs Million)					
Lower Turkwel Irrigation Project	To enhance quality of life through environmental protection, food security and revenue generation	35,000 ha developed and planted with sugarcane; 1.46 million tons of cane to be produced annually; Sugarcane factory developed for value addition; 150,000 tons of sugar produced annually; 500 tons of food crops produced by farmers;	Acres of land under irrigation; Tonnes of sugar produced	KVDA	2018- 2023	GoK/ Donors	38,565	50	5,000	10,000	10,000	13,565
Cherangany Conservation	To protect, conserve and rehabilitate Cherangany water shed.	114,416 ha of Cheran- gany Forest Ecosystem conserved; Riverbank protected, soil and water conserva- tion activities undertaken;	% forest cover protected; km of river bank protected;	KVDA	10 yrs	GoK Donors	1,000	60	120	120	150	150

Integrated Regional Development

Project/ Program	Objective	Expected Output/ Outcome	Indicators	Implementing agency	Time frame	Source of funds	Indicative Budget (Kshs. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Flagship Projects												
Magwaya Multipurpose Dam Project	To develop a concrete faced rock-fill dam with live storage capacity of 445 million cubic metres as well as generate of 120 MW and irrigate 13,807 ha of land.	ESIA report; Stakeholder mobilization report; Duly signed implementation contract;	No. of reports	LBDA	2018-2023	GoK/Donor	5,268	30	30	1,736	1,736	1,736
Nandi Multipurpose Dam Project	To develop a 63 m high roller compacted earth dam with live storage capacity of 230 million cubic metres as well as generate of 50 MW and irrigate 7,500 ha of land.	ESIA report; Stakeholder mobilization report; Duly signed implementation contract;	No. of reports	LBDA	2018-2023	GoK/Donor	2,010	30	30	200	250	1,500
High Grand Falls Multipurpose Dam	Sustainable utilization of environmental resources, improve Food Security and income generation	5,4 bn M ³ Water storage; Hydro Power generation of 700 Mw ; Up to 180,000 ha irrigation potential; 20000 ha land conserved;	% Completion rate	TARDA	2018-2023	GoK Grants	100,060	20	40	20,000	30,000	50,000
Tiana Delta Sugar Irrigation Project (TDIP)	Sustainable utilization of environmental resources, food security, infrastructure development and revenue generation	16,000ha nucleus farm; 4,000ha out growers component; Sugar mill with cane crushing capacity of 10,000 ton/day; 35 MW power co-generation; White sugar at least 100,000 tons/year;	Tonnes of sugar produced	TARDA	2018-2023	GoK, Grants	30,080	20	50	5,000	10,000	15,000

Project/ Program	Objective	Expected Output/ Outcome	Indicators	Implementing agency	Time frame	Source of funds	Indicative Budget (Kshs. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Munyuu Multipurpose Dam	To enhance quality of life through environmental protection, food security and revenue generation	Feasibility Study Report; Impound 575 million M3 of live storage at Munyu Dam and Fourteen falls Hydro-Power Station – 4yrs; Hydro Power generation of 40 Mw; Develop 13,000 ha irrigation at Greater Kibwezi Irrigation – 8yrs;	% completion rate	TARDA	2018- 2023	GoK Grants	7,090	30	40	20	2,000	5,000
Aror Multi-Purpose Dam Development Project	To enhance quality of life through environmental protection, food security and revenue generation	Constructed reservoir of 64 million cubic meters capacity; Provision of Clean water for domestic use to serve 50,000 households & 80,000 livestock; 4,000 ha irrigable land for improved food security; Generation of 60MW of Hydro-electric power; Conserve and manage 185 km ² of the catchment area ;	No. of dams constructed; MwS of HEP ; Acres of land irrigated; No. of households and livestock provided with water;	KVDA	2018- 2023	GoK Donor	35,000	5,000	8,000	10,000	8,000	4,000
Kimwara Multi-Pur- pose Dam Develop- ment Project	To enhance quality of life through environmental protection, food security and revenue generation	Constructed reservoir of 22.3 million cubic meters capacity; Provision of Clean water for domestic use to serve 30,000 households & 80,000 livestock ; 2,500 ha irrigable land for improved food security; Generation of 20MW of Hydro- electric power; Conserve and manage 136 km ² of the catchment area ;	No. of dams constructed; MwS of HEP ; Acres of land irrigated; No. of households and livestock provided with water;	KVDA	2018- 2023	GoK/ Donors	28,000	5,000	10,000	8,000	3,000	2,000

Project/ Program	Objective	Expected Output/ Outcome	Indicators	Implementing agency	Time frame	Source of funds	Indicative Budget (Kshs. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Lower Turkwel Irrigation Project	To enhance quality of life through environmental protection, food security and revenue generation	35,000 ha developed and planted with sugarcane; 1.46 million tons of cane to be produced annually; Sugarcane factory developed for value addition; 150,000 tons of sugar produced annually; 500 tons of food crops produced by farmers;	Acres of land under irrigation; Tonnes of sugar produced	KVDA	2018-2023	GoK/ Donors	38,565	50	5,000	10,000	10,000	13,565
Cherangany Conservation	To protect, conserve and rehabilitate Cherangany water shed.	114,416 ha of Cherangany Forest Ecosystem conserved; Riverbank protected, soil and water conservation activities undertaken;	% forest cover protected; km of river bank protected;	KVDA	10 yrs	GoK Donors	1,000	60	120	120	150	150

Ongoing Projects – Integrated Regional Development

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
1. Ewaso Ng'iro North Catchment and Riparian Rehabilitation Programme	To restore and rehabilitate degraded areas, Ewaso Ng'iro North River Catchment and riparian areas and mitigate against impacts of climate change on catchment areas and its effects to the population in the basin.	<ul style="list-style-type: none"> Improved the management and conservation of the Ewaso Ng'iro North River (ENNR) catchment. Rehabilitation of degraded forest and riparian in the basin. 	% forest cover	ENNDA	2 0 1 8 - 2023	GOK Donors	1,250	250	250	250	250	250
2.ENNDA Integrated Water, Food Security and Livelihoods Development Programme	To improve the livelihoods of the youth and women in the basin through harvesting rainwater for irrigation and training in dry land agriculture.	<ul style="list-style-type: none"> 2,000 water group water holes/cisterns developed and supplied with drip irrigation kits 5,000 acres of farms established 	No. of youth & women trained No. of Ha of farms established	ENNDA	2 0 1 8 - 2023	GOK Donor	7,500	1,500	1,500	1,500	1,500	1,500

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
1. Ewaso Ng'iro North Catchment and Riparian Conservation and Rehabilitation Programme	To restore and rehabilitate degraded areas, Ewaso Ng'iro North River Catchment and riparian areas and mitigate against impacts of climate change on catchment areas and its effects to the population in the basin.	<ul style="list-style-type: none"> Improved the management and conservation of the Ewaso Ng'iro North River (ENNR) catchment. Rehabilitation of degraded forest and riparian in the basin. 	<ul style="list-style-type: none"> % forest cover 	ENNDA	2 0 1 8 - 2023	GOK Donors	1,250	250	250	250	250	
2.ENNDA Integrated Water, Food Security and Livelihoods Development Programme	To improve the livelihoods of the youth and women in the basin through harvesting rainwater for irrigation and training in dry land agriculture.	<ul style="list-style-type: none"> 2,000 water group water holes/oisterns developed and supplied with drip irrigation kits 5,000 acres of farms established 	<ul style="list-style-type: none"> No. of youth & women No. of youth & women trained No of Ha of farms established 	ENNDA	2 0 1 8 - 2023	GOK Donor	7,500	1,500	1,500	1,500	1,500	
Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Total	2018/19	2019/20	2020/21	2021/22	2022/23
3.ENNDA Integrated Camel Development Programme	To improve livelihoods of residents in the Northern Kenya through poverty eradication measures by harnessing milk from camels as an adaptation mechanism	<ul style="list-style-type: none"> 20,000 selected women and youth undergo training workshops for technical knowledge transformation on rainwater harvesting and dry land farming. An international camel milk processing plant constructed and equipped. 8 camel milk cooling plants in the basin. Improved Livelihoods to over 4 million poor nomadic people living in the northern USD 5, 000,000 earned annually in Foreign Exchange 	<ul style="list-style-type: none"> milk processing plant No. of milk cooling plants Kshs. earned 	ENNDA	2 0 1 8 - 2023	GOK Donor PPP	2,450	500	500	750	500	200
4.Gum Arabic and Resins Integrated Development Programme	To improve the living standards of the community to utilize the abundant naturally occurring resources for improved livelihoods	<ul style="list-style-type: none"> Create job opportunities for over 3,000 gums and resins collectors in the region Foreign exchange earnings from the export of the gums and essential oils. 	<ul style="list-style-type: none"> No. of jobs created No. of new enterprises formed 	ENNDA	2018-2023	GOK	300	80	80	50	50	40

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
3.ENNDA Integrated Camel Development Programme	To improve livelihoods of residents in the Northern Kenya through poverty eradication measures by harnessing milk from camels as an adaptation mechanism	<ul style="list-style-type: none"> • 20,000 selected women and youth undergo training workshops for technical knowledge transformation on rainwater harvesting and dry land farming. • An international camel milk processing plant constructed and equipped. • 8 camel milk cooling plants in the basin. • Improved Livelihoods to over 4 million poor nomadic people living in the northern • USD 5, 000,000 earned annually in Foreign Exchange 	<ul style="list-style-type: none"> • milk processing plant • No. of milk cooling plants • Kshs. earned 	ENNDA	2 0 1 8 - 2023	GOK Donor PPP	2,450	500	500	750	500	200
4.Gum Arabic and Resins Integrated Development Programme	To improve the living standards of the community to utilize the abundant naturally occurring resources for improved livelihoods	Create job opportunities for over 3,000 gums and resins collectors in the region Foreign exchange earnings from the export of the gums and essential oils.	No. of jobs created No. of new enterprises formed	ENNDA	2018-2023	GOK	300	80	80	50	50	40
5.Lake Challa Water Resources Development	To improve the living standards of the community around lake Challa	Development of water and irrigation infrastructure for provision of water for domestic, livestock and wildlife Catchment conservation and rehabilitation	M3/yr water supplied Ha. of land under irrigation Ha of land under conservation	CDA	2018-2023	Gok; Donor	3,640	10	478	1,466	1,096	590
6.Malindi Integrated Social Health Development Programme (Phase I)	To provide socio-economic infrastructure to the rural centres in Malindi district	5 Education facilities constructed 2 health facilities constructed 3 infrastructural facilities constructed	No of schools constructed No. of health facilities rehabilitated and constructed No of infrastructural facilities constructed	CDA, CG	2018-2023	Gok; Donor	680	100	180	200	100	100

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
7. Integrated Coast Region Master Plan (Resource Mapping and Regional Data Bank Development)	To review ICRM and update the Resource Map and the Regional Data Bank	Review of ICRMP and Regional Data Bank (GIS platform) done	No. of reviewed master plans Updated resource map and data bank No of projects/ programmes promoted and approved	CDA,	2018-2023	GoK,	100	40	20	20	10	10
8. Kishenyi Multipurpose Dam project	To improve the living standards of the community in Weriuga/Kishushe area through provision of water for domestic and irrigation	Restored dam water capacity of 39,000m ³ through desiltation	M ³ storage capacity	CDA, MWI, NIB	2018-2023	GoK	300	50	100	100	50	-
9. Integrated Fruit processing	To provide market linkage, create employment and generate income for fruit farmers.	pulp processing line to serve 3000 fruit farmers established	Factory commissioned	CDA, CG	2018-2021	GoK	326	123	5	-	-	-
10. Boji irrigation	To contribute to food security, employment creation, increased income earnings among the community	Irrigation infrastructure development for 160 ha	No of ha under irrigation	CDA, CG, SDA, NIB	2018-2022	GoK	145	90	60	-	-	-
11. Wananchi Cottages	To provide modern and state of art conference facility.	Built and equip 1 Modern conference facility with 40 rooms	conference facilities built	CDA	2018-2021	GoK	200	60	30	12	-	-
12. Promotion of Sustainable Minerals exploration and processing	To provide market linkage for the gem stones and cheaper building materials	minerals explored and promoted	No. of minerals promoted	CDA, Mining, County government	2018-2023	GoK/DP	792	-	30	80	120	250
13. Ewaso Njiru Leather Factory project	To improve community Livelihoods	Factory with processing capacity of 4000 tons annually	Factory Constructed equipment	ENSDA, MTIC, Narok CG	2018-2023	GoK, Donor	405	150	100	85	50	20

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
14. Integrated Bamboo Commercialization and value addition	To reduce pressure on indigenous forests cover in Mau and Aberdares, To create wealth and employment To generate revenue	Bamboo processing plant for value addition 3 No. Bamboo cottage industries;	Bamboo multiplication and propagation centres established	ENSDA; Ministry of Trade, Industry and Cooperatives; MENR NEMA; KEFRI	2018-2023	GOK	700	236	300	100	50	50
15. Lower Ewaso Ngiro Multipurpose Dams project	To generate revenue through power generation and improve livelihoods	Hydropower Generation 180 MW; Water for irrigation (4500 ha) and domestic supply	3 Dams constructed 4,500 ha of land developed for irrigation; Water supplies infrastructure	ENSDA	2018-2023	GOK / Donor	16,000	10,000	3,000	2,000	500	500
16. Olkejuado Multipurpose Dam Project	To improve livelihoods through provision of clean water (domestic, & irrigation)	Water reservoir with capacity of 1 million cubic metres Clean water for 50,000 people & 200,000 livestock 1,000 ha irrigable land for improved food security Conservation of 200 ha of the catchment area	A Dam Constructed	ENSDA / Kajjido CG.	2018-2023	GOK / Donor	3,500	1,500	1,000	500	250	250
17. Oleyiangalani Integrated Dams Project	To improve livelihoods through provision of clean water (domestic, & irrigation)	A water reservoir capacity of 500,000 cubic meters Clean water for 20,000 people & 50,000 livestock 1,000 ha irrigable land for improved food security Conservation of 50 ha of the catchment area	A Dam Constructed; Water supplies infrastructure; Ha of land developed for irrigation; Ha of catchment area conserved	ENSDA / Kajjido CG	2018-2023	GOK / Donor	1,500	700	400	200	150	50
18. Ewaso Ngiro South Natural Resources Development Project	To provide a data / information resource centre to support sustainable development in the region	Data Resource Centre (infrastructure); GIS natural resource data bank;	Constructed data Centre; A GIS lab in place;	ENSDA; CGs – Narok, Kajjido, Nakuru, and Nyandarua; DRSRs (MENR)	2018-2023	GOK / Donor	1,000	300	250	200	150	100

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
19. Integrated catchment conservation and protection programme	To improve the quality of environment for sustainable development	Availability/accessible information and data for development; 5000 ha of degraded landscapes (Mau, Suswa-Magadi, Lolita and Aberdare ecosystems) rehabilitated; 100 kms of River banks protected (rivers Njoro, Malewa, Ewaso Ngiro and Mara)	Ha of forest restored; Kms of riparian land protected	ENSDA, MENR, NEMA; WRMA CGs (Marok, Kajiado, Nakuru, Nyandarua)	2018-2023	GOK / Donor	620	50	70	100	150	200
20. Agroprocessing and Value Addition Project	To increase incomes of farmers through processing to maximize value of horticultural produce	Agro-processing factory Increased acreage under horticultural production	Constructed factory Increase in acres of land under production	ENSDA; Kajiado County	2018-2023	GOK	800	20	400	180	150	50
24. Wei Wei Irrigation Project	To develop irrigation infrastructure for food production, improved household income and reduce insecurity created by cattle rustling through creation of employment opportunities.	-Irrigation infrastructure developed on 600 ha of land for food security -Korellach catchment area conserved -Capacity building for 600 farmers undertaken -Rehabilitation of offices and access roads undertaken - Reduced soil erosion and flash floods -Community support initiatives in place	No. of acres	KVDA	2018-2023	Gok, Donors	28,000	5,000	10,000	8,000	3,000	2,000
25. Mango Value Chain Project	To enhance mango production and value addition	-Increased mango production established -Mango processing plant -Mango processed into juice/pulp	No. of mangoes -Litres of juice	KVDA	2018-2023	Gok	123	20	15	15	10	10

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
26.Completion of KVDA Plaza	-To equip KVDA offices and install 3 new lifts to enhance traffic flow	- KVDA offices partitioned and furnished -3 new lifts installed	No. of lifts	KVDA	1	GoK	60	40	20	0	0	0
27.Community Integration Project	-To establish conservancies along the borders -Completion and operationalization of honey refinery project -To enhance livestock improvement centres -Establish inter community development programmes -Promotion of sports/cultural events	-4No conservancies developed -Construction of honey refinery completed -Livestock improvement centres operationalized -Sports/cultural events organized in each county -Peace forums undertaken	-No. of conservancies -Tons of honey processed -No. of peace forums held	KVDA	2018-2023	GoK	100	15	20	20	25	20
28.Regional Demonstration and Technology Development Centres	-To develop and transfer Reticulation/Aquaculture System (RAS) Technology targeting 16,000 inland fish farmers in Kisumu, Busia, Bungoma, Nandi, Trans-Nzoia, Homabay and Nyamira Counties.	• RAS Technology centre developed	No. of Centres	LBDA	1yr	GoK	31	31	0	0	0	0
29.Integrated Land and Water Ecosystem Studies (Nzoia & Lambwe basin)	-To conserve 5000 ha of degraded riparian areas and enhance livelihoods of 13,000 households in Lower Nzoia and Lower Sordu River Basins.	• 5000 ha of degraded land conserved	Hectares of land conserved	LBDA	2018-2023	GoK	400	80	80	80	80	80
30.Lichota, Alupe & Muihoroni Solar Irrigation Project	-To drill three boreholes, install 3 solar array units for submersible pump, build three elevated steel tanks with pipe layouts and install irrigation units	200 ha irrigated	Ha of irrigated land	LBDA	2018-2023	GoK	325	65	65	65	65	65
31.Lake Basin Mall Complex – loan payment	-To operate the mall efficiently and generate income for the sustainability of LBDA	• 4.2 billion loan plus interest cleared	Amount in Ksh. cleared	LBDA	2018-2019	GoK	2,000	2,000	0	0	0	0

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
32. Upscaling of Rice Mill	To revamp the Rice Mill to operate efficiently and provide a sustainable market for rice farmers' produce to enhance their livelihoods through value addition	<ul style="list-style-type: none"> Revamped rice milling plant 	Tonnes of rice milled per hour	LBDA	2018-2023	GoK	192.5	37.5	42.5	37.5	37.5	
33. Kieni Integrated Irrigation Project	To improve the quality of life for Nyeri county residents through sustainable utilization of environmental resources	<ul style="list-style-type: none"> Construction of seven (7) multipurpose dams. Enhanced food security through irrigation of a possible 13, 000ha. Provision of clean water for human and livestock consumption to 52,000 households 	<ul style="list-style-type: none"> No. of dams constructed Area(Ha) under irrigation 	TARDA	2018-2023	GoK, Grants	25,000	2,500	8,000	5,000	8,000	1,500
34. Tana Delta Rice Irrigation Project (TDIP)	To enhance quality of life for the residents of Tana Delta through sustainable utilization of environmental resources, food security, infrastructure development and revenue generation	<ul style="list-style-type: none"> Increased area under rice to 12000 ha 	No. of Ha under rice production	TARDA	10 yrs (2009-2019)	GoK, Grants	2,303	150	800	100	200	200
35. Murang'a Food Security Programme	To enhance food security through provision of clean water for human and livestock for consumption improving livelihood	<ul style="list-style-type: none"> Develop 5,000 ha for irrigation; Provision of clean water for human and livestock consumption Improved livelihood 	<ul style="list-style-type: none"> Ha under irrigation Volumes of produce 	TARDA	2018-2023	GoK, Grants	10,400	1,000	2,500	5,000	1,500	400
36. Ecotourism Development (Masinga Dam Resort)	Resource benefit sharing with communities, Improved revenues for tourism sector in TARDA region & job creation	<ul style="list-style-type: none"> Conserve Environmental Resources Establish a Viable Eco-Tourism Enterprise Alleviate Poverty 	<ul style="list-style-type: none"> Ecotourism enterprise identified and implemented % increase in revenue generation 	TARDA	2018-2023	GoK Grants	260	45	50	30	20	20

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
37. Integrated Regional Development Master plan	To review the integrated TARDA master plan and update resource map	Written statement of the Plan Maps and Graphics-Photo-graphs Technical reports Policies and Strategies Outline of projects to be taken Implementation frame work-Governance Institutions	% Completion rate	TARDA	2018-2023	GoK Grants UN Habitat	60	20	10	30	0	0
38. Capacity Building and technology transfer.	To impact knowledge, skills and experience to the communities so as to strengthen and maintain their capabilities	Maximize on community production. Improved farming methods Employment creation	Number of farmers and staff trained	TARDA	2018-2023		65	35	30	0	0	0
39. Email Livestock Multiplication	To improve community livelihood and enhance land productivity	To improve livelihoods Food security Provision of clean water Technology Transfer Improve livestock breeds Income generation	No. of technology interventions no. of beneficiaries % increase in revenue generated	TARDA	2018-2023	GoK Grants PPP	200	80	50	40	30	0
40. Kibwezi Irrigation Project	To improve the quality of life for Makueni county residents through sustainable utilization of environmental Resources	To improve livelihoods Food security, Provision of clean water, Technology Transfer No. of farmers trained Income generation	Volumes of farm produce Area under irrigation	TARDA	2018-2023	GoK Grants PPP	400	150	100	80	70	0

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
41. Masinga Irrigation Project	To improve the quality of life for Machakos county residents through sustainable utilization of environmental Resources	To improve livelihoods Food security, Provision of clean water, Technology Transfer No. of farmers trained Income generation	Volumes of farm produce No. of farmers trained Area(ha) under irrigation	TARDA	2018-2023	GoK Grants PPP	300	100	150	50	0	0
42. Kiambere Irrigation Project	To improve the quality of life for Embu county residents through sustainable utilization of environmental resources	To improve livelihoods Food security, Provision of clean water, Technology Transfer No of farmers trained Income generation	Volumes of farm produce No. of farmers trained Area(ha) under irrigation	TARDA	2018-2023	GoK Grants PPP	450	200	150	100	0	0
43. Kimira Oluch Small holder Farm Improvement Project	To improve income levels in a sustainable manner and ensure food security for the rural households thus reduce poverty through improvement of agricultural production, productivity and the value of agricultural produce for improved rural livelihoods in Kenya.	i). 62km of In-field and drainage irrigation (tertiary) canals constructed ii). 87 in-field irrigation blocks constructed and connected	Km Blocks No. of official trained	KOSHIP	2018-2021	GoK	2,450	800	600	500	300	250
44. KOSHIP Phase II- Proposal on Marketing and Value Addition Project	To contribute to poverty reduction by improving livelihoods of target rural households through increased agricultural productivity, value addition and increased market linkages	Increased production, productivity and quality of harvested crop	No. of farmer No. of facilities built No. of agro-processing facilities	KOSHIP	2018-2023	ADB /GoK	6,100	610	1,830	2,135	915	610
45. Coordination of Implementation of Integrated Regional Development Programme	To improve process of implementation of programmes and projects for sustainable development	Feasibility studies and detailed design projects completed and resources mobilized Projects performance review reports	No. Reports	DRD Hqs	2018-2023	GoK	2,820	1,560	60	60	70	70

Other New Projects – Integrated Regional Development

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
ENNDA Regional Data and Resource Centre Project	To promote the development of the basin through provision of reliable data and information for better decision making and planning.	<ul style="list-style-type: none"> Evidence based decision making 	No. of reports	ENNDA	2 0 1 8 - 2023	GOK Donors	250	50	50	50	50	50
Water Harvesting and Storage Programme	To improve sustainable access to water of good quality and quantity for the poor through development of water resources.	<ul style="list-style-type: none"> 250 water pans 250 boreholes 75 small water storage facilities 75 water harvesting facilities in public institutions (Schools and health facilities) 	No.	ENNDA	2 0 1 8 - 2023	GOK Donor	6,225	750	725	1,500	1,500	1,750
Chalbi Desert Integrated Development Programme	To harness the wind resources in Chalbi Desert	<ul style="list-style-type: none"> Integrated development of Chalbi desert 	Chalbi desert integrated development plan	ENNDA	2 0 1 8 - 2023	GOK Donor PPP	195,000	30,000	50,000	50,000	50,000	15,000
Ewaso Ng'iro North Integrated Development Programme	To construct a multi-purpose dam along the Ewaso Ng'iro North River to regulate river flow and control the frequent destructive floods in Narok and provide water for domestic, industrial, livestock and irrigation.	<ul style="list-style-type: none"> A multi-purpose dam along the Ewaso Ng'iro North River to regulate river flow controlling the frequent destructive effects of floods 40MW of power for the national grid 	No. of Dams created MW of HEP	ENNDA	2 0 1 8 - 2023	GOK Donor PPP	70,000	3,500	35,500	5,500	5,500	20,000
ENNDA Northern Kenya Integrated Central Meat Processing Factory	To improve the living standards of the communities in the Northern Kenya through procurement and value addition of livestock in the region	<ul style="list-style-type: none"> A meat Processing factory. 50 livestock watering points in the livestock supply counties and along the livestock routes and the holding areas. Food security and social wellbeing 	No. of meat processing plants No. of livestock watering plant	ENNDA	2 0 1 8 - 2023	GOK Donor PPP	3,500	750	1,250	500	500	500

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Shimoni Integrated Development Project (SIDEP)	To develop an Industrial Port that will sustainably utilize local natural resources, decongest cargo handling at Kenya Coast and improve on living standards of the local community	<ul style="list-style-type: none"> Shimoni integrated development in place 	Shimoni integrated development plan in place	CDA, KPA, SDF, CG	2018 - 2023	Gok; Donor	63,000	5,000	10,000	20,000	20,000	8,000
Integrated Water Resources Development Project	Improve sustainable access to affordable quality water and quantity for the poor through development of water resources and modern technology irrigation for improved standard of living	<ul style="list-style-type: none"> Improved accessibility of rural safe water in all the target Counties Improved sustainable utilization of available water for livelihoods Enhanced and strengthened Institutional capacity of CDA and the other implementing partners/stakeholders 	<ul style="list-style-type: none"> M3/yr of water supplied No. of water resources developed Ha. of land under irrigation 	CDA, Coast Water Services Board, WRA, CG, Min. Trade, Export Promotion council	2018 - 2023	Gok; Donor	2,801	301	500	800	900	300
Dembwa Multi-Purpose Dam Development Project	To improve the living standards of Taita Taveta County residents through provision of clean water (domestic, & irrigation) and hydro-power.	<ul style="list-style-type: none"> Constructed 100m high dam with a reservoir capacity of 60 million cubic meters Provision of Clean water for domestic use to serve 200,000 people & 20,000 livestock 3,000 ha irrigable land for improved food security Generation of 3 MW of Hydro-electric power Conserve and manage 300 square kilometers of the catchment area 	<ul style="list-style-type: none"> % of dams constructed MW power produced Ha land under irrigation No. of people and livestock supplied with water 	CDA, NEMA, MWI,	2018 - 2023	Gok, Donors	8,000	1,000	2,000	3,000	2,000	1,000
Solar Power Generating Project-Samburu	To improve the standard of living through production of clean affordable energy and Strengthen CDA financial base	<ul style="list-style-type: none"> Increased electricity production 	MW produced	CDA, Min. Energy, KPLC, KERA	2018 - 2023	Gok, Donors	507	50	107	200	100	50
Umha River Integrated Project	To contribute to flood control, the attainment of food security, increased income and wealth creation within the community	<ul style="list-style-type: none"> Construct flood control dams and reservoirs To provide water supply for domestic, irrigation and industrial use 	<ul style="list-style-type: none"> Ha. of land under irrigation Ha land conserved and rehabilitated 	CDA, CG, NIB, Min. Agri.	2018 - 2023	Gok; Donor	500	100	100	200	50	50

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Kenya Coastal Integrated Climate Change Management Programme	To enhance adaptability and mitigation against both mild and adverse effects of climate change.	<ul style="list-style-type: none"> Integrated Shoreline and Mangrove Ecosystem Management, for Food Security Enhancement, environmental conservation 	<ul style="list-style-type: none"> Ha of shoreline land rehabilitated Ha land under food production 	C D A , NEMA, KMFRI, KWS	2 0 1 8 - 2023	Gok, GCF funds	2,585	585	800	600	400	200
Dhoi Multipurpose Dam Project	To enhance drought resilience of Southern Garissa County (Huligato, Ijara, Fafi Sub -Counties) through improved food security and income & livelihoods.	<ul style="list-style-type: none"> Construction of the Dam 100m height with 60 million m3 water reservoir capacity Improved food security to about 30,000 people Access to portable water to about 60,000 people and 105,000 livestock 	<ul style="list-style-type: none"> M3/yr of water produced No. of people improved with water provision and food security No. of livestock provide with water 	CDA, Min. Water, Min. Agri, NIB	2 0 1 8 - 2023	Gok, Donors	7,000	150	1,000	3,000	2,000	850
CDA Complex	To enhance CDA financial base and also improve on the availability of office space	<ul style="list-style-type: none"> 1 complex with offices spaces built and furnished 	<ul style="list-style-type: none"> No. complex built and furnished 	CDA	3yrs	Gok/DP	400	100	150	150	-	-
Revival of Cashewnut Industry	To revive the cashew nut industry in order to contribute to the attainment of food security, poverty reduction, employment and wealth creation to youths and women	<ul style="list-style-type: none"> To carry on feasibility study to ascertain project viability; Establish 6 semi processing plants 100tonnes/day cashewnut processing Train farmers 1000 on GAP 	<ul style="list-style-type: none"> Feasibility study report No. of semi processing plants established Tonnes /day cashewnuts processed No of farmers trained 	CDA, CG, Min Agri,	2 0 1 8 - 2023	Gok/Donors	3,240	100	540	1000	1500	100
Embobut Multipurpose Project	<ul style="list-style-type: none"> i. To construct a dam to store water for generation of 45MW of HEP ii. To expand land under irrigation by an additional 2,500ha to support food security iii. To provide water for both domestic and livestock consumption iv. To undertake conservation programmes 	<ul style="list-style-type: none"> Construct a dam reservoir capacity of 13.97 million m³ Provision of Clean water for domestic use to serve 30,000 households & 70,000 livestock 2,500 ha irrigable land for improved food security Generation of 45MW of Hydro-electric power Conserve and manage 195 km² of the catchment area 	<ul style="list-style-type: none"> No. of dams constructed -MMW of HEP -Acres of land irrigate -No. of households and livestock provided with water 	KVDA	2 0 1 8 - 2023	Gok, Donors	28,000	0	0	5000	10000	10000

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Marble Value Chain Project	To mine and process marble by establishing a marble processing plant	-Marble processing plant established -Marble production	No. of Marble Plants Tons of Marble processed	KVDA	2 0 1 8 - 2023	Gok, Donors	28,000	5,000	10,000	8,000	3,000	2,000
Green Growth Integrated Project	To implement programmes for green growth	-Environmental Conservation Programme -Aloe Vera Value Chain Programme -Food Security Programme -Mango Value Chain Programme -Water Harvesting Programme	% of forest conserved Tons of Aloe vera processed Tons of food produced	KVDA	2 0 1 8 - 2023	Gok	5,000	0	500	1000	2000	2500
KVDA Nairobi Office Complex	To develop KVDA Nairobi office complex on existing plot	-26 storey office complex developed -600 parking lots developed	Office block	KVDA	4 years	GOK/ Donor	5,000	0	2000	2000	1000	0
Integrated Water Resources Development Project	The overall goal is to improve sustainable access to affordable quality water and quantity for the poor through development of water resources and modern technology irrigation for improved standard of living	<ul style="list-style-type: none"> Improved accessibility of rural safe water in all the target Counties through construction of new boreholes, dams and rehabilitation of water pans Improved sustainable utilization of available water for livelihoods Enhanced and strengthened Institutional capacity of KVDA and the other implementing partners/stakeholders 	M³ of water No. of people	KVDA	2 0 1 8 - 2023	Gok	500	0	100	200	200	0
Integrated Regional Data Resource Centre	To establish data resource centres at HUS and Regional offices	<ul style="list-style-type: none"> HUS/Regional Data Bank (GIS platform) updated Promotion of projects and programs 	% data collected Reports	KVDA, Department, Physical planning	2 0 1 8 - 2023	Gok	500	0	100	200	200	0
Solar Power Irrigation Project	To improve the standard of living through production of clean affordable energy for household use and irrigation	<ul style="list-style-type: none"> Develop and install solar powered irrigation system for 1000 ha Generation of electricity of 20 MW to be supplied to the National Grid 	Ha of land installed with solar powered system	KVDA, Min. Energy, KPLC, KERA	2 0 1 8 - 2023	Gok, Donors	200	0	100	75	25	0

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Integrated Regional Development Master Plan (2013 – 2033)	To identify and plan for the effective exploitation of the natural resources and the development opportunities in the region <ul style="list-style-type: none"> 1 GIS laboratory % completion Concept papers on viable projects No. of concept papers	<ul style="list-style-type: none"> 1 Integrated Regional Master Plan 	No. of master plans	LBDA	3yrs	GOK/ Donor	608	206	202	200	0	0
Safe Drinking Water Project	To provide communities with access to clean water <ul style="list-style-type: none"> 500 job opportunities created No. of jobs	<ul style="list-style-type: none"> 1 plant established 	% completion	LBDA	2 0 1 8 - 2023	GOK/ Donor	165	33	33	33	33	33
Fruit and Vegetables Processing Plant Project	To catalyze fruit and vegetables production by providing a reliable market and adding value to farmers' produce in the region <ul style="list-style-type: none"> 1,500 job opportunities created No. of jobs	<ul style="list-style-type: none"> 3 plants established 	No. of plants established	LBDA	2 0 1 8 - 2023	GOK/ Donor	951.6	445.9	445.8	20	20	20
Integrated Technology Development for Catchment Conservation	To promote the propagation, growth and use of bamboo as an alternative to indigenous trees <ul style="list-style-type: none"> 5,000 farmers empowered on bamboo technologies No. of farmers	<ul style="list-style-type: none"> 3 bamboo propagation centres developed (Kimulot, Mt-Elgon and Kwanza) 	No. of propagation centres	LBDA	2 0 1 8 - 2023	GOK	480	96	96	96	96	96

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Green Technology for Schools	To promote the use of biogas in schools for provision of green energy	<ul style="list-style-type: none"> Development of biogas technology in 2 schools per county 	No of schools	LBDA	2 0 1 8 - 2023	GOK	700	140	140	140	140	140
Webuye Multipurpose Dam Project	To develop a 54m high dam for generation of 30 MW of HEP and water supply for domestic and industrial use	<ul style="list-style-type: none"> Feasibility Study report Detailed Design report ESIA report Stakeholder mobilization report Duly signed implementation contract Feasibility Study report 	No. of reports	LBDA	2 0 1 8 - 2023	GOK/ Donor	250	50	50	50	50	50
Hydro-Electric Power Generation from low cost Community Mini Plants (Ireimi, Iriamaina, Kibogon, etc)	To develop community HEP mini-plants for generation of hydroelectric power	<ul style="list-style-type: none"> 10 HEP mini-plants developed 3.47 MW of electricity produced 8,200 household connections 81 sub-stations established 	No. of plants MW of electricity	LBDA	2 0 1 8 - 2023	GOK/ Donors	500	100	100	100	100	100
Biomass Power Plant	To develop a 7.5 MW Biomass Power Plant in Kisumu	<ul style="list-style-type: none"> 7.5 MW of electricity generated 	MW of electricity	LBDA	2 0 1 8 - 2023	GOK/ Donor	1,300	109	109	325	323	109
Kapche mosin Integrated Community Water Supply Project	To supply and distribute water to Kapchemosin Community in Nandi County	<ul style="list-style-type: none"> 150 m³ Reservoir tank Water Kiosks Water Piping System Pump house established Solar Panels installed 	Cubic metres (m ³) No. of water kiosks No. of solar panels	LBDA	2 0 1 8 - 2023	GOK/ Donor	131.3	26.3	26.3	26.3	26.3	26.3
Lake Victoria Basin Integrated Climate Resilience WASH Programme	To enhance access of water and sanitation facilities to schools and promote hygienic practices for reduced cases of water borne diseases	Improved water supply in the schools	No. of beneficiaries	LBDA	2 0 1 8 - 2023	GOK/ Donor	1,243	248.7	248.7	248.7	248.7	248.7

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
Lake Victoria Basin Livelihood Improvement Project	To improve the economic and social well-being of communities living around Lake Victoria through conservation of its catchment area	<ul style="list-style-type: none"> Improved water supply in the area 	No. of beneficiaries	LBD/ Partners	2 0 1 8 - 2023	GOK/ Donors/ Partners	4,026	1,125	1,028	938	676	259
Nyando Delta Management Plan Project	To strengthen institutional capacities for effective eco-system based adaptation and climate change mitigation in Kenya	<ul style="list-style-type: none"> Lake Victoria stocked with 100,000,000 fingerlings 8,100 job opportunities created 500 community fish ponds established 100 community tree nurseries established 3,000 energy saving jikos supplied to communities 50,000 largstroth beehives distributed 	<ul style="list-style-type: none"> No. of fingerlings stocked No. of community tree nurseries 	LBD/ Partner Organizations	2 0 1 8 - 2023	GOK/ Donor	1,000	200	200	200	200	200
Domestic Biogas Development Centres	To develop biogas digesters for production and compression of ethane into cylinders and transfer of the technology to the community	<ul style="list-style-type: none"> 4 Biogas digesters developed 4,000 beneficiaries 	<ul style="list-style-type: none"> No. of digesters developed No. of beneficiaries 	LBD	2 0 1 8 - 2023	GOK/ Donor	450	90	90	90	90	90
Improvement Nyakoe Market	To enhance productivity and food security	<ul style="list-style-type: none"> Improved Market infrastructure 	Percentage completion	LBD	2 0 1 8 - 2023	GOK/ Donor	50	50	0	0	0	0
LBD/ Bio-economic Technology Facilitation and Transfer program (Phase I & II)	To enhance productivity, food security and economic empowerment of communities through Public Education and Awareness on Biotechnology and Bioscience.	<ul style="list-style-type: none"> Public education and awareness on biotechnology and bioscience 6 existing LBD/ Integrated Technology Transfer Centers Rehabilitated 	<ul style="list-style-type: none"> No. of reports No. of rehabilitated centres No. of one acre plots 	LBD and Partner Organizations (FAO/ NACOSTI/ AATF/ ISAAA/ MONSANTO/ PBS)	2 0 1 8 - 2023	GOK/ Donor	5,000	1,000	2,000	1,000	500	500

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							Total	2018/19	2019/20	2020/21	2021/22	2022/23
		<ul style="list-style-type: none"> Field trials and demonstration BT cotton, sorghum and emerging crops carried out 6 million mono-sexed and 4 million ordinary fingerlings of endangered fish species multiplied and restocked in Lake victoria rivers, dams, ponds and water pan. Documentation centers in the 18 Counties digitalized and linked Program up-scaled to all 6 Regional Development Authorities to cover the whole country 	<ul style="list-style-type: none"> No. of fingerlings stocked No. of documentation centres Percentage (%) adoption of program 									
Myandarua Irrigation Project	To improve the quality of life for Nyandarua county residents through sustainable utilization of environmental resources	<ul style="list-style-type: none"> Provision of clean water for human and livestock consumption, Improved land productivity, food security, Improved household income, Renewable energy production. 	<ul style="list-style-type: none"> % Completion rate Ha under irrigation 	TARDA	2 0 1 8 - 2023	GoK Grants	900	100	50	20	0	0
TARDA Regional Resource Centre	To establish adequate office space and financial stability for TARDA	TARDA Resource Centre Complex at Upper Hill	% Completion	TARDA	2 0 1 8 - 2023	GoK Grants	2,000	200	0	0	0	0
Integrated Solar Energy Project	To produce 440MW of electricity to the National Grid and improve land use	Generate 440mw of Renewable energy in seven (7) sites	% increase in revenue from solar	TARDA	2 0 1 8 - 2023	GoK Grants	260					
Climate Change Adaptation	To conserve catchment areas and reduce poverty levels in communities	<ul style="list-style-type: none"> Conserved catchment areas: 14.33 million trees seedlings produced and planted Maintained dam structures Reduced soil erosion Increased forest cover 	<ul style="list-style-type: none"> Ha and Km of catchment conserved No. of completed programmes 	TARDA	2 0 1 8 - 2023	GoK Grants	80					

Project / Program	Objective	Expected Output / Outcome	Indicators	Implementing Agency	Time Frame	Source of funds	Indicative Budget (Ksh. Millions)					
							200	100	100	0	0	0
Kieni – Laikipia Integrated Irrigation Scheme	To enhance food security and livelihood improvement	<ul style="list-style-type: none"> Irrigation infrastructure for 1,100 ha 4,300 households under irrigation 	Ha covered under irrigation	TARDA	2018-2023	GoK	200	100	100	0	0	0
Tharaka Food Security Project	To enhance food security and livelihood improvement	<ul style="list-style-type: none"> Irrigation infrastructure for 680 ha 750 households under irrigation 	Ha covered under irrigation	TARDA	2018-2023	GoK	150	100	50	0	0	0
Grand Total							525,177.9	50,455.9	102,801	113,312	109,428	74,687

ANNEX II: MONITORING AND EVALUATION MATRIX

Environment Sub-sector

Programmes/ Projects	Objectives	Expected Outputs	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Strengthening Environmental Governance	To provide enabling policies, legislation and institutional arrangement.	Enhanced environmental and natural resources governance	No of policies, legislation and regulations developed and implemented	MENR/ NEMA	2018-2022	8	8	8	8	8
Modernization of meteorological services	To enhance provision of meteorological services	National Weather Network Modernized	% of Meteorological services modernized	MENR/ KMD	2018-2022	17	19	20	22	22
Advent weather modification	To promote operational research and real time monitoring of weather parameters	Radar derived weather data	No of Composites of weather derived data system in place	MENR/KMD	2018-2022	10	10	10	10	10
Rehabilitation of Urban Rivers	To rehabilitate and protect riparian areas in urban areas	Riparian areas in urban areas rehabilitated and protected	No. of KM of riparian areas rehabilitated	MENR	2018-2022	300	300	300	300	300
Waste Management and pollution Control	To improve solid waste management in urban and rural areas	Improved solid waste management countrywide	No. of county dumpsites with ten minimum points	MENR/ NEMA	2018-2022	9	9	9	9	11

Natural Resources Sub-sector

Programme/Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Natural Resource Policy and Governance	Strengthen policy, legal and institutional frameworks for Natural resource management	Well governed natural resources sector	No. policies developed	SDNR/ Agencies	2018-2022	1	1	1	1	2
	To establish Wildlife Compensation Insurance Scheme (WCMA, 2013)	Wildlife Compensation Insurance Scheme Established	Wildlife compensation Insurance scheme	SDNR	2018-2022	0	1	0	0	0
	Establish the Wildlife Research and Training Institute	Wildlife Research and Training Institute established	Wildlife Research and Training Institute	SDNR/KWS	2018-2022	0	1	0	0	0

Programme/Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Forest Conservation and Management	To increase forest cover from 7.24% in 2016 to 8% in 2022	Increased forest Cover to 8%	No of Ha under forest cover	KFS	2018 -2022	2.45 M	2.5 Mill	2.65 M	2.75 M.	2.8 M.
Rehabilitation and Protection of Water Towers	To rehabilitate and restore five water towers and other selected areas	Five (5) water towers and other selected areas rehabilitated and restored	No. of hectares rehabilitated	SDNR/KWTA/KFS	2018 -2022	70,000	74,000	76,000	76,000	74,000
Forest Research and Development	To develop forest research technologies for sustainable management of forest and allied natural resources	Nature based enterprises established	No. of nature based enterprises established	SDNR/KFS/KWS	2018 -2022	6	6	6	6	6
Wildlife Conservation and Management	To protect and conserve wildlife resources	Forest and allied technologies developed	No. of technologies developed	KEFRI	2018 -2022	22	24	25	26	28
		Protection and Security of Wildlife, Mapping and Securing Wildlife Migratory Corridors, Reducing Human-Wildlife Conflicts, Modernizing anti-poaching technologies, Enhancing species conservation	Km of fence	KWS	2018 -2022	600	600	600	600	600

Water Sub-sector

Programmes/ Projects	Objectives	Expected Outputs	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Water Resources Management Programme	Conserve and Protect Water Resources	Increased availability of water resources	Total renewable freshwater (TRWR)-per capita (1000 m ³ /yr)	MMI/AMRMA/WSIF	2 0 1 8 - 2022	740	828	927	1038	1,100
Urban water supply	To increase access to safely managed water supply	83% urban water coverage	Proportion (%) of population using safely managed drinking water services	MMI/WSIs	2 0 1 8 - 2022	71	74	77	80	83

Programmes/ Projects	Objectives	Expected Outputs	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Rural Water supply	To increase access to safely managed water supply	70% rural water coverage	Proportion (%) of population using safely managed drinking water services	MMW/WSIs	2 0 1 8 - 2022	54	58	62	66	70
		80% National water coverage				64	68	72	76	80
Provision of Water to Underserved areas including informal settlements	To increase access to safe water and sanitation	Improved access to water and sanitation services for 3,145,300 people	No. of people accessing safe water and sanitation	MMW/WSIF	2 0 1 8 - 2022	528,119	695,239	594,824	619,585	707,500
		Equitable utilization and sharing of benefits from these shared water resources				20.6	-	22.6	-	32.8
Trans boundary Waters Management	Enhance cooperation in Sustainable management and development of shared water resources		Proportion of trans-boundary basin area with an operational arrangement for water cooperation	MMI	2 0 1 8 - 2022					
Sewerage Programme	To increase access to safe sewerage services	40% urban sewerage coverage	Proportion of population using safely managed urban sewerage services	MMW/WSIs	2 0 1 8 - 2022	28	31	34	37	40
	To increase access to national sanitation	80% National sanitation coverage	Proportion of population using safely managed sanitation services	MMW/WSIs	2 0 1 8 - 2022	70	72.5	75	77.5	80

Irrigation Sub-sector

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/2019	2019/20	2020/21	2021/22	2022/23
Irrigation and drainage infrastructure	Expand area under irrigation	Increase area under irrigation by 250,000 Ha	No. of acres	MMI	2018-2022	25,000	150,000	150,000	150,000	150,000
		Reclamation of 50,000ha water logged /flood prone	No. of hectares			2,500	7,5000	10,000	15,000	15,000

Programme/Project	Objectives	Expected Outcome / Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Forest Conservation and Management	To increase forest cover from 7.24% in 2016 to 8% in 2022	Increased forest Cover to 8%	No of Ha under forest cover	KFS	2018 -2022	2.45 M	2.5 Mil	2.65 M	2.75 M.	2.8 M.
Rehabilitation and Protection of Water Towers	To rehabilitate and restore five water towers and other selected areas	Five (5) water towers and other selected areas rehabilitated and restored	No. of hectares rehabilitated	SDNR/KWTA/KFS	2018 -2022	70,000	74,000	76,000	76,000	74,000
Forest Research and Development	To develop forest research technologies for sustainable management of forest and allied natural resources	Nature based enterprises established	No. of nature based enterprises established	SDNR/KFS/KWS	2018 -2022	6	6	6	6	6
Wildlife Conservation and Management	To protect and conserve wildlife resources	Forest and allied technologies developed	No. of technologies developed	KEFRI	2018 -2022	22	24	25	26	28
		Protection and Security of Wildlife, Mapping and Securing Wildlife Migratory Corridors, Reducing Human-Wildlife Conflicts, Modernizing anti-poaching technologies, Enhancing species conservation	Km of fence	KWS	2018 -2022	600	600	600	600	600

Water Sub-sector

Programmes/Projects	Objectives	Expected Outputs	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Water Resources Management Programme	Conserve and Protect Water Resources	Increased availability of water resources	Total renewable freshwater (TRWR)-per capita (1088 m ³ /yr)	MMI/AVRMA/WSTF	2 0 1 8 - 2022	740	828	927	1038	1,100
Urban water supply	To increase access to safely managed water supply	83% urban water coverage	Proportion (%) of population using safely managed drinking water services	MMI/WSSis	2 0 1 8 - 2022	71	74	77	80	83

Programmes/ Projects	Objectives	Expected Outputs	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Advent weather modification	To promote operational research and real time monitoring of weather parameters	Radar derived weather data	No of Components of weather derived data system in place	MENR/KMD	2018-2022	10	10	10	10	10
Rehabilitation of Urban Rivers	To rehabilitate and protect riparian areas in urban areas	Riparian areas in urban areas rehabilitated and protected	No. of Km of riparian areas rehabilitated	MENR	2018-2022	300	300	300	300	300
Waste Management and pollution Control	To improve solid waste management in urban and rural areas	Improved solid waste management countryside	No. of county dumpsites with ten minimum points	MENR/ NEMA	2018-2022	9	9	9	9	11

Integrated Regional Development Sub-sector

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Ewaso Ng'iro South Development Authority (ENSDA)										
Ewaso Ng'iro Leather Factory project	To improve community Livelihoods	Factory with processing capacity of 4000 tons annually	No. of hides and skins processed	ENSDA	2018-2023	Operationalization of factory Establishment of hides and skins collection centers 12 staff No. trained on leather technology -Community capacity building	Construction of administration block 1000 No. of hides and skins processed annually	2000 No. of hides and skins processed annually	3000 No. of hides and skins processed annually	4000 No. of hides and skins processed annually
Integrated Bamboo Commercialization and value addition	To reduce pressure on indigenous forests cover in Mau and Aberdares, To create wealth and employment To generate revenue	Bamboo processing plant for value addition 3 No. Bamboo cottage industries;	No. of seedlings raised & planted	ENSDA	2018-2023	200,000 bamboo seedlings raised and planted in community farms; 100 acres nucleus plantation established	200,000 bamboo planted in community farms; 100% completion rate of the bamboo processing factory	100 Acres of Out growers bamboo farms establishment	200 Acres of Out growers bamboo farms establishment	200 Acres of Out growers bamboo farms establishment

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets							
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23			
						50% completion rate of the bamboo processing factory 100 community groups trained on bamboo farming							
Lower Ewaso Ngiro Multipurpose Dams project	To generate revenue through power generation and improve livelihoods	Hydropower Generation 180 MW; Water for irrigation (4500 ha) and domestic supply	No. of Dams constructed No. of acres conserved No. of Ha developed for irrigation;	ENSDA	2018-2023	100 acres of land conserved PPP framework arrangement	100 acres of land conserved Water supplies infrastructure to 5000 households and 300,000 livestock;	100 acres of land conserved; 1,500 irrigation land under irrigation; Water supplies infrastructure to 5000 households and 300,000 livestock;	3 Dams constructed; 1,500 irrigation land under irrigation; Water supplies infrastructure to 5000 households and 300,000 livestock;	3,000 ha of land developed for irrigation; 1,500 irrigation land under irrigation; Water supplies infrastructure to 5000 households and 300,000 livestock;			
Olkejuado Multipurpose Dam Project	To improve livelihoods through provision of clean water (domestic, & irrigation)	Water reservoir with capacity of 1 million cubic metres Clean water for 50,000 people & 200,000 livestock 1,000 ha irrigable land for improved food security Conservation of 200 ha of the catchment area	No. of people and livestock supplied	ENSDA	2020-2021	-	50,000 people & 200,000 livestock supplied with water	-	-	-			
Olejiangalani Integrated Dams Project	To improve livelihoods through provision of clean water (domestic, & irrigation)	A water reservoir capacity of 500,000 cubic metres Clean water for 20,000 people & 50,000 livestock 1,000 ha irrigable land for improved food security Conservation of 50 ha of the catchment area	No. of Dams constructed No. of acres conserved No. of Ha developed for irrigation;	ENSDA	2018-2023	Construction of 4 of dams with a reservoir capacity of 100,000 cubic meters each	20 ha of land conserved 500 acres under irrigation 500 households supplied with water 20,000 livestock access water	500 acres under irrigation	500 acres under irrigation 500 households supplied with water 100,000 livestock access water	500 acres under irrigation 500 households supplied with water 100,000 livestock access water			

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Ewaso Ng'iro South Natural Resources Development Project	To provide a data / information resource centre to support sustainable development in the region	Data Resource Centre (infrastructure); GIS natural resource data bank; Availability/accessibility information and data for development;	Percentage completion No. of youths trained	ENSDA	2018-2023	Prepare detailed designs for the open data centre 50% construction of the Open Data Centre	100% construction of the Open Data Centre Resource mapping, data collection, acquisition of GIS software and hardware	Equipping data centre Information databank development Training	Data bank establishment Capacity building and training 500 youths	Capacity building and training 1000 youths
Integrated catchment conservation and protection programme	To improve the quality of environment for sustainable development	5000 ha of degraded landscapes (Mau, Suswa-Magadi, Loita and Aberdare ecosystems) rehabilitated; 100 kms of River banks protected (rivers Njoro, Malewa, Ewaso Ng'iro and Mara)	Ha of forest restored; Kms of riparian land protected No. of community members sensitized	ENSDA	2018-2023	1000 ha of rehabilitated; 30 kms of River banks protected 300 Community members sensitized	1000 ha of rehabilitated 30 kms of River banks protected 300 Community members sensitized	1000 ha of rehabilitated 30 kms of River banks protected 300 Community members sensitized	1000 ha of rehabilitated 30 kms of River banks protected 300 Community members sensitized	1000 ha of rehabilitated 30 kms of River banks protected 300 Community members sensitized
Agro processing and Value Addition Project	To increase incomes of farmers through processing to maximize value of horticultural produce	Agro-processing factory Increased acreage under horticultural production	Percentage completion No. of acres put under production	ENSDA	2018-2023	Factory detailed design	50% Construction of factory Community capacity building	100% Construction of factory	1000 acres put under horticultural production Value additions	1000 acres put under horticultural production Value additions
Lake Basin Development Authority (LBDA)										
Integrated Technology Transfer and Facilitation	To develop and transfer Reticulation Aquaculture System (RAS) Technology targeting 16,000 inland fish farmers in Kisumu, Busia, Bungoma, Nandi, Trans-Nzoia, Homabay and Nyamira Counties.	1 RAS Technology centre developed 16,000 inland fish farmers trained 6,000,000 fingerlings produced	No. of Centres No. of farmers trained No. of fingerlings produced	LBDA	2018-2019 2018-2023	1 RAS Technology Centre developed 3,600 fish farmers 1,125,000 fingerlings produced	- 3,600 fish farmers 1,125,000 fingerlings produced	- 3,600 fish farmers 1,250,000 fingerlings produced	- 3,600 fish farmers 1,500,000 fingerlings produced	- 3,600 fish farmers 1,500,000 fingerlings produced

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Magwagwa Multipurpose Dam Project	To develop a concrete faced rock-fill dam with live storage capacity of 445 million cubic metres as well as generate 120 MW and irrigate 13,807 ha of land	1 ESIA report	No. of reports	LBDA	2019-2020	-	1 report	-	-	-
		1 Stakeholder mobilization report	No. of reports		2019-2020	-	1 report	-	-	-
		1 Duly signed implementation contract	No. of contracts		2020-2021	-	-	1 implementation contract	-	-
		5 Percent completion	Percentage completion (%)		2021-2023	-	-	-	2%	5%
		ESIA report	No. of reports	LBDA	2022-2023	-	-	-	-	1 report
Nandi Multipurpose Dam Project	To develop a 63 m high roller compacted earth dam with live storage capacity of 230 million cubic metres as well as generate of 50 MW and irrigate 7,500 ha of land.	Stakeholder mobilization report	No. of reports		2022-2023	-	-	-	-	1 report
		Duly signed implementation contract	No. of contracts		2022-2023	-	-	-	-	1 contract
		5000 ha of degraded land conserved	Hectares of land conserved	LBDA	2019-2023	-	1,000 ha	1,000 ha	1,000 ha	1,000 ha
Integrated Land and Water Ecosystem Studies (Nzola & Lambwe basin)	To conserve 5000 ha of degraded riparian areas and enhance livelihoods of 13,000 households in Lower Nzola and Lower Soudou River Basins.	200 ha irrigated	Ha of irrigated land	LBDA	2019-2022	-	50 ha	100 ha	150 ha	200 ha
		4.2 billion loan plus interest cleared	Amount in Ksh.	LBDA	2018-2021	1,000,000,000	639,000,000	1,000,000,000	-	-
Lake Basin Mill Complex – loan payment	To operate the mill efficiently and generate income for the sustainability of LBDA	3.5 tonnes	Tonnes of rice milled per hour	LBDA	2018-2023	3.5 tonnes	3.5 tonnes	3.5 tonnes	3.5 tonnes	3.5 tonnes
		3,500 tonnes	Tonnes of paddy rice purchased and processed		2018-2023	3,500 tonnes	7,200 tonnes	7,200 tonnes	7,200 tonnes	7,200 tonnes
Improvement of Nyakoe Market	To enhance productivity and food security	100 % Improvement of Market infrastructure	Percentage completion (%)	LBDA	2018-2020	45%	100%	-	-	-

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Magwagwa Multipurpose Dam Project	To develop a concrete faced rock-fill dam with live storage capacity of 445 million cubic metres as well as generate 120 MW and irrigate 13,807 ha of land	1 ESIA report	No. of reports	LBDA	2019-2020	-	1 report	-	-	-
		1 Stakeholder mobilization report	No. of reports		2019-2020	-	1 report	-	-	-
		1 Duly signed implementation contract	No. of contracts		2020-2021	-	-	1 implementation contract	-	-
		5 Percent completion	Percentage completion (%)		2021-2023	-	-	-	2%	5%
		ESIA report	No. of reports	LBDA	2022-2023	-	-	-	-	1 report
Nandi Multipurpose Dam Project	To develop a 63 m high roller compacted earth dam with live storage capacity of 230 million cubic metres as well as generate of 50 MW and irrigate 7,500 ha of land.	Stakeholder mobilization report	No. of reports		2022-2023	-	-	-	-	1 report
		Duly signed implementation contract	No. of contracts		2022-2023	-	-	-	-	1 contract
		5000 ha of degraded land conserved	Hectares of land conserved	LBDA	2019-2023	-	1,000 ha	1,000 ha	1,000 ha	1,000 ha
Integrated Land and Water Ecosystem Studies (Nzola & Lambwe basin)	To conserve 5000 ha of degraded riparian areas and enhance livelihoods of 13,000 households in Lower Nzola and Lower Soudou River Basins.	200 ha irrigated	Ha of irrigated land	LBDA	2019-2022	-	50 ha	100 ha	150 ha	200 ha
		4.2 billion loan plus interest cleared	Amount in Ksh.	LBDA	2018-2021	1,000,000,000	639,000,000	1,000,000,000	-	-
Lake Basin Mill Complex – loan payment	To operate the mill efficiently and generate income for the sustainability of LBDA	3.5 tonnes	Tonnes of rice milled per hour	LBDA	2018-2023	3.5 tonnes	3.5 tonnes	3.5 tonnes	3.5 tonnes	3.5 tonnes
		3,500 tonnes	Tonnes of paddy rice purchased and processed		2018-2023	3,500 tonnes	7,200 tonnes	7,200 tonnes	7,200 tonnes	7,200 tonnes
Improvement of Nyakoe Market	To enhance productivity and food security	100 % Improvement of Market infrastructure	Percentage completion (%)	LBDA	2018-2020	45%	100%	-	-	-

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Muhoroni Agro-industrial Park Project	To develop backward linkages to agricultural suppliers, expanding the possibilities of smallholder producers to access attractive markets that demand high value, high quality and safe agro-food products	1 Agro-industrial park established	Percentage completion	LBDA	2018-2023	-	10%	20%	25%	50%
Migosi and Milimani Housing Development Project in Kisumu County	To ensure decent living standards by constructing affordable housing units in Kisumu County	228 housing units constructed	No. of housing units constructed	LBDA	2018-2023	84 housing units	36 housing units	36 housing units	36 housing units	36 housing units
Coast Development Authority (CDA)										
Lake Challa Water Resources Development	To improve the living standards of the community around lake Challa	Development of water and irrigation infrastructure for provision of water for domestic, livestock and wildlife	M3/yr water supplied Ha. of land under irrigation Ha of land under conservation	CDA	2018-2023	1000 100 100	2000 300 100	3000 500 100	6000 500 100	7000 620 100
Malindi Integrated Social Health Development Programme (Phase I)	To provide socio-economic infrastructure to the rural centres in Malindi district	1 1km road constructed 5 Education facilities constructed 2 health facilities constructed 3 infrastructural facilities constructed	Kms. No of schools constructed No. of health facilities rehabilitated - and constructed No. of infrastructural facilities constructed	CDA, CG	2018-2023	5 2 1 2	6 1 1 2	1		
Integrated Coast Region Master Plan (Resource Mapping and Regional Data Bank Development)	To review ICRM and update the Resource Map and the Regional Data Bank	Review of ICRMP and Regional Data Bank (GIS platform) done	No. of reviewed master plans Updated resource map and data bank	CDA,	2018-2020	1	1	-	-	-

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Kishenyi Multipurpose Dam project	To improve the living standards of the community in Weruigha/ Kishushe area through provision of water for domestic and irrigation	Restored dam water capacity of 39,000m3 through dewatering	No of projects/ programmes promoted and approved	CDA, MMI, NIB	2018-2023	10000	10000	19000	-	-
Integrated Fruit processing	To provide market linkage, create employment and generate income for fruit farmers	Pulp processing line to serve 5000 fruit farmers established	Factory commissioned	CDA, CG	2018-2021	1	1	-	-	-
Boji irrigation	To contribute to food security, employment creation, increased income earnings among the community	Irrigation infrastructure development for 160 ha	No of Ha under irrigation	CDA, CG, SDA, NIB	2018-2022	50	60	50	-	-
Wananchi Cottages	To provide modern and state of art conference facility	Built and equip 1 Modern conference facility with 40 rooms	No. of conference facilities built No. of rooms	CDA	2018-2021	-	1	1	-	-
Promotion of Sustainable Minerals exploration and processing	To provide market linkage for the gem stones and cheaper building materials	minerals explored and promoted	No. of types of minerals promoted	CDA, Min. mining, County government	2018-2023	1	2	3	3	3
Tana and Athi Rivers Development (TARDA)										
High Grand Falls Multipurpose Dam	Sustainable utilization of environmental resources, improve Food Security and income generation	5.4 bn M ³ Water storage; Hydro Power generation of 700 MW; Up to 180,000 ha irrigation potential; 20000 ha land conserved;	% Completion rate	TARDA	2018-2023	Sensitize communities to be affected by the programme Establish resettlement programme	Resettlement of project affected persons	20%	50%	75%

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Tana Delta Sugar Irrigation Project (TDIP)	Sustainable utilization of environmental resources, food security, infrastructure development and revenue generation	16,000ha nucleus farm; 4,000ha out growers component; Sugar mill with cane crushing capacity of 10,000 ton/day; 35 MW power co-generator; White sugar at least 100,000 tons per year;	No. of Ha under production	TARDA	2018-2023	Identify potential investor and finalize PPP process	Undertake stakeholder 3 no. sensitization forums Review project designs and develop definite implementation plan	Preliminary works at 100% target and water intake and delivery works at 100% ; Develop of on-farm structures at 100% target;	4000 Ha nucleus farm and under sugar production;	8000 Ha under sugar production (nucleus farm) and 1000 ha outgrower farm;
Munyu Multipurpose Dam	To enhance quality of life through environmental protection, food security and revenue generation	Feasibility Study Report; Impound 575 million M3 of live storage at Munyu Dam and Fourteen falls Hydro-Power Station – 4yrs; Hydro Power generation of 40 Mw ; Develop 13,000 ha irrigation at Greater Kibwezi Irrigation – 8yrs;	% completion rate	TARDA	2018-2023	Finalize PPP process and complete project feasibility and detailed designs	Undertake stakeholder 3 no. sensitization forums -implement Resettlement Plan	Undertake dam construction 20%	Undertake dam construction 20% to 60%	Undertake dam construction 60% to 100%
Kieni Integrated Irrigation Project	To improve the quality of life for Nyet county residents through sustainable utilization of environmental resources	Construction of seven (7) multipurpose dams; Enhanced food security through irrigation of a possible 13,000ha; Provision of clean water for human and livestock consumption to 52,000 households;	No. of dams constructed	TARDA	2018-2023	Undertake dam construction of two dams (Narumoru and Karemenu) at 10%	Construction works at 60 %; Undertake feasibility and designs for additional 2No. Dams;	Construction at 100% works; Undertake feasibility and designs for additional 3No. Dams;	Open 1000 Ha under irrigation; 12,000 households provided with water for human and livestock use;	Open additional 1300 Ha under irrigation; 15,000 households supplied with water for human and livestock use
Tana Delta Rice Irrigation Project (TDIP)	To enhance quality of life for the residents of Tana Delta through sustainable utilization of environmental resources, food security, infrastructure development and revenue generation	Increased area under rice to 12000 ha	No. of Ha under rice production	TARDA	10 yrs	Rice production in 2000 Ha	Rice production in 4000 Ha; Canal maintenance and desiltation 13 km;	Rice production in 8000 Ha ; Canal maintenance and desiltation 13 km;	Rice production in 10000 Ha; Canal maintenance and desiltation 13 km;	Rice production in 12000 Ha; Canal maintenance and desiltation 13 km;

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Murang'a Food Security Programme	To enhance food security through provision of clean water for human and livestock for consumption improving livelihood	Develop 5,000 ha for irrigation; Provision of clean water for human and livestock consumption; Improved livelihood;	Ha under irrigation	TARDA	2018-2023	Develop irrigation water infrastructure upto 100% and develop irrigation infrastructure for 1000Ha	Open up 1000 Ha under irrigated farming and increase the area under irrigation infrastructure from 1000Ha to 2000 Ha	Farm 2000 Ha and increase area under irrigation infrastructure to 3000 Ha	Farm 3000 Ha and increase area under irrigation infrastructure to 4000 Ha	Farm 4000 Ha and increase area under irrigation infrastructure to 5000 Ha
Ecotourism Development (Masvinga Dam Resort)	Resource benefit sharing with communities, Improved revenues for tourism sector in TARDA region & job creation	Conserve Environmental Resources; Establish a Viable Eco-tourism Enterprise Alleviate Poverty	No. of Ecotourism enterprises identified and implemented; % increase in revenue generation	TARDA	2018-2023	-Masvinga Airstrip commercialization -increase bed capacity of VIP rooms by 50%	Increase revenue of Masvinga Dam Resort by 20% through establishment of additional 4 No. executive rooms	Increase revenue of Masvinga Dam Resort from 20% to 25% through establishment of additional support facilities (kitchen, conference hall and health facility)	Increase revenue of Masvinga Dam Resort from 30% to 50% through establishment of additional 4 No. holiday homes	Increase revenue of Masvinga Dam Resort from 30% to 50% through establishment of additional 4 No. holiday homes
Integrated Regional Development Master plan	To review the integrated TARDA master plan and update resource map	Written statement of the Plan; Maps and Graphics; Photographs Technical reports Policies and Strategies; Outline of projects to be taken; Implementation framework; Governance Institutions;	% Completion rate	TARDA	2018-2023	30% complete (Literature review and Data acquisition)	40% complete (Identification of target programmes and synchronization with county CIDPs)	60% complete (Resource studies and Public participation)	80% complete (Review of Resource Studies and Spatial data acquisition)	100% complete and launching
Capacity Building and Technology transfer.	To impact knowledge, skills and experience to the communities so as to strengthen and maintain their capabilities	Maximize on community production; Improved farming methods; Employment creation;	Number of farmers and staff trained	TARDA	2018-2023	200 trained on enterprise and value addition	200 trained on enterprise and value addition	200 trained on enterprise and value addition	20 ToT facilitated to continue extension work	50 ToT facilitated to continue extension work

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
Email Livestock Multiplication	To improve community livelihood and enhance land productivity	To improve livelihoods; Food security; Provision of clean water; Technology Transfer; Improve livestock breeds; Income generation;	No. of technology interventions; No. of beneficiaries; % increase in revenue generated; Improve livestock breeds; Income generation;	TARDA	2018-2023	Disseminate livestock technologies to 50 farmers - increase revenue generated from farm by 20%	Disseminate livestock technologies to additional 50 farmers - increase revenue generated from farm by additional 10%	Disseminate livestock technologies to additional 50 farmers - increase revenue generated from farm by additional 10%	Disseminate livestock technologies to additional 50 farmers - increase revenue generated from farm by additional 10%	Disseminate livestock technologies to additional 50 farmers - increase revenue generated from farm by additional 10%
Kibwezi Irrigation Project	To improve the quality of life for Makueni county residents through sustainable utilization of environmental resources	To improve livelihoods; Food security, Revenue generation;	% increase in revenue generated; Area under irrigation	TARDA	2018-2023	Develop water reservoir (200 m3)	Develop farm infrastructure and open 30 Ha under irrigation;	Increase from 30 Ha to 60 Ha; Increase revenue generated by 20%;	Increase from 60 Ha to 80 Ha; Increase revenue generated by 40%;	Increase from 80 Ha to 100 Ha; Increase revenue generated by 60%
Masinga Irrigation Project	To improve the quality of life for Machakos county residents through sustainable utilization of environmental resources	To improve livelihoods; Food security, Revenue generation;	Volumes of farm produce; Area(ha) under irrigation;	TARDA	2018-2023	Develop irrigation infrastructure for 50Ha	Develop farm structures and put 50 Ha under production	50 Ha under production	50 Ha under production	50 Ha under production
Kiambere Irrigation Project	To improve the quality of life for Embu county residents through sustainable utilization of environmental resources	To improve livelihoods; Food security; Income generation;	Volumes of farm produce; Area(ha) under irrigation;	TARDA	2018-2023	Develop farm infrastructure to irrigate 150 Ha	50 Ha under production	100 Ha under production	150 Ha under production	150Ha under production
Nyandarua Irrigation Project	To improve the quality of life for Nyandarua county residents through sustainable utilization of environmental resources	Provision of clean water for human and livestock consumption; Improved land productivity; Food security; Improved household income; Renewable energy production;	% Completion rate; Ha under irrigation	TARDA	2018-2023	Develop irrigation infrastructure for 500Ha	100 Ha under production and 250 beneficiary households	200 Ha under production and 500 beneficiary households	350 Ha under production and 800 beneficiary households	500 Ha under production and 1250 beneficiary households

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
TARDA Regional Resource Centre	To establish adequate office space and financial stability for TARDA	TARDA Resource Centre Complex at Upper Hill	% Completion	TARDA	2018-2023	Construction of TARDA resource centre at 30% completion	Construction of TARDA resource centre at 70% completion	Construction of TARDA resource centre at 100% completion	Establishment of data resource centre	85 % occupancy
Integrated Solar Energy Project	To produce 440MW of electricity to the National Grid and improve land use	Generate 440mw of Renewable energy in seven (7) sites	% increase in revenue from solar	TARDA	2018-2023	Finalize PPP arrangements and obtain EOI from Min of Energy	Undertake detailed feasibility study and designs and negotiate for power purchase agreements (PPA)	40MW installation developed	80MW installation developed	120MW installation developed
Climate Change Adaptation	To conserve catchment areas and reduce poverty levels in communities	Conserved catchment areas: 2 million trees seedlings produced and planted; Maintained dam structures; Reduced soil erosion; Increased forest cover	Ha and Km of catchment conserved; No. of completed programmes;	TARDA	2018-2023	Produce, plant and nurture 300,000 seedlings	Produce, plant and nurture 300,000 seedlings	Produce, plant and nurture 300,000 seedlings	Produce, plant and nurture 300,000 seedlings	Produce, plant and nurture 300,000 seedlings
Kieni-Lakipia Integrated Irrigation Scheme	To enhance food security and livelihood improvement	Irrigation infrastructure for 1,100 ha; 4,300 household beneficiaries	Ha covered under irrigation	TARDA	2018-2023	Develop water storage and irrigation infrastructure for 500Ha	Develop water storage and irrigation infrastructure for additional 600Ha	1100Ha under community farming benefiting 4300 households	1100 Ha under community farming benefiting 4300 households	1100 Ha under community farming benefiting 4300 households
Tharaka Food Security Project	To enhance food security and livelihood improvement	Irrigation infrastructure for 680 ha; 750 households under irrigation;	Ha covered under irrigation	TARDA	2018-2023	Develop water storage and irrigation infrastructure for 200Ha	Develop water storage and irrigation infrastructure for additional 200Ha	Develop water storage and irrigation infrastructure for additional 200Ha	Develop water storage and irrigation infrastructure for additional 80Ha	680 Ha under community farming benefiting 650 households
Kerio Valley Development Authority (KVDA)										
Aror Multi-Purpose Dam Development Project	To construct a dam to store water for generation of 60MW of HEP; To expand land under irrigation by an additional 2,500ha to support food security;	96.7m high dam with a reservoir capacity of 64 million cubic meters constructed; Clean water for domestic use to serve 50,000 households & 80,000 livestock provided; 2,500 ha irrigable land	No. of dams constructed; No. of MWs of HEP generated; Acres of land irrigated; .No. of households	KVDA	2018-2023	Ground breaking; Acquisition of land for resettlement; Detailed designs done;	Resettlement and compensation of PAs; Access roads developed;	1Dam constructed; Hydro power house developed; 1,000 ha irrigation land under irrigation ;	1,500 ha irrigation land under irrigation; Water supplies infrastructure to 50,000 households	2,500 ha of land developed for irrigation; Water supplies infrastructure developed for 50,000 households

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/19	2019/20	2020/21	2021/22	2022/23
	To provide water for both domestic and livestock consumption; To undertake conservation programmes;	developed food production; 60MW of HEP generated 2 million assorted trees planted for conservation and management of 185 km ² of the Cherangany catchment area;	and livestock provided with water; Acreage of conserved area;			15No.stakeholder meetings; Project area mapped; PAP's identified;	Water supplies infrastructure to 50000 households and 80,000 livestock;	and 80,000 livestock; HEP transmission powerline;	households and 80,000 livestock ; 60MW of HEP generated; 185km ² of forest land conserved;	
Kimwarer Multi-Purpose Dam Development Project	To construct a dam to store water for generation of 20MW of HEP; To expand land under irrigation by an additional 2,500ha to support food security; To provide water for both domestic and livestock consumption; To undertake conservation programmes;	22.3 million m ³ reservoir capacity constructed; Clean water for 30,000 households & 80,000 livestock stored ; 2,500 ha of land irrigated for food productivity; 20MW of HEP generated; Conserve and manage 136 km ² of the catchment area by planting assorted trees annually to support conservation of Cherangany watershed;	.No. of dams constructed; MWs of HEP; Acres of land irrigated; No. of households and livestock provided with water; Acreage of forest conserved;	KVDA	2018-2023	Ground breaking Acquisition of land for resettlement Detailed designs done 20No.stakeholder meetings Project area mapped PAP's identified	1Dam constructed; Hydro power house developed; 1,000 ha irrigation land under development Water supplies infrastructure developed for 30,000 households and 80,000 livestock;	1,000 ha irrigation land under development; Water supplies infrastructure developed for 30,000 households and 80,000 livestock; HEP transmission powerline;	2,000 ha of land developed for irrigation; Water supplies infrastructure developed for 30,000 households and 80,000 livestock; 20MW of HEP generated; 136km ² of forest land conserved	
Lower Turkwel Irrigation Project	To develop irrigation infrastructure for 35,000 ha of land for sugarcane production & food security; To establish a sugar cane factory for value addition;	35,000 ha developed and planted; with sugarcane. 1.46 million tons of cane to be produced annually; Sugarcane factory developed for value addition; 142,000 tons of sugar produced annually; 500 tons of food crops produced by farmers;	Acres of land; Tons of sugar	KVDA	2018-2023	Resource mobilization for the project	Ground breaking Construction of irrigation infrastructure begins;	20,000ha of irrigation infrastructure developed;	30,000ha of irrigation infrastructure developed;	

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Cherangany Conservation	To protect, rehabilitate and Cherangany water shed.	114,416.2 ha of Cherangany Forest Ecosystem conserved through planting of 2 million tree seedlings; Riverbank protected, soil and water conservation activities undertaken; Farmers sensitized on climate change adaptation and mitigation; Livelihood improvement and income generation activities promoted;	acreage forest cover; Km of river bank protected; No. of farmers trained;	KVDA	2018-2023	500 acres of land conserved; 6. kms of River banks protected; 1000No. of community members sensitized;	500 acres of land conserved ; 10km of River banks protected; 2000No. of community members sensitized;	1000 acres of forest conserved% ; 15km of kms of River banks protected; 4000No. of community members sensitized;	1500 acres of forest land conserved; 20. of kms of River banks protected; 5000No. of community members sensitized;	5,000 acres of forest land conserved; 30 of kms of River banks protected; 6000No. of community members sensitized
Ewaso Ng'iro North Development Authority (ENNDA)										
ENNDA Integrated Camel Development Programme	To improve livelihoods of residents in the Northern Kenya.	A camel milk processing factory with a 2 million liters annual processing capacity completed and functioning	One Factory completed and functioning	ENNDA	2018-2023	A camel milk processing plant constructed	The camel milk processing plant equipped.	500,000 liters of camel milk processed	1 million liters of camel milk processed annually	2 million liters of camel milk processed annually
Chalbi Desert Integrated Development Programme	To harness the wind resources in Chalbi Desert and its environs in Marsabit county	1,200MW of wind power generated and connected to the national grid.	MW generated	ENNDA	2018-2023	Completion of a full feasibility study and technical designs.	Engagement of a transaction advisor	Engagement of PPP investors	100MW generated	200MW generated.
Ewaso Ng'iro North Integrated Development Programme	To construct a multi-purpose dam along the Ewaso Ng'iro North River to regulate river, flood control and power generation (40MW)	A large multi-purpose dam along the Ewaso Ng'iro North River	Percentage completion	ENNDA	2018-2023	Completion of a full feasibility study and technical designs.	Mobilization of financing	10% dam construction	50% dam construction	100% dam construction
Gum Arabic and Resins Integrated Development Programme	To improve the living standards of the community Through use of natural resources	A 4 line factory with an annual processing capacity of 500 tonnes of Gum Arabic and Resins completed and functioning	Tonnes processed	ENNDA	2018-2023	The processing plant constructed and two processing lines equipped	Equipping of factory offices; Procurement of delivery, distribution trucks and factory vehicles; Equipping of the additional two processing lines;	8 collection centres established; 100 tons of Gum Resins processed;	500 tons of Gum Arabic and Resins processed	500 tons of Gum Arabic and Resins processed

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
Ewaso Ng'iro North Catchment and Riparian Conservation and Rehabilitation Programme	To restore and rehabilitate 5,000 ha of degraded areas. Ewaso Ng'iro North River Catchment and riparian areas and mitigate against impacts of climatic change on catchment areas and its effects to the population in the basin.	5000 Ha of forest restored; 50 Kms of riparian land protected 2.5 Million tree seedlings planted	Ha of forest restored; Kms of riparian land protected No of tree seedlings planted	ENNDA	2018-2023	50 tons of Gum Resins processed; 1000 ha of rehabilitated 10 kms of River banks protected 500,000 trees seedlings planted	1000 ha of rehabilitated 10 kms of River banks protected 500,000 trees seedlings planted	1000 ha of rehabilitated 10 kms of River banks protected 500,000 trees seedlings planted	1000 ha of rehabilitated 10 kms of River banks protected 500,000 trees seedlings planted	1000 ha of rehabilitated 10 kms of River banks protected 500,000 trees seedlings planted
ENNDA Integrated Water, Food Security and Livelihoods Development Programme	To improve the livelihoods of the youth and women in the basin through harvesting rainwater for irrigation and training in dry land agriculture.	5,000 acres of small holder irrigation farms established; 2,000 small water harvesting and storage structures developed; 20,000 selected community members esp. women and youth trained on rainwater harvesting and dry land farming.;	No. of acres under small holder irrigation ; No. of small water harvesting and storage structures developed; No. of selected community members esp. women and youth trained on rainwater harvesting and dry land farming. ;	ENNDA	2018-2023	1,000 acres of small holder irrigation farms established; 400small water harvesting and storage structures developed; 4,000 selected community members esp. women and youth trained on rainwater harvesting and dry land farming;	1,000 acres of small holder irrigation farms established; 400 small water harvesting and storage structures developed; 4,000 selected community members esp. women and youth trained on rainwater harvesting and dry land farming;	1,000 acres of small holder irrigation farms established; 400 small water harvesting and storage structures developed; 4,000 selected community members esp. women and youth trained on rainwater harvesting and dry land farming;	1,000 acres of small holder irrigation farms established; 400 small water harvesting and storage structures developed; 4,000 selected community members esp. women and youth trained on rainwater harvesting and dry land farming;	1,000 acres of small holder irrigation farms established; 400 small water harvesting and storage structures developed; 4,000 selected community members esp. women and youth trained on rainwater harvesting and dry land farming;
Water Harvesting and Storage Programme	To improve sustainable access to water of good quality and quantity for the poor through development of water resources.	500 water points (Dams, Boreholes, water pans and roof/rock catchments) rehabilitated and developed	No. of water points (Dams, Boreholes, water pans and roof/rock catchments) rehabilitated and developed	ENNDA	2018-2023	100 water points (Dams, Boreholes, water pans and roof/rock catchments) rehabilitated and developed	100 water points (Dams, Boreholes, water pans and roof/rock catchments) rehabilitated and developed	100 water points (Dams, Boreholes, water pans and roof/rock catchments) rehabilitated and developed	100 water points (Dams, Boreholes, water pans and roof/rock catchments) rehabilitated and developed	100 water points (Dams, Boreholes, water pans and roof/rock catchments) rehabilitated and developed

Programme/ Project	Objectives	Expected Outcome/Output	Indicators	Implementing Agency	Time Frame	Yearly Targets				
						2018/ 19	2019/ 20	2020/ 21	2021/22	2022/ 23
ENNDA Northern Kenya Integrated Central Meat Processing Factory	To improve the living standards of the communities in the Northern Kenya through procurement and value addition of livestock in the region and spur other development in the region as well and provide a market for the pastoralists	A meat Processing factory: With a capacity of daily capacity of one thousand (1,000) head shoats, five hundred (500) head of cattle and two hundred (200) head of camels	% completion	ENNDA	2018-2023	5% Complete	10% Complete	50% Complete	70% Complete	100% Complete
ENNDA Regional Data and Resource Centre Project	To promote the development of the basin through provision of reliable data and information for better decision making and planning.	Data Resource Centre (infrastructure); GIS natural resource data bank; Availability/accessible information and data for development;	Constructed data Centre; A GIS lab in place;	ENNDA	2018-2023	Prepare detailed designs for the open data centre 50% construction of the Open Data Centre	100% construction of the Open Data Centre; Resource mapping, data collection, acquisition of GIS software and hardware;	Equipping data centre ; Information databank development Training ;	Data bank establishment; Capacity building and training 500 youths;	Capacity building and training 1000 youths;
ENNDA Bricks and Tiles Production Project	To promote development of cheap affordable housing	Establishment of a heavy clay products processing plant; Production and sale of heavy clay building materials;	A heavy clay products processing plant completed;	ENNDA	2018-2023	Feasibility study technical designs and business plan completed; Acquisition of land for factory and soil quarry sites;	A heavy clay products processing plant completed and equipped;	Production and sale of heavy clay building materials	Production and sale of heavy clay building materials	Production and sale of heavy clay building materials