MINISTRY OF ENVIRONMENT, CLIMATE CHANGE & FORESTRY

STATE DEPARTMENT FOR FORESTRY

Kenya Watershed Services Improvement Project (KEWASIP)

(P178850)

Draft

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

March 2025

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ABBREVIATIONS/ACRONYMS

ASAL	Arid and Semi-Arid Land
BETA	Bottom-Up Economic Transformation Agenda
CALM	Climate Action through Landscape Management PforR
CBD	Convention on Biological Diversity
CCDR	Country Climate and Development Report
CEC	County Environment Committee
CFA	Community Forest Association
CIF	Climate Investment Funds
CoG	Council of Governors
CPCU	County Project Coordination Unit
CPSAC	County Project Steering and Advisory Committee
CRI	Climate Resilience Indicator
CSA	Climate Smart Agriculture
DRSRS	Directorate of Remote Surveys and Resource Sensing
DOSHS	Directorate of Occupational Safety and Health Services
EHSGs	Environmental, Health, and Safety Guidelines
EIA	Environment Impact Assessment
EMCA	Environmental Management and Coordination Act
ESF	Environment and Social Framework
ESIA	Environment and Social Impact Assessment
ESMP	Environment and Social Management Plan
ESSs	Environment and Social Standards
FAO	Food and Agriculture Organization
FCMA	Forest Conservation and Management Act
FFS	Farmer Field Schools
FLLOCA	Financing Locally Led Climate Action
GEF	Global Environment Facility
GHG	Greenhouse Gas
GoK	Government of Kenya
GRS	Grievance Redress Service
Ha	Hectare
ICT	Information and Communication Technology
IDA	International Development Association
IEMP	Integrated Ecosystem Management Plans

IFAD	International Fund for Agricultural Development
IP	Indigenous People
IPF	Investment Project Financing
IWC	Integrated Watershed Committees
IWUA	Irrigation Water Users Associations
KAPSLMP	Kenya Agricultural Productivity and Sustainable Landscape Management Project
KCSAP	Kenya Climate-Smart Agriculture Project
KEFRI	Kenya Forestry Research Institute
KEWASIP	Kenya Watershed Services Improvement Project
KFS	Kenya Forest Service
Ksh	Kenyan Shilling
KWS	Kenya Wildlife Service
KWSCRP	Kenya Water Security and Climate Resilience Project
KWTA	Kenya Water Towers Agency
MoECCF	Ministry of Environment, Climate Change and Forestry
M&E	Monitoring and Evaluation
MECCF	Ministry of Environment, Climate Change and Forestry
MoA	Ministry of Agriculture
MRV	Measurement, Reporting, And Verification
MTP	Medium-Term Plan
NBEs	Nature-Based Enterprises
NCCAP	National Climate Change Action Plan
NDC	Nationally Determined Contributions
NECC	National Environmental Complaints Committee
NEMA	National Environment Management Authority
NET	National Environment Tribunal
NGEC	National Gender and Equality Commission
NLERS	National Landscape and Ecosystem Restoration Programme Strategy 2023-2032
NMK	National Museums of Kenya
NPC	Nature, People, and Climate
NPCU	National Project Coordination Unit
NPSC	National Project Steering Committee
NTAC	National Technical Advisory Committee
OESRC	Operations Environmental and Social Review Committee
OHS	Occupational Health and Safety

PAD	Project Appraisal Document
PCE	Private Capital Enabled
PCM	Private Capital Mobilization
PCRA	Participatory Climate Risk Assessments
PDO	Project Development Objective
PES	Payment for Ecosystem Services
PF	Process Framework
PFM	Public Finance Management
PFMP	Participatory Forest Management Plan
PPP	Public-Private Partnership
REDD	Reducing Emissions from Deforestation and Forest Degradation
RMP	Resource Management Plan
SCMP	Sub-Catchment Management Plan
SDA	State Department for Agriculture
SDECC	State Department for Environment and Climate Change
SDF	State Department for Forestry
SDI	State Department for Irrigation
SDW	State Department for Wildlife
SDWS	State Department for Water and Sanitation
SEA/SH	Sexual Exploitation and Abuse/Sexual Harassment
SESA	Strategic Environmental and Social Assessment
SFM	Sustainable Forest Management
SLM	Sustainable Land Management
SLWM	Sustainable Land and Water Management
THS-UCP	Transforming Health Systems for Universal Care Project
ToR	Terms of Reference
VMG	Vulnerable and Marginalized Groups
WB	World Bank
WCCPC	Water Catchment Conservation and Protection Committee
WIBA	Work Injury Benefit Act
WMP	Watershed Management Plans
WRA	Water Resources Authority
WRUA	Water Resource Users Association

EXECUTIVE SUMMARY

The World Bank will be supporting the State Department for Forestry in the Ministry of Environment, Climate Change, and Forestry (MECCF) in implementing Kenya Watershed Services Improvement Project (KEWASIP, Project). The objective of the project is to improve sustainable watershed and landscape management for livelihoods and conservation in 5 landscapes (project areas) namely; Marsabit, Marmanet, Nyambene, Chyullu Hills, and Shimba Hills. To further refine the project scope into manageable and ecologically relevant units, ninety (90) hydrosheds within these landscapes are targeted for project interventions. These hydrosheds are in Baringo, Marsabit, Laikipia, Isiolo, Samburu, Meru, Kitui, Tharaka-Nithi, Tana River, Garissa, Makueni, and Kwale counties. Later micro-catchments within selected hydrosheds will be prioritized to ensure local level interventions. The State Department for Forestry (SDF) will oversee and coordinate other state agencies in implementing the Project activities. Specific subproject activities as well as their locations are not known at this stage, because the project is still under preparation. However, subproject activities and locations will be known before project effectiveness.

This Environmental and Social Management Framework (ESMF) has been prepared to identify the potential environmental and social risks and impacts of proposed Project activities and propose suitable mitigation measures to manage these risks and impacts. It maps out the Kenyan policies, laws and regulations and World Bank Group (WBG) policies applicable to the Project, and describes the principles, approaches, implementation arrangements, and environmental and social mitigation measures to be followed.

The potential environmental and social risks for project activities are identified as:

- **Environmental risks and impacts**: Loss of vegetation during construction and renovation of knowledge hubs, soil and water conservation interventions, and rehabilitation of varied infrastructure; Increased risk of soil erosion and sedimentation of during construction of knowledge hubs, soil and water conservation interventions, and rehabilitation of varied infrastructure; Generation of hazardous waste and e-waste during construction, operation and maintenance activities. Electronic wastes, for example, nickel-cadmium batteries, broken solar panels, faulty or end-of-life ICT equipment, etc. The operation of backup generators and service vehicles may also result in the generation of used tires, waste oils, and used filters; Increased air pollution due to vehicular movements, and the use of fire suppression systems. Fire suppression equipment may contain refrigerants (potential ozone-depleting substances); Increased noise pollution and excessive vibration near sensitive receptors from machinery and transportation of materials; Wildlife habitats disturbance occasioned by afforestation efforts especially in areas where species have adapted to the degraded state of the land; and Reduced biodiversity due to introduction of tree species unsuitable for the local ecosystem (e.g., non-native species).
- **Social risks and impacts**: Disruption of local water flows could impact downstream users and aquatic ecosystems due to water management activities in vulnerable watersheds. Again, restoration of degraded riparian zones, wetlands, and the rehabilitation of water harvesting structures could have varying effects on water flow and availability; Risks of non-compliance with labour laws and requirements by the project and contractors leading to poor labour and working conditions; Discrimination and exclusion leading to unequal access to employment in local communities, based on gender, age, disability, status as Indigenous peoples, rural and urban areas; risk of social tenson due to perceived exclusion from project benefits; economic displacement specifically arising from restrictions of access to the water towers. Data cybersecurity risks due to remote operation of varied ICT equipment; Gender-based violence (GBV), including sexual exploitation and abuse and sexual harassment (SEA/SH) for women and girls within communities and construction sites; Inadequate stakeholder engagement

leading to poor management of expectations by local communities; Poor management of grievances due to inadequate grievance redress mechanisms; Increased disease transmission e.g., HIV/AIDS and Sexually Transmitted Infections (STIs) and other communicable diseases, etc. transmission due to the influx of workers; Risk of child and forced labour due to use of community workers during project implementation; Loss of access to productive assets during rehabilitation of wetlands and degraded areas in forests; Negative impacts on cultural heritage/ archaeological resources; Occupational health and safety risks e.g., over-exertion, slips and falls, work at heights, Struck by objects, Moving Machinery, Dust, Lone workers, etc.; and Increased exposure to safety hazards for local communities due to civil works e.g., General Site Hazards, Community exposure to health issues, Traffic and road safety, Management and safety of hazardous materials, Emergency preparedness and response, etc. There is a risk of wildlife attacks e.g., snake bites, etc. trips and falls, during tree planting in forests.

A Climate and Disaster Risk Screening (CDRS) indicated that the Project has climate co-benefits: (i) right kind of capacity building measures could increase preparedness and longer-term resilience and reduced the risks. For example, in the Water sector, policies and programs that facilitate diversified agricultural production systems may help reduce risks; while lack of appropriate Water sector policies such as pricing and subsidy policies may aggravate the risks; and (ii) vulnerable groups, namely women, migrants and displaced populations may be particularly affected by climate and disaster risks. Soft components have been designed to help alleviate the risks to women from climate and geophysical hazards.

These environmental and social (E&S) risks and impacts will be managed and mitigated through the application of Exclusion Lists, Environmental and Social Screening Form (ESSF), preparation and implementation of Environmental and Social Management Plan (ESMP) and/or Environmental and Social Impact Assessment (ESIA), Livelihood Restoration Plan (LRP) – as necessary, Occupational Health and Safety Management Plans (OHSMP), Stakeholder Engagement Plan (SEP), Labour Management Procedures (LMP), Indigenous People Plans (IPPs)/Vulnerable and Marginalized Plans (VMG Plans) and Chance Finds Procedures. These E&S instruments will be prepared during the project planning phase (before project effectiveness) and will be duly approved by the Bank before the project implementation phase as required by the Environmental and Social Commitment Plan (ESCP).

Implementation of this ESMF will be led by SDF National Project Coordination Unit (NPCU) at the national level. It is expected that the NPCU will coordinate with County Project Coordination Units (CPCUs) at the county level to support the E&S screenings process and proposed mitigation measures. Contractors, where applicable, are responsible for adhering to E&S assessment instruments such as ESMPs/ESIA/ARAP that may be required because of E&S screening process.

Comprehensive training programs will be provided by the SDF, utilizing a cascading model to ensure all key stakeholders, including staff, beneficiary institutions, E&S focal persons, contractors and NEMA officers, are equipped to manage anticipated E&S risks and impacts.

The SDF NPCU will be responsible for monitoring the overall implementation of this ESMF. Monitoring methods will include regular site visits, monthly written reports from field staff, and mobile applications for real-time updates. Third party monitoring firms may be involved to conduct on-the-ground monitoring and report their findings to the NPCU. Additionally, NPCU is required to carry out mid-term E&S compliance audit of the Project, three years after effectiveness, and closeout E&S compliance audit, three months to Project closure. Routine monitoring will be conducted monthly during the project implementation phase. Community-Based Organizations (CBOs) may also be trained and engaged in monitoring E&S performance of restoration and livelihood sub-projects, at the

community level, during implementation. The NPCU will compile these reports and submit them quarterly to the World Bank to ensure compliance with E&S standards.

The estimated budget for ESMF implementation is US$1,000,000.00 and covers training, monitoring, preparation of E&S instruments, implementation of mitigation and management measures, and other related activities, ensuring compliance with national laws and World Bank standards throughout the project's lifecycle.

A separate **Stakeholder Engagement Plan** (SEP) has been prepared for the Project, based on the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement. See separate SEP.

A Project Grievance Mechanism (GM) has been developed as part of the SEP. The GM will receive and facilitate resolution of concerns and grievances in relation to the Project, promptly and effectively, in a transparent manner that is culturally appropriate and readily accessible to all Project-affected parties, at no cost and without retribution, including concerns and grievances filed anonymously, in a manner consistent with ESS10. Moreover, the GM shall be equipped to receive, register, and facilitate the resolution of Sexual Exploitation and Abuse/ Sexual Harassment (SEA/SH) complaints, including through the referral of survivors to relevant gender-based violence (GBV) service providers, all in a safe, confidential, and survivor-centered manner.

1 INTRODUCTION

This Environmental and Social Management Framework (ESMF) is developed to support the environmental and social due diligence provisions for activities financed by the World Bank in the Kenya Watershed Services Improvement Project (KEWASIP, Project). The project will improve sustainable watershed and landscape management for livelihoods and conservation in 5 landscapes (project areas) namely; Marsabit, Marmanet, Nyambene, Chyullu Hills, and Shimba Hills. To further refine the project scope into manageable and ecologically relevant units, ninety (90) hydrosheds within these landscapes are targeted for project interventions. These hydrosheds are in Baringo, Marsabit, Laikipia, Isiolo, Samburu, Meru, Kitui, Tharaka-Nithi, Tana River, Garissa, Makueni, and Kwale counties. Later micro-catchments within selected hydrosheds will be prioritized to ensure local level interventions. The State Department for Forestry will oversee and coordinate other state agencies in implementing the Project activities.

This ESMF applies the World Bank's Environmental and Social Framework (ESF) as well as the applicable policies, laws and regulations of Kenya. The objective of the ESMF is to assess and mitigate potential negative environmental and social risks and impacts of the Project consistent with the World Bank's applicable Environmental and Social Standards (ESSs) of the ESF, and national requirements. More specifically, the ESMF aims to (a) assess the potential environmental and social risks and impacts of the proposed Project and propose mitigation measures; (b) establish procedures for the environmental and social screening, review, approval, and implementation of activities; (c) specify appropriate roles and responsibilities, and outline the necessary reporting procedures, for managing and monitoring environmental and social issues related to the activities; (d) identify the staffing requirements, as well as the training and capacity building needed to successfully implement the provisions of the ESMF; (e) address mechanisms for stakeholder consultation and redress of possible grievances; (f) disclosure of project documents and instruments; and (g) establish the budget requirements for implementation of the ESMF.

This ESMF should be considered concurrently with instruments prepared and assessments undertaken for the project, including the Stakeholder Engagement Plan (SEP), Environmental and Social Commitment Plan (ESCP), Strategic Environmental and Social Assessment (SESA), Process Framework (PF), and Social Conflict Analysis report.

2 PROJECT DESCRIPTION

2.1 Background

Kenya's Land Assessment Report[1] highlights that high levels of land degradation are likely to occur on approximately 89 percent of Kenya's total land area. The degradation of approximately 38.8 million hectares of Kenya's land has already resulted in reduced ecological functionality and productivity and immense socio-economic and ecological losses estimated at US$1.3 billion annually (National Landscape and Ecosystem Restoration Programme Strategy 2023-2032, NLERS). Land degradation in Kenya is driven by a combination of deforestation, overgrazing, soil erosion, poor agricultural practices, and population pressure. The high level of land degradation has resulted in declining agricultural productivity, loss of biodiversity, loss of livelihoods, and drives conflict (particularly over grazing land). Specifically, the degradation of water catchment areas (referred to as water towers in Kenya) has reduced water retention of upper catchments, exacerbating the effects of both droughts and floods, and reducing the availability of water for agricultural, industrial, and domestic uses.

[1] Ministry of Environment and Natural Resources (2016). Land Degradation Assessment in Kenya. Republic of Kenya, Ministry of Environment and Natural Resources (MENR), Nairobi.

Climate change exacerbates these effects, particularly in arid and semi-arid regions, where droughts and extreme weather worsen land degradation. Insecure land tenure, inefficient water management, and invasive species further degrade land quality. Rapid urbanization, infrastructure development, and pollution add to the complexity, necessitating a watershed approach to address the challenges across county borders and integrated solutions for sustainable land management.

KEWASIP responds to the critical need to restore degraded landscapes, strengthen the management of Kenya's natural resources, and enhance ecosystem services to improve climate resilience and provide access to diversified livelihoods in Kenya. Through restoration and enhancement of ecosystem services, the Project will help weaken the link between climate shocks and debt. Furthermore, the Project will provide a framework for maximizing finance for development in the landscape restoration sector by: (i) providing co- and parallel financing opportunities for Kenya's development partners; (ii) facilitating private capital mobilization in land restoration on private and public lands; and (iii) enabling private investment in community lands.

2.2 Project Components

2.2.1 Component 1. Roots of Resilience: Policy, Legal, and Regulatory Framework

The objective of this component is to establish the groundwork for programmatic and sustained investments in sustainable land and watershed management (SLWM) by enhancing the capabilities of institutions and natural resources management governance structures in Kenya. The component focuses on enhancing coordination mechanisms and informed decision making by building an integrated watershed monitoring system that ensures compatibility across existing systems; creating incentives for efficient management of ecosystem services to promote climate-resilient landscapes, benefit-sharing, and diversified rural livelihoods in Kenya. There are three sub-components:

2.2.1.1 Subcomponent 1a. Strengthening watershed management institutions and governance

The technical assistance (TA) provided through Sub-Component 1a. will strengthen policy, regulatory, and institutional frameworks to support conservation, protection, and sustainable management of landscapes and ecosystems. It will support efforts to: (i) implement the NLERS across all levels of government as well as institutional assessments at national and county levels to deliver NLERS; (ii) develop an integrated landscapes and ecosystems management plan; (iii) build capacity of County Environment Committees (CECs) to deliver their expanded mandate for landscape restoration; (iv) develop comprehensive guidelines of best practices for SLM implementation, with a strong emphasis on effective strategies for community engagement, participation, and ownership; and, (vi) develop tools for identifying intervention watersheds and prioritizing SLM investments to support the identification of priority watersheds for KEWASIP interventions, ensuring that SLM investments are strategically targeted for maximum impact. Furthermore, TA provided under Sub-component 1a. will promote the adoption of the amended Forest Conservation and Management Act [FCMA (which has a clear commitment towards prioritizing climate mitigation measures)] and provide support needed to achieve objectives presented in the third NCCAP 2023-2027 and "Kenya's NDC under the Paris Agreement of reducing GHG emissions by 32% by 2030, relative to the business-as-usual scenario of 143 MtCO2eq". To internalize externalities in the watershed, connecting upstream and downstream users. Specifically, the degradation of water catchment areas (referred to as water towers in Kenya) has reduced water retention of upper catchments, exacerbating the effects of both droughts and floods, and reducing the availability of water for agricultural, industrial, and domestic uses. The TA provided under Sub-component 1.a will support the development of Integrated management plans for the targeted watersheds, crosscutting several counties, based on already prepared sub-watershed management plans (PFMPs, SCMPs, Conservancies Plans) and respective County Integrated

Development Plans (CIDPs). Sub-watershed management plans will be reviewed, updated and, where needed, additional once prepared. These integrated watershed management plans will guide county level planning and implementation under Component 2. A grant manual for community-level grants will be developed. The TA provided under this sub-component will also underpin the various Component 2 SLM activities in support of agricultural and landscape management practices that reduce GHG emissions or increase GHG sequestration.

2.2.1.2 Subcomponent 1b: Development and Implementation of Integrated Watershed and Landscape Restoration Monitoring Systems

Sub-Component 1b aims to enhance decision-making for resilient landscapes and diversified rural livelihoods in the project area during and after the project. Activities include developing and implementing a monitoring and data-sharing framework, assessing and upgrading existing monitoring systems, creating indicators for tracking progress, establishing data protection standards, developing a geoportal with spatial data analytics, creating an integrated central repository, and testing and iterating the prototype platform. Sub-component 1b. will also support ICT and monitoring infrastructure improvement through the procurement of ICT equipment, lab equipment, and software to support data collection, analysis, and reporting at the county and national level as well as procurement of field equipment for monitoring biophysical parameters such water quality sampling and hydromet stations. The third aspect of Sub-component 1b focuses on knowledge management and capacity building. Activities include training staff and focal points, disseminating project and scientific information, development of knowledge hubs, assessing capacity needs of implementation partners, enhancing technical skills of community-based organizations, and training farmer field school facilitators in the project area.

2.2.1.3 Subcomponent 1c. Sustainable financing mechanisms and investments for watersheds and landscapes management

Subcomponent 1c will promote the establishment of sustainable finance mechanisms for community-based restoration activities. These will include carbon credit schemes, Payment for Ecosystem Services (PES) schemes, and benefit-sharing schemes. This Sub-Component will also focus on financing the implementation of selected financing mechanisms scheme. Key activities that will be supported include the identification of ecosystem services and the design and adoption of PES schemes for priority watersheds. A second aspect of Sub-Component 1c. is the development and implementation of an incentive and award scheme to incentivize actors engaged in conservation, recognize identified best practices, and provide small grants to local community groups to scale up their nature-based enterprises.

2.2.2 Component 2. Green Horizons: Sustainable Landscape and Watershed Management

This component will support the restoration and management of degraded landscapes through investment in selected watersheds and help build resilient livelihoods for the communities in the project area. This component will adopt the participatory approach for planning and implementation of SLWM investments and will use the watershed as a management unit. Guided by the integrated watershed management plans prepared under sub-component 1a, the County Project Coordinating Units (CPCUs) will prepare their county level plans for the targeted watersheds. The supported activities will begin with 'no-regrets' activities at a smaller scale (e.g. participatory forest management planning and sub-catchment management planning) appropriate for integrating communities into a participatory process. By implementing SLM practices, the project aims to enhance water retention, reduce surface runoff, and improve soil moisture, thereby mitigating the impacts of climate variability and extreme weather events, and increase community resilience to climate change. SLM practices

promote improved water management by promoting water retention in the landscape, reducing peak flow and thus risk of flooding in flood-prone areas during high rainfall events. Similarly, during drought events, the increased water retention due to SLM interventions and the adoption of complementary practices to reduce the negative impacts of prolonged periods of low or no rainfall, increases individual as well as community resilience during drought periods. SLM practices (e.g., terracing, or the use of cover crops, adoption of more climate resilient crops, etc.) improve soil health, prevent erosion, and enhance water retention. There are two sub-components:

2.2.2.1 Subcomponent 2a. Sustainable Landscape and Watershed Management in Private and Community Lands

Sub-component 2a. activities will focus on private and communal lands. This sub-component will focus on the implementation of land rehabilitation measures and establishment of green infrastructure through biophysical land and water conservation measures. One key objective of this sub-component will be to create benefit streams to the communities in the targeted micro watersheds from increased ecological services and land productivity, mainly through productive use and management of landscapes resources. This subcomponent will also introduce the establishment of green corridors, which will further reduce erosion, enhance watershed restoration, and increase ecological connectivity. Green corridors are established by planting suitable, preferably native tree species, connecting forest patches in the watersheds. These corridors facilitate wildlife movement between habitat patches, promoting gene exchange and maintaining biodiversity. This helps to sustain ecosystem health and enhances the climate resilience of the ecosystem. Climate change poses significant threats to biodiversity, leading to habitat loss, altered species distributions, and increased risk of spreading invasive species. By controlling invasive species such as *Prosopis juliflora* and *Lantana camara*, and promoting native species, the project aims to restore ecological balance and improve the resilience of ecosystems to climate change impacts. The objective of the sub-component will be achieved through biological and physical conservation measures that ensure reduced surface run-off and soil erosion, as well as improved land productivity, resulting in enhanced crop and livestock production. The following activities will be supported:

- Soil and water conservation measures on community and privately cultivated lands: biological and physical soil and water conservation measures/practices such as construction of terracing, check dams, water harvesting, farmer-led irrigation, reseeding, re-vegetating, etc;
- Gully rehabilitation: Cost efficient biophysical gully restoration techniques such as sandbag check dams, sediment storage dams and gabion-check dams will be applied. Productive use and management of the rehabilitated gullies will be supported, such as for forage, fruit and fuel wood production;
- Establishment of green corridors: Planting suitable, preferably native, tree species along rivers/streams and all-weather roads connecting forest patches in the watersheds. Post plantation management support including tending, hoeing and soil moisture conservation will be carried out. Green corridors will also be established along gully offsets to ensure stability and productive use of the land;
- Area closure management and use: Assisted natural regeneration through restrictions on free grazing, enrichment planting, soil fertility improvement and moisture retention will be implemented in communal areas and/or privately managed degraded bush and woodlands. Cost efficient management practices of enclosures will include supporting local communities in the preparation and execution of participatory use and management plans of enclosed areas, including forage cut-and-carry arrangements;

- Establishment of woodlots: Reforestation and afforestation of degraded land and shrub/bush lands with a diverse range of tree and shrub species that can be used as a source of food, feed and energy, and enhance fertility of the soil. Planting of appropriate tree seedlings including economically valuable species, and post-plantation management practices such as tending and watering in moisture stressed areas, hoeing and weeding during early stages will be carried out to ensure survival of the planted seedlings;
- Agroforestry in productive landscapes: this will include promotion of high value tree crops; value addition and establishment of market linkages;
- Enrichment of degraded pasture and rangeland: Planting and reseeding of appropriate forage species including fodder crops in degraded pasture and rangelands to increase productivity and improve the value of feed for grazing animals; and
- Control and management of invasive species (such as Prosopis juliflora and Lantana camara).

2.2.2.2 Subcomponent 2b: Restoration of gazetted forests

Sub-Component 2b. activities will be undertaken in selected gazetted forests (see map). Activities will enhance the forest restoration capacity of the Kenya Forest Service (KFS) and Kenya Forestry Research Institute (KEFRI) as well as promote private capital mobilization using PPPs for seedlings production and forest management to reduce the fiscal burden on the state. Key activities will include: (i) enhancing collection, testing, and distribution of quality tree seeds and seedlings for restoration of degraded landscapes; (ii) expansion of production capacity of tree nurseries, planting and management of seedlings for reforestation, natural regeneration; (iii) development of systems and procurement of equipment for control and management of tree pests and diseases, (iv) development of systems for enhanced fire surveillance, preparedness and response mechanisms; (v) control and management of invasive species; and (vi) TA for the development of forest concessions. The tree seeds and seedlings for the restoration of degraded landscapes will be selected for their drought tolerance and resilience to changing climate, ensuring that the restored areas can withstand the impacts of climate change and continue to provide ecosystem services.

2.2.3 Component 3: Project Management, Training & Capacity Building

Component 3 will aim to ensure the efficient consolidation of planning and budgeting processes, alongside the diligent implementation and reporting of project activities in line with the World Bank standards. The project will fund the staffing and operational expenses of the National Project Coordination Unit (NPCU) within the State Department of Forestry of the Ministry of Environment, Climate Change and Forestry. The NPCU will oversee all fiduciary aspects of project implementation, including financial management, procurement, environmental and social safeguards, and monitoring and evaluation (M&E) reporting. Reporting at the national, county, and community levels will be designed to facilitate accurate and comprehensive tracking of project progress. Key activities to be undertaken under this Component will include (i) the establishment and operationalizing of all project governance structures or organs; (ii) project monitoring and evaluation; (iii) institutional support including procurement of vehicles and requisite equipment (computers, printers, etc.); and (iv) capacity building of project staff on aspects of procurement, budgeting, reporting, and monitoring of activities.

2.3 Project Key Expected Results

2.3.1 Outcome: Improved Watershed Management

- PDO1: Hectares of terrestrial and aquatic areas under enhanced conservation and management (WB SC)
    - PDO1a: Private and Community lands with SLM applied and under improvement management
    - PDO 1b: Rehabilitation of degraded gazetted forests
- PDO 2: Net Greenhouse Gas (GHG) emissions per year (WB SC).

2.3.2 Outcome: Livelihoods

- PDO 3: Beneficiaries with enhanced resilience to climate risk (of which female) (WB SC)
    - PDO 3a: Beneficiaries adopting SLM (of which female)
    - PDO 3b: Beneficiaries with livelihood support (of which female).

2.4 Project Beneficiaries

Project beneficiaries will be classified as direct or indirect beneficiaries depending on where they live (i.e., inside or adjacent to project areas) and how they are affected by project interventions and activities (e.g., training, reduced risks, livelihoods, spillover effects, etc.). Beneficiaries will be further classified with the aim of measuring the Project's gender and Vulnerable and Marginalized Groups (VMGs) inclusion results. The Project will use the watershed approach as the unit for integrated planning and management of ecosystems within the project-selected areas. The overarching factors used to identify the project area are the 6 gazetted water towers and the major rivers originating in the 6 water towers and the downstream flows of these rivers. To ensure that the project area reflects the potential amount of financing proceeds and effective consolidation of interventions within the watersheds, additional information on land degradation and SLM cost-benefit considerations were used to identify a smaller number of watersheds to ensure the limited resources can generate measurable outcomes. The final list of selected watersheds will be determined in combination with practical, on-the-ground considerations and subject to the available financing.

2.5 Role of Partners

Development partners, such as the Global Environment Facility (GEF), Climate Investment Funds (CIF), the International Fund for Agricultural Development (IFAD), Food and Agriculture Organization (FAO) and other multilateral organizations, play a crucial role by providing complementary support through financing, capacity building, and policy alignment. This collaborative effort ensures that KEWASIP addresses national environmental challenges and contributes to global and regional commitments, including the Bonn Challenge, AFR100, and other multilateral environmental agreements (MEAs) aimed at restoring ecosystems and building climate resilience.

3 ENVIRONMENTAL AND SOCIAL MANAGEMENT REQUIREMENTS

This section provides the relevant institutional, policy, and legal framework governing the ESMF. As indicated in the introduction, the ESMF is required to satisfy the requirements of the World Bank's applicable ESSs of the ESF, Environmental, Health, and Safety Guidelines (EHSGs) and national legal requirements. This section also assesses SDF's capacity to comply with WB ESF requirements, and gaps between national ESIA requirements and WB's ESSs and EHSGs. Thereafter, recommends gap filling measures.

3.1 Institutional Framework

The following key administrative agencies regulate watersheds and its environmental and social implications in Kenya:

Table 3-1 E&S Institutional Framework

No	Institution/Ministry	Description of their role	Relevance to the project
1.	Ministry of Environment, Climate Change, and Forestry (MECCF)	Facilitate good governance in the protection, restoration, conservation, development and management of the environment and natural resources for equitable and sustainable development.	Sets environmental management policy
2.	State Department for Forestry (SDF)	SDF is responsible for: Forestry Development Policy; Forestry Management; and Support in Climate Change/Action Policy; and Development of Forests, Re-afforestation, and Agroforestry.	KEWASIP National Project Coordination Unit (NPCU) will be hosted at SDF
3.	County Governments	• Counties will be involved in the implementation of the project. • Ensure the voice of local community is heard in development projects; • Ensure compliance with health Acts; • Authorize waste management; • Review master plans for compatibility with the approved zoning; and • Adjudicate community land issues.	Will host County Project Coordination Unit(s) (CPCUs).
4.	National Environment Management Authority (NEMA)	Exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment.	• Reviews and approves SESA reports. • Grants ESIA approval for subprojects • Monitors and assesses E&S performance of projects.
5.	National Environmental	Investigates allegations and complaints of suspected cases of	Members of the public can register or appeal to this committee regarding any

No	Institution/Ministry	Description of their role	Relevance to the project
	Complaints Committee (NECC)	environmental degradation. The Committee also prepares and submits to the NEC periodic reports of its activities.	aspects of the project that violates the law and its NEMA license conditions.
6.	National Environment Tribunal (NET)	• reviews administrative decisions made by NEMA relating to issuance, revocation or denial of license and conditions of license; • provides legal opinion to NEMA on complex matters where the Authority seeks such advice; and • has powers to change or give an order and direction regarding environmental issues in dispute.	Members of the public can register or appeal to this committee regarding any aspects of the project that violates the law and its NEMA license conditions.
7.	Water Resources Authority (WRA)	responsible for the regulation of water resources such as water allocation, source protection and conservation, water quality management and pollution control and international waters.	Any water abstraction by the project should obtain permit from WRA.
8.	Ministry of Labour and Social Protection	• The State Department for Social Protection focuses on the welfare of the family, women, Children, older persons and other vulnerable groups with special attention accorded to Persons with Disabilities (PWDs). • formulate and implements the national labour Legislation and policy; and • Parent to Directorate of Occupational Safety and Health Services (DOSHS)	• The Social Risk Management Unit within the department will support in management of the Project's social risks and impacts through capacity building to Counties. • DOSHS monitors working conditions at workplaces; • Enforces WIBA insurance for staff; • Workplace registration for all project sites; and • Annual occupational safety and health audits.
9.	Ministry of Sports, Culture and Heritage	develop, promote, preserve, and disseminate Kenya's diverse cultural, artistic and sports heritage through formulation and implementation of policies which enhance national pride and improve the livelihood of the Kenyan people.	Through National Museums of Kenya (NMK) must be informed of any chance finds during project implementation.
10.	National Gender and Equality Commission (NGEC)	Monitors, facilitates and advice on mainstreaming of gender issues and inclusion of PWDs, women,	Ensure KEWASIP delivers benefits for stakeholders including vulnerable and marginalized groups (VMGs).

No	Institution/Ministry	Description of their role	Relevance to the project
		children, youth, older members of society, minority and marginalized groups in National Development.	
11.	Kenya Wildlife Service	facilitate good governance for sustainable development, management and marketing of tourism and wildlife.	Obtain approval for any work within wildlife protected areas.
12.	Kenya Forest Service	provides for the development and sustainable management, including conservation and rational utilization of all forest resources for the socioeconomic development of the country and for connected purposes.	Through the SDF, KFS will play a leading role in Project implementation.
13.	Kenya Forestry Research Institution	undertakes research and provides technologies and information for sustainable management, conservation and development of forests and allied natural resources.	Key to achieving Component 2b activities: (i) collection, testing, and distribution of quality tree seeds and seedlings for restoration of degraded landscapes; and (ii) expansion of production capacity of tree nurseries, planting and management of seedlings for reforestation, natural regeneration, development of systems.
14.	Commission of Administrative Justice (CAJ)	Tackles maladministration (improper administration) in the public sector. CAJ is empowered to, et al, investigate complaints of delay, abuse of power, unfair treatment, manifest injustice or discourtesy.	Aggrieved parties not satisfied with the GM outcome may seek CAJ intervention.
15.	Kenya National Commission of Human Rights	• Investigates and provides redress for human rights violations, to research and monitor the compliance of human rights norms and standards. • Conduct human rights education • Facilitate training, campaigns and advocacy on human rights as well as collaborate with other stakeholders in Kenya.	Any parties who feel the Project has violated their human rights may approach KNCHR for redress. KNCHR, as necessary, may be involved in project implementation to provide human rights education.
16.	National Council for Persons with Disability (NCPWD)	Promotes and protects equalization of opportunities and realization of human rights for PWDs to live decent livelihoods	Ensure project benefits (especially livelihood activities) also accrue for PWDs throughout the Project lifecycle.

3.2 Policy Framework

3.2.1 Kenya Vision 2030

As the country's development blueprint covering the period 2008-2030, Vision 2030 aims to achieve a "globally competitive and prosperous country with a high quality of life by 2030" (GOK, 2007). Specifically, Vision 2030 aims at transforming Kenya into "a newly industrializing, middle-income country providing a high quality of life to all its citizens by the year 2030 in a clean and secure environment". The Vision is summarized in three pillars namely economic; social, and political pillars. Environment and water sectors fall under the social pillar while the tourism sector falls under the economic pillar. Additionally, in the vision, Kenya will seek to improve the capacity for adaptation to global climatic change and harmonize environment related laws for better environmental planning and governance. Specific strategies will involve promoting environmental conservation for better support to the economic pillar flagship projects; the application of economic incentives; and the commissioning of public-private partnerships (PPPs) for improved efficiency in water and sanitation delivery.

Vision 2030 cannot be achieved in the absence of a clean and healthy environment, and this fits well with KEWASIP. The objectives of KEWASIP are well aligned to the ideals of Vision 2030 as it meets objectives of the social (environment and water) pillars through offering economic opportunities and protection of the environment.

3.2.2 National Landscape and Ecosystem Restoration Programme Strategy 2023-2032 (NLERS)

National Landscape and Ecosystem Restoration Programme Strategy 2023-2032 (NLERS), targeting the growth of 15 billion trees, which lays out a national program to restore, sustain, enhance, protect, and increase the productivity of Kenya's landscapes and ecosystem services. Implementation of the NLERS is expected to result in the restoration and conservation of 10.6 million hectares of degraded landscapes and ecosystems by 2032. These results, in turn, are expected to enhance biodiversity conservation, environmental sustainability, sustainable livelihoods, climate resilience, and socio-economic development. The NLERS framework encourages the mainstreaming of actions by providing a roadmap for cross-sectoral coordination within the context of devolution and local development objectives in an inclusive manner. Through a whole-of-government approach, NLERS aims to harness analysis, planning, and public investment along with institutional readiness to promote institutional collaboration across ministries and subnational entities.

This is the anchor strategy for KEWASIP.

3.2.3 The National Environment Policy, 2014

The overall goal of this Paper is to ensure better quality of life for present and future generations through sustainable management and use of the environment and natural resources.

Section 5.6 of this Policy focusses on infrastructure development and environment and makes explicit policy statements to ensure sustainable management and use of the environment and natural resources during the construction and operation of infrastructure developments including roads.

These policy statements require the commitment of the Government to:

- Ensure Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA), Social Impact Assessment (SIA) and Public Participation in the planning and approval of infrastructural projects;

- Develop and implement an environmentally friendly national infrastructural development strategy and action plan; and
- Ensure that periodic Environmental Audits are carried out for all infrastructural projects. Relevance to this Project.

KEWASIP has commissioned a Strategic Environmental and Social Assessment (SESA), among other social studies to integrate environmental and social considerations in planning and implementation. Chapter five of this ESMF details anticipated environmental and social impacts from KEWASIP implementation and how the negative impacts shall be mitigated.

3.2.4 National Climate Change Framework Policy, 2016

This Policy was developed to facilitate a coordinated, coherent, and effective response to the local, national, and global challenges and opportunities presented by climate change. An overarching mainstreaming approach has been adopted to ensure the integration of climate change considerations into development planning, budgeting, and implementation in all sectors and at all levels of government. This Policy, therefore, aims to enhance adaptive capacity and build resilience to climate variability and change, while promoting a low carbon development pathway.

KEWASIP is consistent with the goals of the Paris Agreement and Kenya's latest Nationally Determined Contributions (NDC). The project supports the mitigation commitments outlined in the NDC, including enhancing tree cover through afforestation and reforestation, achieving land degradation neutrality, scaling up nature-based solutions and REDD+ activities, and strengthening agroforestry/climate-smart agriculture. The project supports the adaptation commitments, including enhancing adaptive capacity and climate resilience across sectors and at the two levels of government (national and county governments), integrating nature-based solutions and land restoration to enhance ecosystem services for climate adaptation (such as water regulation and soil fertility), and enhancing livelihood strategies to strengthen the climate resilience of local communities, including livelihood diversification, water management improvement, and empowerment of marginalized groups. Further, these NDC commitments on mitigation and adaptation are in line with the national climate plans and strategies and are consistent with the findings of the Kenya Country Climate and Development Report (CCDR).

3.2.5 National Forest Policy, 2014

The Forest Policy, 2014 provides a framework for improved forest governance, resource allocation, partnerships and collaboration with the state and non-state actors to enable the sector to contribute to meeting the country's growth and poverty alleviation goals within a sustainable environment.

Subcomponent 1a shall strengthen forest management policy and legal frameworks while Subcomponent 2b seeks to regenerate selected gazetted forests. Led by SDF, the project will work with both state and non-state actors to achieve sustainable natural resource management.

3.2.6 The National Wildlife Conservation and Management Policy, 2020

The objectives of this policy include in part; The preparation of a coordinated framework for wildlife management; Conservation of wildlife resources in national parks, national reserves and national sanctuaries in an effective and equitable manner; Ensuring maintenance and enhancement of ecological integrity of wildlife and their habitats and; Enhancement of the contribution of wildlife resources into the national economy. In relation to the conservation and management of wildlife in National Reserves and sanctuaries, the government is required in part, to:

- Develop an effective benefit-sharing mechanism between the National and County governments and communities living adjacent to Protected Areas (PAs);
- Establish clear boundaries and titling of Pas;

- Ensure the highest level of protection possible to habitats containing viable representative populations of critically endangered, vulnerable or near threatened species through their declaration as a Protected Area;
- Determine and enforce carrying capacities of wildlife habitats in the protected areas to maintain viable and representative populations of wildlife species;

Subcomponent 2b of KEWASIP, inter alia, will promote conservation of biodiversity and protection of renewable resources through strengthened human-wildlife conflict management, mapping and establishment of wildlife corridors and dispersal areas; establish infrastructure to facilitate wildlife movement and transportation for translocation of problem animals from private and community lands to protected areas, wildlife surveillance, and strengthened conservation strategies for endangered tree and wildlife species; and KEWASIP will focus on areas outside the protected areas.

3.2.7 The National Land Policy, 2009

The National Land Policy was formulated to provide an overall framework and define the key measures required to address among others, the critical issues on land, land use planning, environmental degradation, conflicts and unplanned proliferation of informal urban settlements, outdated legal framework, institutional framework and information management. The policy further encourages a multisectoral approach to land use, provision of social, economic and other incentives and put in place an enabling environment for investment, agriculture, livestock development and the exploitation of natural resources.

The main objective of KEWASIP is to improve sustainable watershed and landscape management for livelihoods and conservation in the project areas. Moreover, the Project will be implemented on private, communal and gazetted forest areas, as such, this policy's precepts must be adhered to.

3.2.8 The National Water Policy, 2012

The National Water Policy is informed by the gains made on implementation of reforms in the water sector as anchored on the National Water Policy of 1999 (NWP 1999) also referred to as Sessional Paper No. 1 on National Policy on Water Resources Management and Development, the Water Act 2016, existing related policy documents, and the globally recognized Integrated Water Resources Management (IWRM) approach (GOK, 2012). The policy aligns itself to the constitution regarding creation of a system of democratic governance in which powers are devolved both vertically and horizontally in efforts to take measures to achieve the progressive realization of the cultural and socio-economic 'rights to water', an enabler of wealth creation and poverty alleviation. Most importantly, the key principle of the policy is to ensure a comprehensive framework for promoting optimal, sustainable, and equitable development and use of water resources for livelihoods of Kenyans' (GOK 2012).

KEWASIP proposes various water management and conservation issues among them protection of water towers or watersheds, wetlands and rivers, and critical water springs from degradation.

3.2.9 The National Irrigation Policy, 2017

The Policy aims at ensuring food security, wealth and employment creation, and poverty reduction through accelerated development and improvement of the performance of the irrigation sector. The key aspiration of this Policy is to accelerate irrigation development at a rate of 40,000 ha per year with the requisite investments in support infrastructure such as water resource development for irrigation. To achieve this, the Policy proposes to mobilize resources for investments from various stakeholders including the private sector and increase Government financial allocation to irrigation.

Component 2 activities e.g., watershed conservation and management, etc. will include water resource development to support sustainable community livelihoods.

3.2.10 The National Policy for the Sustainable Development of Northern Kenya and other Arid Lands, 2012

The focus of this policy is on promoting social and economic development and the provision of easily accessible services throughout Kenya, and in the arid and semi-arid Lands. The goal is to ensure that Kenya, and in the arid and semi-arid Lands, develops into regions of opportunity and potential, eliminating historical challenges.

Northern Kenya arid land counties are among the beneficiaries of KEWASIP.

3.2.11 The National Policy on Gender and Development, 2019

The National Policy on Gender and Development seeks to create a just, fair and transformed society free from gender-based discrimination in all spheres of life practices. The National Policy highlights the fact that the patriarchal social order supported by statutory, religious, and customary laws and practices; and the administrative and procedural mechanisms for accessing rights have continued to hamper the goal of attaining gender equality and women's empowerment.

To address gaps related to natural resource management and environmental conservation, KEWASIP will focus on: (a) promoting women's participation in local sustainable land and water management; and (b) targeting women in income-generating activities related to landscape restoration. Moreover, Sub-Components 1a and 1b will establish quotas for women's representation in County Environment Committees. Training targeting women will aim to strengthen decision-making, technical capabilities, and enrollment in sustainable practices in the sector.

3.2.12 The National Occupational Safety and Health (OSH)Policy, 2012

This Policy: Establishes National Occupational Safety and Health systems and program geared towards the improvement of the work environment; Seeks to reduce the number of work-related accidents and diseases, and to provide compensation and rehabilitation to those who may be injured at work or contract occupational diseases; and Provides the framework for mandatory use of appropriate personal protective gear, protection of workers against occupational hazards, and workplace provisions for First Aid and emergency medical evacuation.

The Policy is relevant during the construction and renovation activities and seeks to reduce the number of work-related accidents and diseases and equitably provide compensation and rehabilitation to those injured at work or who contract occupational diseases. Construction-related subprojects will be required to implement measures to mitigate unforeseen OSH risks such as provision of PPEs to personnel, emergency preparedness, worker and machinery insurance, among others.

3.2.13 The National Social Protection Policy, 2011

The policy is aimed at reducing poverty and the vulnerability of the population to economic, social, and natural shocks and stresses. The main objectives of the policy include; (i) protecting individuals and households from the impact of adverse shocks to their consumption that is capable of pushing them into poverty or deeper poverty; and (ii) cushioning workers and their dependents from the consequences of income-threatening risks such as sickness, poor health, and injuries at work as well as from the threat of poverty in their post-employment life.

The KEWASIP will deliver project benefits to all stakeholders including VMGs.

3.2.14 The National Climate Change Action Plan (NCCAP III)

The National Climate Change Action Plan (NCCAP III) 2023-2027 outlines Kenya's strategies for achieving low-carbon, climate-resilient development. The plan emphasizes the importance of restoring degraded landscapes and improving watershed services as key climate adaptation and mitigation strategies. An updated Nationally Determined Contributions (NDC) committed Kenya to reduce greenhouse gas (GHG) emissions by 32 percent by 2030. It also seeks to restore degraded landscapes and improve watershed management, which aligns with its broader goals of achieving sustainable development and enhancing climate resilience.

KEWASIP will contribute towards the realization of this Plan's objectives.

3.2.15 The National Water Master Plan (NWMP) 2030

The National Water Master Plan 2030 (NWMP) also sets out strategies for sustainably managing Kenya's water resources. It highlights the need for watershed management and rehabilitation to ensure water security for the country's growing population and economy.

KEWASIP's will improve sustainable watershed and landscape management for livelihoods and conservation in the project areas thus contributing to implementation of the master plan.

3.2.16 The National Biodiversity Strategy, 2007

The overall objective of the National Biodiversity Strategy and Action Plan (NBSAP) is to address the national and international undertakings elaborated in Article 6 of the Convention on Biological Diversity (CBD). It is a national framework of action to ensure that the present rate of biodiversity loss is reversed, and the present levels of biological resources are maintained at sustainable levels for posterity.

The general objectives of the strategy are to conserve Kenya's biodiversity to sustainably use its components; to fairly and equitably share the benefits arising from the utilization of biological resources among the stakeholders; and to enhance technical and scientific cooperation nationally and internationally, including the exchange of information in support of biological conservation.

Subprojects under the KEWASIP will adhere to this Strategy through conducting environmental baselines studies.

3.3 Relevant Legal Frameworks

Table 3-2 Relevant Legal Frameworks

Legislation	*Key Provisions*	*Relevance to the Project*
Constitution of Kenya, 2010	Kenya has undergone regulatory reforms over the past two decades, culminating in the enactment of a new constitution in 2010. The Constitution is the supreme law in Kenya and gives a lot of emphasis on environmental conservation and sustainable development. For instance, in the Preamble, the Constitution states that "We, the people of Kenya will be respectful of the environment, which is our heritage, determined to sustain it for the benefit of future generations". Article 2(5) of the Constitution states that the general rules of international law ratified by the country shall form part of the laws of Kenya. For the purposes of protection of the environment, several principles of international environmental law are incorporated, viz: • the polluter pays principle; • principle of public participation; • principle of sustainability; • principle of inter & intra-generational equity; • principle of prevention; and • precautionary principle. The principle of sustainable development is entrenched in Article 102(d) of the Constitution as one of the national values and principles of governance. The Constitution guarantees the right to a clean and healthy environment in Article 42. Article 42 further guarantees the right to have the environment protected for the benefit of present and future generations through legislative and other	*SDF should ensure project activities do not compromise the right to a clean and healthy environment. Adequate measures should be put in place to guarantee the sustainability of the Project. Such measures should include but not limited to pollution prevention and control and sustainable utilization of living natural resources.*

Legislation	*Key Provisions*	*Relevance to the Project*
	measures particularly those contemplated in article 69 and the right to have obligations relating to the environment fulfilled under Article 70. Article 69 imposes obligations on the state. The state is required to; a) ensure sustainable exploitation, utilization, management, and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits; b) work to achieve and maintain a tree cover of at least ten percent of the land area of Kenya; c) protect and enhance the intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities; d) encourage public participation in the management, protection, and conservation of the environment; e) protect genetic resources and biological diversity; f) establish systems of environmental impact assessment, environmental audit, and monitoring of the environment; g) eliminate processes and activities that are likely to endanger the environment; and h) Utilize the environment and natural resources for the benefit of the people of Kenya. Article (69) (2) imposes obligations on every person to cooperate with state organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources. Article 70 provides an avenue for redress for any person who alleges that the right to a clean and healthy environment has been or is likely to be denied, violated, infringed, or	

Legislation	*Key Provisions*	*Relevance to the Project*
	threatened. The Court is empowered to issue preventive, cessation, or compensatory orders. Article 70 relaxes the rule on locus standi because of which, there is no need to prove loss or injury by an applicant. Anyone may institute a claim seeking to enforce the environmental rights and obligations stipulated in the Constitution. Enforcement contemplated by Article 70 will be done through the Environment and Land Court established under Article 162 (2) (b). The Court has the same status as the High Court. This effectively denies the High Court jurisdiction over environmental matters under Article 165 (5) (b). Articles 19 and 27 require equality and freedom from discrimination. Article 21 (3) requires all state organs and officers to address the needs of vulnerable groups within society, including women, the elderly, PWDs, children, youth, members of the minority or VMGs. Provisions on Disability: Chapter 4, Part III, Rights of Persons with Disabilities (Clause 54). Provisions on Social Inclusion including Children, Youth, People Living with Disability and Women: Articles 21 (3), 27 (1 and 4), 53, 55.	
Environmental Management and Coordination Act, Cap 387	Requires ESIA for all projects listed in the Second Schedule and Strategic Environment Assessment for all policies, plans and programmes.	All subproject ESIAs will be conducted in accordance with this Act.

Legislation	*Key Provisions*	*Relevance to the Project*
EMC (Impact Assessment and Audit) Regulations, 2003	• requires that the EIA/EA be conducted by a registered lead or firm of experts in accordance with the terms of reference developed during the scoping exercise. • Categorizes activities in natural conservation areas, as High Risk and can only be approved through preparation of a Full Study Report (FSR).	• All subproject ESIAs must be conducted by registered experts or a firm of experts. • FSRs should be prepared for subprojects to comply with these regulations. • All subprojects with ESIA licenses must undergo annual environmental audits (EA).
EMC (Waste Management) Regulations 2024	• requires waste generators to segregate waste by separating hazardous waste from non- hazardous waste for appropriate disposal. • prohibits any industry from discharging or disposing of any untreated waste in any state into the environment	e-waste from out-of-use ICT equipment and other general wastes generated in the Project will require appropriate disposal in line with these regulations.
EMC (Air Quality) Regulations, 2014	• provides for prevention, control and abatement of air pollution to ensure clean and healthy ambient air. • provides for the establishment of emission standards for various sources such as mobile sources (e.g. motor vehicles) and stationary sources (e.g. industries) as outlined in the EMCA, Cap 387. • Sets emission limits for various areas and facilities. • provide the procedure for designating controlled areas, and the objectives of air quality management plans for these areas. The emission standards for mobile sources are however stipulated under KS 1515.	Project will create dust and emissions from fuels during transportation of raw materials by trucks and staff during implementation, and infrequent operation of backup generators for power.
EMC (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009	• prohibits any person to make or cause to be made excessive vibrations which annoy, disturb, injure, or endanger the comfort, repose, health or safety of others and the environment.	Project works should be planned in a way that limits excessive noise and vibration, especially near sensitive receptors like schools and health facilities.
EMC (Conservation of Biological Diversity and Resources, Access to Genetic Resources and Benefit Sharing) Regulations, 2006	• Prohibits a person from engaging in any activity that may-(a) have an adverse impact on any ecosystem; (b) lead to the introduction of any exotic species; (c) lead to unsustainable use of natural resources, without an EIA Licence issued by the Authority under the Act.	Component 1 and 2 activities should be designed and implemented such that they comply with the requirements of these regulations.

Legislation	*Key Provisions*	*Relevance to the Project*
	• Requires protection of environmentally significant areas to promote and preserve biological diversity. • Requires both monetary and non-monetary benefits sharing for holders of access permits and active involvement of Kenyan citizens and institutions in the execution of the activities under the permit.	
EMC (Wetlands, Riverbanks, Lake Shore and Sea Shore Management) Regulations, 2009	• Requires sustainable utilization of resources on the riverbanks, lakeshores and the seashores. • Requires environmental impact assessment as required under the Act shall be mandatory for all major activities on riverbanks, lakeshores and the seashores • Requires enforcement of special measures, including prevention of soil erosion, siltation and water pollution. • Requires a strategic environmental assessment be conducted for specific wetlands management plans.	KEWASIP proposes various water management and conservation issues among them protection of wetlands and rivers, protection of critical water springs from degradation.
Sustainable Waste Management Act, 2022	Requires preparation of Waste Management Plans (WMPs) by counties, private entities, and individuals.	Waste from the project will require appropriate disposal in line with prepared WMPs, by licensed waste handlers, and in coordination with respective county governments.
Wildlife Conservation and Management Act, 2013	Requires KWS approval for any civil works in protected areas.	Get KWS approval for any project works within protected areas.
Climate Change Act, Cap 387A	• Encourages people to put in place measures for elimination of climate change including reduction of greenhouse emission and use of renewable energy and put in place measures to mitigate against adverse effects of climate change. • Requires establishment of a carbon registry that would be accessible to the public with registers on information relating to carbon credit projects and the amount of carbon credits issued or transferred from Kenya.	• The project should focus on resilience of investments considering country and location specific risks, targeting use-cases (education) that enhance resilience of population, and considering relevant mitigation measures for greenhouse gas (GHG) emissions from project investments. • All KEWASIP carbon credit schemes should be implemented in accordance with this Act.

Legislation	*Key Provisions*	*Relevance to the Project*
	• Protects community resources by requiring that every land-based project carried out under the Act must be put into action through a Community Development Agreement that outlines the connections and responsibilities of the project's proponents on the public and community land where the project is being developed.	
Climate Change (Carbon Markets) Regulations, 2024	• The Regulations define a Carbon Market as "a mechanism that allows public and private entities to transfer and transact emission reduction units, mitigation outcomes or offsets generated through carbon initiatives, products, programmes and projects subject to compliance with national and international laws". • Carbon Projects are defined as "interventions including programmes, projects and products designed to remove, reduce, sequester or avoid carbon emissions." • Carbon projects carried out on community land will be underpinned by a Community Development Agreement (CDA) to be entered into by the project proponent and the community in question. The CDA shall be prepared in the form prescribed under the Regulations.	Subcomponent 1c will promote the establishment of carbon credit schemes as a sustainable finance mechanism for community-based restoration activities.
The Forest Conservation and Management Act, 2016 & Amendment Act, 2021	• Requires empowerment of associations and communities in the control and management of forests. • Requires management of forests on water catchment areas primarily for purposes of water and soil conservation, carbon sequestration, and other environmental services. • Prohibits any person from felling, cutting, damaging, or removing, trading in, or exporting or attempting to export any protected tree species or family of trees or	• SDF is the lead implementor of KEWASIP. Kenya Forest Service (KFS) is a key stakeholder in the management of the natural resources and thus will play major role in the implementation of the Project. • Obtain permit from Kenya Forestry Service (KFS) before any tree felling.

Legislation	*Key Provisions*	*Relevance to the Project*
	regeneration thereof or abet in the commission of any such act.	
County Government Act, 2012	Requires consultative and participatory approach where the principles of planning and development facilitation in a county serve as a basis for engagement between the county government and the citizenry, other stakeholders and interest groups.	• KEWASIP will support implementation of county integrated watershed management plan activities and watershed conservation, and rehabilitation works. • KEWASIP will support a broad national program with county governments to play a key implementation role through existing devolution frameworks. • County Project Steering Committee (CPSC) will provide policy oversight, approve work plans and budgets, and ensure inter-departmental coordination, while County Project Steering and Advisory Committee (CPSAC) will provide technical advice, approve community-level proposals, and ensure quality assurance, while County Project Coordination Units (CPCUs) will oversee project execution, consolidate plans, and monitor activities.
Physical and Land Use Planning Act, 2019	• Mandates that any person engaged in the physical and land use shall foster principles for the overall public good. • Requires sustainable land use land integrating economic, social and environmental needs of present and future generations. • Requires project proponents to give members of the public the opportunity to give their views and raise objections to various matters e.g. the suitability of the national and county plans. • Sanctions any project development without prior permission from respective county governments.	County spatial plans will also inform project activities ensuring that local climate vulnerabilities are incorporated into planning and implementation.
National Land Commission (NLC) Act, 2012	Requires management and administration of land in accordance with the principles of set out in Article 60 of the Constitution and the national land policy.	Any land acquisition by the project should be done through the NLC.

Legislation	*Key Provisions*	*Relevance to the Project*
The Land Act 2012 No. 6 of 2012, Revised 2019	• Provides guidelines on conversion of any land (public land, community land, private land) from one category to another. • Requires conservation of ecologically sensitive public land and taking appropriate action to maintain public land that has endangered or endemic species of flora and fauna, critical habitats or protected areas. • Requires identification of ecologically sensitive areas that are within public lands and demarcation or taking any other justified action on those areas and act to prevent environmental degradation and climate change.	KEWASIP will improve sustainable watershed and landscape management for livelihoods and conservation of ecologically sensitive areas.
Community Land Act, 2016	• Requires considerable land use planning by communities, in terms of human settlement, livelihood and socioeconomic activities. However, the procedures and responsibilities for supporting this land use planning are yet to be defined. • Prohibits compulsory acquisition of community land by the State except in accordance with the law, and upon prompt payment of just compensation to the person or persons, in full or by negotiated settlement. • Prohibits discrimination against any member of the community on any grounds including race, gender, marital status, ethnic or social origin, color, age, disability, religion or culture.	• All project activities on community lands shall be guided by this Act. • Community consultation meetings must ensure participation of the vulnerable and marginalized groups, e.g., women, youth, PWDs, etc.
National Irrigation Act, 2019 **Irrigation General Regulations, 2020**	• Requires individuals and entities using water for irrigation to obtain water use rights and meet attendant obligations • Requires irrigation farmers and Irrigation Water Users Associations (IWUAs) to register as societies.	• Component 2 activities will include water resource development to support sustainable community livelihoods e.g., irrigation, etc. • State Department for Irrigation (SDI) will be part of the National Project Steering Committee (NPSC) while IWUAs will be

Legislation	*Key Provisions*	*Relevance to the Project*
		coopted into County Project Steering Committees (CPSC) and County Project Coordination Units (CPCUs).
Water Act, 2016 **Water Resources Management Rules, 2007**	• Requires national monitoring and information systems on water resources. • Mandates Water Resources Authority (WRA) to demand from any person, within a reasonable time or on a regular basis, to provide it with specified information, documents, samples or materials in relation to the national monitoring and information systems. • Requires a permit for any use of water from a water resource. • Prohibits wilful obstruction, interference with, diversion or obstruction of water from any watercourse or any water resource, or negligently allowing any such obstruction, interference, diversion or abstraction.	• Sub-Component 1b will support efforts to develop and roll out a monitoring and data-sharing framework. • Obtain permits from WRA for all water abstraction activities in the project. • WRA and the National Irrigation Board should collaborate to formulate and be responsible for the execution of, policy in relation to national irrigations schemes. • Project should not finance any activities that are likely to negatively impact the hydrology at project sites.
The Access to Information Act, 2016	Mandates project proponents to disclose pertinent information to stakeholders during the project lifecycle.	Prepare and implement a SEP to guide information disclosure to varied stakeholders.
Public Health Act, Cap 242	Prohibits a person/institution to cause nuisance or condition liable to be injurious or dangerous to human health. Requires county governments to enforce the same.	Implement the E&S requirements stipulated in this ESMF, other safeguard instruments, and/or subproject ESIAs.
The National Construction Authority (NCA) Act, 2012	• Requires construction works to be carried out by NCA registered contractors and supervised by qualified engineers. • Requires construction sites to have permits.	• Only engage NCA registered contractors. • Register all civil works sites with NCA.
The Occupational Health and Safety Act (OSHA), 2007	• Requires Project sites to be registered by DOSHS. • Makes provisions for safety as well as welfare of workers at workplaces • Requires workplace and fire safety audits for internal environments.	• Register all subprojects sites as workplaces annually. • Ensure safety and welfare provisions for project workers. • Conduct annual workplace and fire safety audits for project's internal environment (buildings). • Ensure all machines and equipment are serviced and inspected as per the manufacturer's specifications.

Legislation	*Key Provisions*	*Relevance to the Project*
	• Requires examination and testing of plants and equipment. • Requires accident investigation and reporting to DOSHS within 24 hours (fatal accidents) and 7 days (non-fatal accidents) and subsequent investigations	• All accidents or incidents should be reported to DOSHS and WBG within 24 hours and 48 hours respectively.
Work Injury Compensation Benefit Act, 2007	• Requires compensation for employees for work-related injuries and diseases. • Requires employer to report an employee's injury to DOSHS county offices within 24 hours (fatal accidents) and 7 days (non-fatal accidents).	• All Project workers should have WIBA insurance. • All accidents or incidents should be reported to DOSHS county offices within 24 hours.
The Employment Act, 2007	• Prohibits forced and child labour, discrimination, and sexual harassment in employment. • Requires employers to provide contracts to all employees with provisions such as annual leave and adhering to the reining minimum wage guidelines as appropriate.	Prepare and implement LMP, SEP and GBVAP.
Labour Relations Act, 2007	• Provides guidance on registration, regulation, and management of workers and employers organizations. • Promotes sound labour relations through protection and promotion of freedom of association, collective bargaining, and orderly and expeditious dispute resolutions.	Project workers to freely join trade unions and engage in collective bargaining.
National Gender and Equality Commission Act, No. 15 of 2011	• Requires projects to offer equal opportunities to women, men, persons with disabilities, the youth, children, the elderly, minorities, and marginalized communities.	Prepare and implement LMP, SEP, GBVAP and VMGP to meet this Act's requirement.
The Sexual Offences Act, No. 3 of 2006	Requires elimination of sexual offences e.g., sexual exploitation and harassment, e.g., everywhere including workplaces.	Prepare and implement GBVAP to meet this Act's requirement.

Legislation	*Key Provisions*	*Relevance to the Project*
Child Rights Act, 2012	Section 15 specifically prohibits sexual exploitation of children, including prostitution, coercion into sexual activities, and exposure to obscene materials.	All project workers to sign a code of conduct (CoC) with sanctions on SEA/SH.
Persons with Disability Act, Cap 133	• Provides for the rights and rehabilitation of PWDS • Champions for equal opportunities for PWDs • Establishes the NCPWD	PWDs are priority beneficiaries of the project.
The National Museums and Heritage Act (2006) And its Revised Edition (2012)	Requires project proponents to notify NMK of any cultural heritage discovery and sets restrictions on moving objects of archaeological or paleontological interest.	Chance finds procedures shall be prepared as part of the subproject ESIAs and implemented as necessary.
HIV/AIDS Prevention and Control Act (Act No.14 of 2006, Revised in 2012)	requires HIV/AIDs education in the workplace.	• Implement HIV/AIDs awareness programmes throughout project lifecycle. • Contractors for sub-projects will provide training on HIV/AIDS awareness, prevention, and management to their workers in accordance with this legislation.
Community groups registration Act, 2022	Provides for the registration and management of community groups (self-help groups, community-based organizations and special interest groups)	KEWASIP plans to work with registered community groups.

3.4 International Agreements and Treaties

Kenya is a signatory to several multilateral agreements and conventions that are relevant to the project; including but not limited to the following:

- 1966, International Covenant on Economic, Social and Cultural Rights (ICESCR)
- 1969, Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)
- 1971, Convention on Wetlands of International Importance (Ramsar)
- 1972, Convention Concerning the Protection of the World Cultural and Natural Heritage
- 1973, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- 1989, Convention on the Rights of the Child
- 1992, Convention on Biological Diversity
- 1992, United Nations Framework Convention on Climate Change
- 1994, United Nations Convention to Combat Desertification (UNCCD)
- 1997, Kyoto Protocol to the UNFCCC
- 2000, Cartagena Protocol on Biosafety on the Convention on Biological Diversity
- 2003, Convention for the Safeguarding of Intangible Cultural Heritage
- 2005, Convention on the Protection and Promotion of the Diversity of Cultural Expressions
- 2007, United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

3.5 The World Bank's Environmental and Social Framework (ESF), 2017

The ESF sets out the World Bank's commitment to sustainable development, through a Bank Policy and a set of Environmental and Social Standards (ESSs) that are designed to support Borrowers' projects, with the aim of ending extreme poverty and promoting shared prosperity. This Framework comprises:

- A Vision for Sustainable Development, which sets out the Bank's aspirations regarding environmental and social sustainability.
- The World Bank Environmental and Social Policy for Investment Project Financing, which sets out the mandatory requirements that apply to the Bank.
- Ten (10) Environmental and Social Standards (ESSs), which set out the mandatory requirements that apply to the Borrower and projects; and
- WBG Environmental health and safety guidelines (EHSGs).

The ESSs set out the requirements for Borrowers relating to the identification and assessment of E&S risks and impacts associated with projects supported by the Bank through Investment Project Financing (IPF). The Bank believes that the application of these standards, by focusing on the identification and management of E&S risks, will support Borrowers in their goal to reduce poverty and increase prosperity in a sustainable manner for the benefit of the environment and their citizens. The standards will:

a) support Borrowers in achieving good international practice relating to E&S sustainability.
b) assist Borrowers in fulfilling their national and international E&S obligations.
c) enhance nondiscrimination, transparency, participation, accountability, and governance; and
d) enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.[2]

[2] The World Bank Environmental and Social Framework (ESF), 2017

Nine (9) of the ten (10) ESSs are currently relevant to the project. Table 3-3 provides key requirements for each ESS and relevance to the proposed project.

Table 3-3 ESS Key Requirements and Relevance to the Project

ESS No.	ESS Title	Key Requirement	Relevance to the Project
ESS1	Assessment and Management of Environmental and Social Risks and Impacts	• Requires the assessment, management and monitoring of E&S risks and impacts of the project throughout the project lifecycle. • Requires the application of the Bank's EHS Guidelines, or other more stringent measures where these exist. • Requires the preparation of an ESCP as part of the legal agreement with material measures and actions required for the project to achieve compliance with the ESSs.	• ESS1 applies to all projects supported by the Bank through Investment Project Financing (IPF). As such, ESS1 is relevant to this project. • Potential risks are related to restrictions on land use or access to land and natural resources, challenges in establishing equitable benefit-sharing mechanisms for investments on community land, and the displacement of communities, which could affect their economic status and social cohesion leading to social tension in the community. Additional risks include the potential for adverse impacts on livelihoods from livelihood restoration activities, the exclusion of Indigenous Peoples (IPs) and Vulnerable and Marginalized Groups (VMGs) from project benefits, ineffective grievance management, and inadequate monitoring of the effectiveness of livelihood restoration or improvement measures during implementation. • The project has prepared several E&S instruments while others are still under development. Those prepared for the appraisal stage are: ESCP; ESMF; SEP; and A-ESRS. Process Framework; Social Conflict Analysis; LMP (with an annex on Sexual Exploitation, Abuse and Harassment (SEAH) Prevention and Response Plan); and SMP are still under development.
ESS2	Labour and Working Conditions	• Requires development and implementation of labor management procedures. • Requires workers to be provided with clear information and documentation on terms and conditions of employment. • Promotes nondiscrimination of workers in employment and treatment.	• ESS2 is relevant to this project due to the different categories of labour working on the project: (i) direct workers; (ii) contracted workers; (iii) primary supply workers; and (iv) community workers, as necessary. • LMP in line with ESS2, the World Bank Group's Environmental, Health and Safety Guidelines and national labor laws will be prepared and annexed to this ESMF. The LMP shall contain a separate Grievance Redress Mechanism (GRM) for workers,

ESS No.	ESS Title	Key Requirement	Relevance to the Project
			conditions of employment, non-discrimination and equal opportunity, worker's organizations, prohibition of child and forced labor, code of conduct against SEA/SH in the workplace, and Occupational Health and Safety (OHS) aspects. • Civil servants will be bound by their public sector contracts. During implementation environmental and social screening will be carried out to ascertain if there are any potential risks and impacts under the type 2 TA activities that will be financed and ensure ToRs and TA outputs are consistent with the requirements of this standard. • Where subprojects will make use of community workers including where labour is provided by the community as a contribution to the subproject, the MoECCF will ascertain, through screening, whether such labor is provided on a voluntary basis or on individual/community agreement and ensure alignment to the requirement of ESS2. The MoECCF will assess whether there is risk of child labor within the community labor and identify and manage those risks by taking appropriate steps to remedy the situation in consistence with ESS2. Also, the MoECCF will identify potential risks of child labor, forced labor and serious safety issues which may arise in relation to primary suppliers.
ESS3	Resource Efficiency and Pollution Prevention and Management	• Requires implementation of technically and financially feasible measures for improving efficient consumption of energy, water, and raw materials, as well as other resources. • Requires pollution prevention through avoidance of the release of pollutants or, when avoidance is not feasible, minimization and control the concentration and mass flow of their release using the performance levels and measures specified in national law or the EHSGs, whichever is most stringent.	• Implementing SLWM activities, such as constructing soil and water conservation infrastructure, will require raw materials (e.g., water, sand, rocks, aggregate, murram), which may be sourced locally. Although the demand for these materials is not expected to be substantial, it will be important to plan materials sourcing carefully and minimize waste. • The restoration of degraded riparian zones, wetlands, and the rehabilitation of water harvesting structures could have varying effects on water flow and availability. Water resources are scarce in many areas targeted by KEWASIP, and improper management could

ESS No.	ESS Title	Key Requirement	Relevance to the Project
			worsen the situation, leading to reduced access to water for downstream users. • Large-scale restoration can prevent erosion, but in the short term, soil disturbance (e.g., tree planting, construction of terraces or gabions) could lead to increased sediment runoff into rivers and lakes, further contributing to water degradation and affecting aquatic ecosystems. As climate variability increases, the projected rise in extreme weather events—such as prolonged droughts and intense rainfall—could exacerbate land degradation, making it difficult for restored ecosystems to stabilize. • To mitigate these risks, the project shall develop comprehensive water resource management plans that balance water use across upstream and downstream users. The project should implement erosion control techniques early in the project cycle to minimize sediment runoff during restoration activities and ensure that the Integrated Watershed Monitoring System tracks changes in water quality and flow dynamics to provide real-time data that informs adaptive management strategies. The MoECCF will ensure assessment of ESS3 risks in TA outputs including the adoption of climate mitigation and adaptation measures in interventions, ensuring consistency with the requirements of this standard.
ESS4	Community, Health, Safety and Security	• Requires the assessment, management and monitoring of E&S risks and impacts of the project on the health and safety of the affected communities (vulnerable) during the project life cycle. • Requires an assessment of how use of security by the Project to safeguard personnel and property could impact on community considering human rights.	• ESS4 is relevant to this project given potential risks to the community health and safety that could result from accidents at project sites, the transmission and spread of diseases, GBV/SEA/SH risks, and use of armed security in the Project. • Prepare and implement a SEA/SH Action Plan. The Project will assess site specific SEA/SH risk using tool for SEA/SH risks assessment as part of ESMP, if required, a GBV risks assessment shall be conducted and an action plan for risks management/ mitigation plan shall be developed, if necessary. The project will ensure that contractors and subcontractors bidding documents provide requirements for GBV

ESS No.	ESS Title	Key Requirement	Relevance to the Project
			risks mitigation including signing of Code of Conduct for employees / workers/labourers. • Community involvement in labor-intensive restoration activities, such as tree planting and soil conservation, carries risks of injuries, particularly in areas with difficult terrain or extreme weather conditions. In addition, invasive species management, particularly using herbicides or other chemical agents, could expose workers to harmful substances if proper safety measures are not in place. Mitigation measures shall include: (a) establishing clear OHS guidelines and conduct training for all community workers and project staff involved in restoration activities; and (b) providing the necessary personal protective equipment (PPE) and implement chemical safety protocols where applicable. The measures are articulated in this ESMF. • TA and capacity building activities may lead to risks related to OHS and GBV/ SEA/SH, in addition to security risks in some of the proposed counties. For all TA and advisory support, the MoECCF will ensure relevant aspects of ESS4 are included in the TORs and TA outputs and that community health and safety considerations are addressed throughout the implementation of the TA. The project will enumerate standard operating procedures (SOPs) for managing human security needs in the operation's Project Implementation Manual (PIM).
ESS5	Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	• Anticipates and avoids physical and economic displacement or, where avoidance is not possible, to minimize adverse social and economic impacts. • Requires preparation and implementation of Resettlement Policy Framework (RPF) to guide any physical and economic displacement.	• The Project interventions may include aspects relevant to restrictions on land use or access to land and natural resources, establishing equitable benefit-sharing mechanisms for investments on community land, the displacement of communities resulting in relocation, loss of residential land or shelter, which could affect economic status, livelihoods and social cohesion. • The E&S assessment being undertaken includes a process framework that will inform the development, as necessary, of (a)

ESS No.	ESS Title	Key Requirement	Relevance to the Project
			Resettlement Plans, (b) Livelihood Restoration Plans, (c) Indigenous Peoples Plans, and/or (d) Benefit Sharing Plans/Agreements. The plan/s will be implemented by the project in management of access restrictions on local communities and stakeholders, including on livelihoods, living standards, traditional and cultural practices related to the watersheds, public health and others. The Project E&S screening tool will be applied for interventions and the TORs for the TA activities will consider potential risks and apply appropriate E&S mitigation and management measures.
ESS6	Biodiversity Conservation and Sustainable Management of Living Resource	• E&S assessment as set out in ESS1 but considers direct, indirect, and cumulative project-related impacts on habitats and the biodiversity they support. This assessment should consider threats to biodiversity, for example pollution and incidental take, as well as projected climate change impacts. • E&S assessment of the systems and verification practices used by the primary suppliers.	By applying the Environmental and social screening tool, early E&S screening of proposed activities will be undertaken by the NPCU E&S officers, to exclude those that are likely to have significant adverse impacts on local biodiversity. Invasive plant species such as *Prosopis juliflora* and *Lantana camara* have been observed in some project areas, and these would need well organized removal measures. The mitigation measures applied here shall include: (a) ensuring the use of best practices in invasive species management, including mechanical removal, biocontrol methods, and continuous post-restoration monitoring – in as far as it is technically feasible in the affected ASALs; and (b) Stakeholders should be involved in managing invasive species at the community level, using species for fuel or alternative livelihoods where possible (e.g., Prosopis for briquettes).
ESS7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	• Full consultation and provision of opportunities for Indigenous Peoples / Sub-Saharan African Historically Underserved Traditional Local Communities in project design and in the determination of project implementation arrangements. • Obtain the Free Prior and Informed Consent (FPIC) of the affected Indigenous Peoples/Sub-Saharan African	• The project will benefit regions that include IPs and VMGs. Attention is given to the Project throughout the implementation, to facilitate their targeting, meaningful consultation, respect for human rights and recognition of their unique relationship with land and natural resources. • Prepare and implement an Indigenous Peoples Plan (IPP), for each activity under the Project for which such IPP is required, as set out in the Process Framework and consistent with ESS7.

ESS No.	ESS Title	Key Requirement	Relevance to the Project
		Historically Underserved Traditional Local Communities. • Culturally appropriate and accessible grievance mechanism for the project.	
ESS8	Cultural Heritage	• E&S assessment as set out in ESS1 but considers direct, indirect, and cumulative project-related impacts on cultural heritage. • Stakeholder consultation during cultural heritage identification process. • Listing of all legally protected cultural heritage areas affected by the project. • Chance finds procedures.	Not currently relevant for the Project though restoration activities could interfere with local cultural heritage resources such as shrines and circumcision sites, or limit access to these sites. Civil works could also lead to damage or loss of previously unidentified archeological resources in the project areas. Stakeholder engagement would be necessary to establish the cultural value the community attaches to proposed project areas, and the ways of preserving this value, while chance find procedures will be required during implementation of civil works to protect previously unidentified archeological resources in the project area.
ESS10	Stakeholder Engagement and Information Disclosure	• Stakeholder engagement during project preparation. • Stakeholder Engagement Plan (SEP). • Stakeholder engagement during project implementation and external reporting. • Grievance redress mechanism. • Organizational capacity and commitment.	• Various stakeholder consultations have been conducted while others are ongoing to guide Project preparation, design, and implementation. • Feedback from completed key stakeholder consultations has been included in the SEP including on governance, community livelihoods, degradation of water catchment areas, exclusion of VMGs and IPs, human-wildlife conflict, resource use and related conflicts, environmental management and climate adaptation. The stakeholder engagements will guide the development of the Project Grievance Redress Mechanism (GRM), to be locally available, inclusive, culturally appropriate and accessible to all affected persons including VMGs and IPs. The allocated E&S resources will be used to support implementation of the SEP and achievement of other E&S management obligations. • The final SEP will be disclosed on the MoECCF internal and Bank's external websites.

3.6 The World Bank's Environmental, Health and Safety Guidelines (EHSGs)

The EHSGs are technical reference documents that address the Bank's expectations regarding the EHS performance of its projects. They are designed to assist managers and decision makers with relevant industry background and technical information. This information supports actions aimed at avoiding, minimizing, and controlling EHS impacts during the construction, operation, and decommissioning phase of a project or facility. The EHS Guidelines serve as a technical reference source to support the implementation of the ESSs.

3.6.1 General EHSGs

General EHSGs contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors; these are listed in Table 3-4.

Table 3-4 WB General EHS Guidelines

Environmental	**Occupational Health and Safety**
• Air Emissions and Ambient Air Quality • Energy Conservation • Wastewater and Ambient Water Quality • Water Conservation • Hazardous Materials Management • Waste Management • Noise • Contaminated Land	• General Facility Design and Operation • Communication and Training • Physical Hazards • Chemical Hazards • Biological Hazards • Radiological Hazards • Personal Protective Equipment (PPE) • Special Hazard Environments • Monitoring
Community Health and Safety	**Construction and Decommissioning**
• Water Quality and Availability • Structural Safety of Project Infrastructure • Life and Fire Safety (L&FS) • Traffic Safety • Transport of Hazardous Materials • Disease Prevention • Emergency Preparedness and Response	• Environment • Occupational Health and Safety • Community Health and Safety

3.6.2 Forestry EHSGs

Forestry EHSGs are divided into four sub-sectors guided mainly by utilization of forestry products:

- Board and Particle-based Products;
- Forest Harvesting Operations;
- Pulp and Paper Mills; and
- Sawmilling and Wood-based Products.

The most relevant sub-sector EHSGs for KEWASIP are those on Forest Harvesting Operations. They are discussed briefly next.

3.6.2.1 Forest Harvesting Operations EHSGs

Environment

Environmental impacts from forestry management practices are divided between recommendations applicable to operations in **plantation forests** and those applicable to **managed natural forests.**

Good International Industry Practice (GIIP) in forest management entails:

- compliance with relevant law;
- respect for any customary land tenure and use rights of indigenous peoples;
- respect for the rights of workers, and compliance with occupational health and safety measures;
- measures for community and stakeholder engagement;
- conservation of biodiversity and protection of critical habitat;
- maintenance of environmentally sound multiple benefits from the forest;
- prevention or minimization of adverse environmental and social impacts;
- effective forest management planning; and
- active monitoring and assessment of relevant forest management areas.

Environmental issues (requires monitoring) in forest harvesting operations primarily include the following:

- Habitat alteration and loss of biodiversity;
- Water quality;
- Soil productivity;
- Hazardous materials management; and
- Visual impact.

These issues are detailed in the discussion on anticipated Project risks and impacts section.

Occupational Health and Safety (OHS)

OHS hazards in forestry projects primarily include the following:

- Physical hazards;
- Noise and vibrations;
- Fire; and
- Chemical hazards.

Community Health and Safety (CHS)

CHS hazards in forestry projects primarily include the following:

- Water resources;
- Fire;
- Transportation; and
- Pesticide exposure.

Again, both OHS and CHS hazards are detailed in the discussion on anticipated Project risks and impacts section.

3.7 Assessment of Institutional Capacity to Comply with Environmental and Social Requirements

3.7.1 Ministry of Environment, Climate Change, and Forestry (MoECCF)/State Department for Forestry (SDF)

The MoECCF through the SDF is the executing agency for the KEWASIP at the national level providing oversight of all Project activities to be funded. The NPCU established under SDF will be the key implementing agency of the KEWASIP project. The NPCU will handle daily project management, monitoring and evaluation, and review and approval of CPCUs' work plans.

The main role of the NPCU in the E&S management process of the KEWASIP will include:

- Provide support, oversight, and quality control to field staff working on E&S risk management;
- Collect, review, and provide quality assurance and approval to E&S Screening Forms and ESMPs/ESIAs as relevant. Keep documentation of all progress;

- Oversee overall implementation and monitoring of E&S mitigation and management activities, compile progress reports from local levels/subprojects, and report to the World Bank on biannual basis;
- Train national and county level staff and contractors who will be responsible for implementing the ESMF;
- Ensure that all bidding and contract documents include all relevant E&S management provisions per screening forms, ESMPs, and ESIAs;
- Promptly notify the World Bank of any incident or accident related to the Project with significant adverse effects, including SEA/SH cases;
- Require contractors and supervising firms to provide monthly monitoring reports on Environmental, Social, Health and Safety (ESHS) performance and submit these to the Bank;
- Develop and manage the project Grievance Redress Mechanism (GRM), ensuring complaint lodging and feedback channels are functional;
- Carry out mid-term and closeout E&S compliance audits of the Project;
- Preparation of the POM for the E&S management process; and
- Procure qualified consultants to prepare ESIA reports for investments, as necessary.

The MoECCF has gained substantial E&S experience from implementing other donor-funded interventions and as the mother ministry for NEMA, NECC, NETFUND, KFS, and KEFRI. However, the NPCU has no prior experience with implementation of World Bank projects, applying the ESF, and has overall inadequate Environmental and Social Risk Management (ESRM) capacity at the county and ward levels. However, through secondment, the NPCU now has full-time qualified environmental specialist from NEMA and social specialist from Ministry of Labour and Social Protection (MoLSP) to oversee safeguards implementation at the national level and support the counties. The NPCU, as necessary, will recruit one Gender-based Violence (GBV), and one labor and Occupational Health and Safety (OHS) specialists.

The NPCU E&S safeguards personnel will require adequate budgetary support through allocations and provision of necessary facilities, equipment, and supplies to monitor implementation of E&S safeguards for the project. This support should extend to E&S focal persons at the county level.

Except for the grievance redress mechanism (GRM) developed as part of the KEWASIP's SEP, the SDF does not have an existing mechanism for receiving and addressing the concerns or grievances of local communities and stakeholders.

3.7.2 Kenya Forestry Service (KFS)

KFS is a semi-autonomous government agency within the MoECCF and derives its mandate from the FCMA, 2016. KFS focuses on the following strategic objectives:

- Forest and tree cover expansion for climate mitigation and adaptation;
- Conservation and protection of forests for climate change resilience;
- Economic development and livelihood improvement; and
- Organizational capacity building and collaboration.[3]

KFS is currently implementing Green Zones Development Support Project (GZDSP II) Phase II, an African Development Bank (AfDB) funded project, which require adherence to the donor's E&S framework in addition to the national E&S framework. GZDSP II involves reconstruction of access roads and other necessary infrastructure, including rehabilitation of structures within forest stations thus enabling KFS to improve the management of forests. GZDSP II is implemented through a Project Management Unit (PMU) at KFS that manages and coordinates the project at the national level and supported at the county level by the County Project Implementation Teams (CPITs). However, the MOECCF is responsible for the overall

[3] *https://www.kenyaforestservice.org*

design and technical supervision of project activities including procurement, financial management and monitoring and evaluation (M&E).[4]

KFS, therefore, has requisite capacity to undertake E&S monitoring as mitigation measures are implemented for the KEWASIP's activities in gazetted forests.

3.7.3 Kenya Forestry Research Institute (KEFRI)

KEFRI was established as a state corporation in 1986 under the Science, Technology and Innovation Act, Cap 250. KEFRI is also mandated under the FMCA, 2016 to undertake forestry research. KEFRI undertakes research and provides technologies and information for sustainable management, conservation and development of forests and allied natural resources. [5]

The Institute is ISO 14001:2015 Environmental Management Systems (EMS)[6] and ISO 9001:2015 Quality Management Systems (QMS) certified and therefore conforms to international standards on environmental and quality management and relevant national legislations and its research meets international standards.

KEFRI collaborates with FAO, ILRI, NEMA, and National Alliance of Community Forest Associations (NACOFA) – the umbrella organization of Community Forest Associations (CFAs) in Kenya – in the forest landscape restoration (FLR) project. The Institute has previously worked with Japan International Cooperation Agency (JICA), in implementing the "Capacity Development Project for Sustainable Forest Management in Kenya (CADEP-SFM)" project. The overall goal of the project is to ensure sustainable forest management is promoted in Kenya towards the national forest cover target of 10%.

KEFRI was also an implementing agency in the EU-funded programme "Water Towers Protection and Climate Change Mitigation and Adaptation Programme" before the programme encountered challenges following the eviction of forest dwellers and allegations of human rights abuses against the indigenous communities living in the project area.[7]

3.7.4 County Governments

County governments (47) are one arm of a dual governance system in Kenya. The other arm is the national government. This governance structure is anchored in Constitution of Kenya. Twelve (12) county governments will be involved in the KEWASIP implementation. County governments in the Project are required to recruit and retain environmental and social (E&S) officers as part of their CPCUs after the signing of the Intergovernmental Coordination Agreement.

The main role of County Governments in the E&S management process includes:

- Ensure the voice of local community is heard in proposed subprojects;
- Monitoring and implementation of ESMPs for projects within their county;
- Authorize waste management;
- Review master plans for compatibility with the approved zoning; and

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[4] *https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/KENYA-___AR__-_Rev3-APPROVED__-_Green_Zones_Development_Support_Project-Phase_II.pdf*

[5] *https://www.kefri.org/components/vision/vision.html*

[6] ISO 14001 is the internationally recognized standard for environmental management systems (EMS). It provides a framework for organizations to design and implement an EMS and continually improve their environmental performance. By adhering to this standard, organizations can ensure they are taking proactive measures to minimize their environmental footprint, comply with relevant legal requirements, and achieve their environmental objectives. The framework encompasses various aspects, from resource usage and waste management to monitoring environmental performance and involving stakeholders in environmental commitments.

[7] *https://www.eeas.europa.eu/delegations/kenya/european-union-water-towers-programme-now-comes-end_und_en*

- Adjudicate community land issues, if any.

Most counties have established departments that handle environmental and social issues. For instance, Marsabit County has a department of culture, gender and social services, and Laikipia County, a department for water, environment & natural resources and climate change.

All Counties have gazetted the County Environmental Committees (CEC) as required by EMCA, Cap 387, which are supposed to act as coordination forum for environmental issues in the counties. However, some of the CECs are not operational and others have not undergone training and capacity building on how to manage environmental issues in the counties.

The KEWASIP should train, and capacity build these CECs in managing environmental issues including in the expanded mandate of landscape restoration.

Through other World Bank-funded PforR programs [Kenya Urban Support Program (KUSP), Kenya Devolution Support Program (KDSP), and Financing Locally-led Climate Action Program (FLLCA)], majority of the counties have nominated the E&S social safeguards focal points to support the management of E&S risks and impacts for the projects implemented by the counties. The focal points have undergone training carried out by the respective Project Implementation Units (PIUs), the World Bank, DOSHS, and NEMA on the E&S safeguards and have acquired necessary competencies to manage, supervise and monitor the E&S risks on a project implemented by the counties. However, the personnel are still not enough to support the management of E&S issues, ensure compliance of E&S regulations, and provide the required support to new and on-going projects being implemented by the counties.

The KEWASIP needs to undertake further capacity assessment for participating counties to determine their competency in managing E&S risks and impacts specific to the Project.

Other implementing institutions whose E&S capacity will be reviewed are WRA and NEMA.

3.8 Assessment Similarities and Gaps between National ESIA Requirements and WB's Environmental and Social Framework (ESF) requirements on Forestry

This subsection focuses on similarities and gaps between GoK environmental and social requirements and relevant Bank Environmental and Social Framework requirements.

3.8.1 The GoK and World Bank's ESF Similarities

The World Bank ESF requirements and GoK legal frameworks on environmental assessment are generally aligned in principle and objective:

- Both require screening of subprojects to determine which level of social and environmental assessment (e.g., ESMP, EIA, etc.) is needed;
- Both require detailed ESIA for projects with more significant impacts (High and Substantial risk), a less detailed EIA study for projects with less significant impacts (Medium/Moderate risk) and a summary ESIA project report (SPR) for projects likely to have minimal or no adverse environmental impacts (Low risk);
- In mitigating/managing environmental and social risks, both frameworks emphasize the adoption of the mitigation hierarchy approach (Avoid, Minimize, Restore and Offset); and
- In the ESIA process, both frameworks require key stakeholder engagement during planning, implementation, and operational phases of the project.

3.8.2 The GoK and World Bank's ESF Gaps/Discrepancies, Gap Filling Measures

Table 3-5 The GoK and World Bank's ESF Discrepancies and Proposed Gap Filling Measures

No.	Aspect	GoK	World Bank Standard	Gap Filling Measures
1.	Preparation of E&S Instruments; ESIA, ESMP	No procedure for approval of standalone ESMPs but requires them to form part of a Summary Project Report (SPR)/Comprehensive Project Report (CPR)/Full Study Report (FSR)	Okay with a standalone and more detailed ESMP document for low-risk projects.	All sub-project ESIAs to contain an ESMP section.
2.	Scope of E&S instruments	Requires a general determination of environmental and social impacts and mitigation measures	Requires preparation of specialist documents e.g., SESA, LMP, SMP, SEP, IPP, Process Framework, Livelihood Restoration Plans, Social, Conflict Analysis, etc.	ESIA reports to provide detail on labour management, elaborate stakeholder engagement including with IPs and other VMGs.
3.	Consultation with affected parties	EMCA and Land Act, 2012 Act outlines procedures for sensitizing the affected population to the project and for consultation on implications and grievance procedures.	Resettlement programs should be sustainable, include meaningful consultation with affected parties, and provide benefits to the affected parties.	All the affected persons should be meaningfully consulted as provided for in both GoK regulations and the World Bank ESF.
4.	Eligibility for compensation	Kenya's Land Law defines eligibility as both formal (legal) and informal (customary) owners of expropriated land. However, it does not specifically recognize all users of the land to be compensated. The constitution of Kenya on the other hand recognizes 'occupants of land' who do not have title and who the state has an obligation to pay in good faith when compulsory acquisition is made.	Requires preparation and implementation of Resettlement Plans to guide any physical and economic displacement.	The project does not foresee catering for land compensation, but livelihood restoration activities will be implemented, as necessary.
5.	Post-approval environmental performance	ESIA does not result in effective post-approval environmental performance. The mobilization of contractors is weak.	Conducts monitoring and supervision to track E&S performance post-approval. Requires capacity building of key stakeholders to assure E&S implementation.	There is need to focus E&S training on project implementation, and less on design and approval. Environmental inspection capacity by NEMA and counties needs to be significantly improved.
6.	Vulnerable groups	The Constitution of Kenya requires the State to address the needs of vulnerable groups, including "minority or marginalized" and	Particular attention to be paid to vulnerable groups, especially the	Livelihood Restoration Plan (LRP), Indigenous Peoples Plan (IPP), and/or

No.	Aspect	GoK	World Bank Standard	Gap Filling Measures
		"particular ethnic, religious or cultural communities". However, there is no specific Kenyan law to operationalize the constitutional provision on vulnerable groups.	IPs, those below the poverty line, the landless, the elderly, women and children.	Benefit Sharing Plan/Agreement should be prepared as necessary to cater for VMGs.
7.	Livelihood restoration and assistance	There are no specific laws or regulations specifying support for livelihood restoration and transition and moving allowances	Livelihoods and living standards are to be restored in real terms to pre-displacement levels or better	The Process Framework will determine whether a Livelihood Restoration Plan (LRP) is required during project implementation.
8.	Grievance Management	Varied institutions have been established to handle grievances and disputes e.g., courts of law, tribunals, Ombudsman, alternative dispute resolution (ADR)	Requires each Bank-financed project to have a grievance mechanism for receiving and reviewing project-related concerns.	The project has developed a grievance mechanism as part of the SEP.

3.9 List of Environmental and Social Licenses/Permits/Approvals Required for the Project, as per the Requirements of Kenyan Law

Table 3-6 provides a summary of the environmental and social permits and licenses required for the Project for both the construction and the operations phases.

Table 3-6 License/Permits/Approvals and Issuing Institutions

Institution	Licenses/Permit/Approval
County Governments	• Development approval from respective counties for any civil works subprojects. • Approval of county level irrigation schemes • Approval of spatial plans
NEMA	• ESIA license for sub-projects • Annual environmental audits • e-waste management licenses
NCA	• Registration of all civil works sites • Contractor's licensing and their key staff practicing license
DOSHS	• Annual OSH audits for facilities. • Registration of all civil work sites as workplaces.
Contractor's Preferred Insurance company	Workers Injury Benefit Act (WIBA) and Contractors All Risk (CAR) Insurance policies.
KFS	Approval to work in a gazetted forest.
NTSA	Registration of all project vehicles and drivers.
WRA	Permits for any water abstraction and works.

4 ENVIRONMENTAL AND SOCIAL BASELINE/CONTEXT

4.1 Overview

This Chapter provides a description of the existing physical, biological, and socio-economic conditions, which are directly or indirectly affected by Project activities. It is essential that the baseline conditions of the environment are characterized to accurately predict the potential effects the proposed project will have on the environment and society. The collection of baseline data therefore focused on providing information to support the assessment of any potential impact of the project at the water tower level. As such, the main source of the baseline information is the now defunct Kenya Water Towers Agency's status reports for respective water towers. Additionally, guidelines for conducting environmental and social baseline studies (ESBS) for specific subprojects, once project locations are known, are included in this Chapter.

4.2 Chyulu Hills Water Tower

4.2.1 Bio-Physical Environment

4.2.1.1 Geographical Location

Chyulu hills Water Tower is situated 211 km South-East of Nairobi and 20 km South-West of Kibwezi town. It traverses Makueni, Taita Taveta and Kajiado Counties. The Water Tower comprises of Chyulu National Park, Tsavo West National Park, Mbirikani Game Reserve, Kuku Game Reserve and Kibwezi Forest (Map 4-1). The National parks were gazetted in 1983 and the local communities resettled between 1988 and 1991. Socio-economic activities within the Parks became illegal after the gazettement.

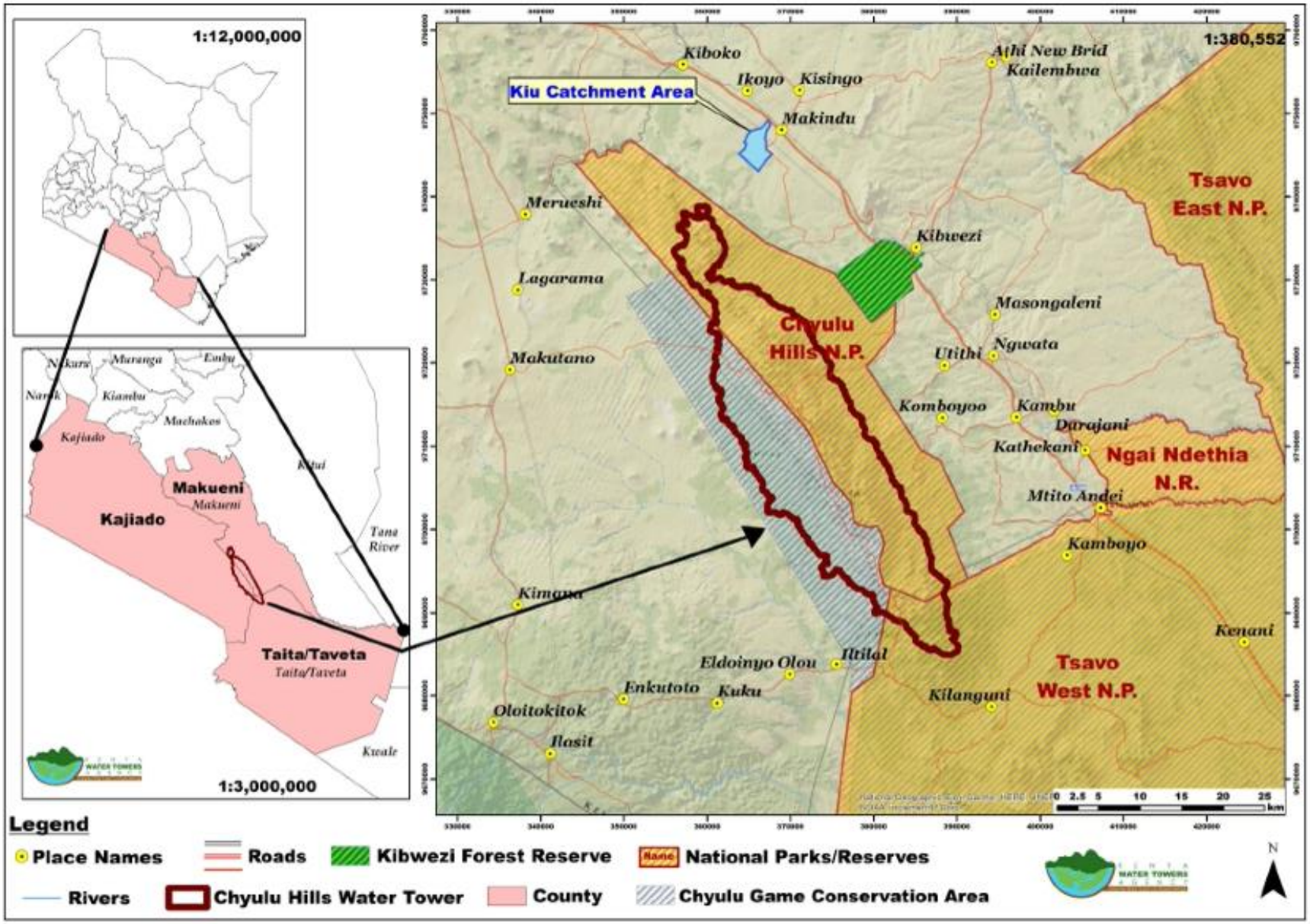
The total area of Chyulu hills Water Tower is 110,945 hectares (ha), of which the gazetted forest is approximately 7,895 ha. The hills are made up of a series of hills of varying altitude that rise from 600 m to over 2,188 m above sea level that cover about 100 km between Emali and Mtito Andei townships in Makueni County. They are volcanic in nature with the ability to retain underground water and are among the key water catchment areas found in the coastal region.

4.2.1.2 Climate and Hydrology

Chyulu Hills Water Tower is characterized by an arid to semi-arid environment. The annual rainfall ranges between 800 to 1,200 mm and falls during the long rain season from March to April and the short rain season between October and December. Temperatures range between 17- 30°C.

Chyulu hills water tower is part of the 15,000 km^2 Kilimanjaro aquifer that holds ground water originating from Mt. Kilimanjaro and Mt. Meru in Tanzania. The aquifer has three main river basins; Athi Galana in Kenya and Umba and Pangani river basins in Tanzania. The hills do not hold permanent surface water but rainfall percolating through the porous volcanic rocks feed many permanent fresh water sources in the form of rivers and springs in the surrounding plains and the Coastal region.

Most of the underground water drains to the Eastern side of the Water Tower. The hills are the source of water for several springs and rivers that include Mzima, Umani, Kiboko, KwaKyai, Masimba Mang'ellete, Kibwezi and Makindu springs and Tsavo, Galana, Kibwezi Kiboko, Makindu, Thange, Ngai Ndeithia, Mtito Andei and Kambu rivers all situated east of the water tower mostly clustered to the northern and southern parts. The Western side of the Water Tower, neighbours Loolturesh swamp, which is recharged by Motiknaju, Kuku, Loolturesh and Kiramankol streams. No river drains into the swamp as there is a physical divide that separates the Water Tower and the swamp.



Map 4-1 Chyulu Hills Water Tower Map

Water Flow Changes

The flow of water from rivers and springs especially those fed through underground water is affected by changes in land cover particularly forests. In determining the changes that occur, an examination of the dry season water flow is a good indicator as to whether ground water is available or is depleted.

Rivers

The water tower is an important source of water for many rivers in the region. The Tower supplies water to Tsavo, Galana, Kibwezi Kiboko, Makindu, Thange, Ngai Ndeithia, Mtito Andei and Kambu rivers. Kibwezi River is fed through underground water systems emanating from the water tower. There have been significant changes to the flow of water in the river since the 1950 and again in 1990s.

Hydrological analysis carried out in 2013 indicates that land cover had changed in the middle section of the hills that increased surface runoff. This increased minimal flow from Kibwezi River from 1990 by 50%.

Springs

The main springs found in the Chyulu water tower are Mzima, Umani, Mang'ellete, Kibwezi and Makindu. Mzima spring has the highest discharge and is an important source of water for the city of Mombasa as it supplies about 30% of the city's daily water requirement. The spring also serves Voi, and other coastal towns.

Umani spring located upstream of the Kibwezi and Mtito Andei rivers serve Kibwezi town while Kiboko spring which feeds into both Kiboko Swamp and Kiboko river serves Makindu town and its environs. Measurements of water discharged from the various springs indicate that water flows during the dry season from the major springs have remained constant over time. This is an indication that overall ground water storage is still abundant. Observations have shown that the smaller springs dry up during the dry season.

Critical Water Catchment Areas

Chyulu Hills Water Tower has a network of water sources, comprising of rivers, streams, swamps, springs and underground water. Although the Water Tower is reasonably well conserved, there exist critical hot spots where forest cover has been reduced to the bare minimum. Loss of forest cover reduces the rate at which rainwater percolates to the ground and increase as surface runoff. This affects the overall level of underground water which leads to reduced water discharge at various outlets.

4.2.1.3 Biodiversity

Chyulu Hills Water Tower is an important biodiversity region due to presence of a wide variety of plant and animal species (biodiversity) with diverse habitats. Over the last fifty (50) years, the Water Tower and the surrounding areas have undergone environmental degradation that not only threatens its biodiversity status and water catchment role, but also its importance as a major economic hub in the country. Poor agricultural practices, encroachment into the forest zone, forest fires, settlements, over-grazing and extractive practices such as charcoal burning, wood for carving and large-scale abstraction of water are some of the pressures experienced that degrade the natural environment which in turn threatens the natural habitat unique for plant and animal species.

Rich Biodiversity

Chyulu Hills Water Tower has a rich diversity of plants and animals including threatened species (IUCN Red-Listed, CITEs Listed), endemic, invasive and a variety of medicinal plants[8]. The ecology of Chyulu is rich and

[8] Musila, W., Kivai S., Moinde N., Hussein A., Githiru M., Kimeu J., Kioko A. & Mati E., (2011), Chyulu Hills Biodiversity Assessment Technical Report. NMK/NCST Publication, Nairobi

diverse; composed of aquatic vegetation, dry forest, forest glades and grasslands. The ecosystem is rich in animal fauna including mammals, birds, reptiles, amphibians and invertebrates.

- ***Mammals –*** Mammals found in the Water Tower include black rhino, buffalo, bushbuck, eland, elephant, bush pig, giraffe, leopard, lion, mountain reedbuck, steinbok, wildebeest and plains zebra. Forty-eight large mammal species have been recorded in Chyulu National Park and six of these are of conservation concern; Black rhino, African elephant, leopard, lion and cheetah.
- ***Birds –*** Chyulu Hills Water Tower is an important bird sanctuary with 249 recorded bird species. The bird species include: Francolinus shelleyi, Pogonocichla stellata, Zoothera gurneyi, Bradypterus cinnamomeus, Hieraaetus ayresii, Stephanoaetus coronatus, Polemaetus bellicosus and Cinnyricinclus femoralis.
- ***Other animals*** – Various reptiles including snakes (e.g. black mamba, puff adder and rock python) and lizards are found in the Water Tower.
- ***Plants*** – Chyulu Hills Water Tower has remained relatively undisturbed and still shelters indigenous vegetation. There are 476 plant species recorded in Chyulu National Park out of which 21 are endemic and 2 are rare species in the IUCN Red List.

Biodiversity Hotspots

The biodiversity hotspots in Chyulu hills include South of Mang'elete, South of Chyulu Game reserve Northern area of Muthingiini and Northwest of Olorika.

Table 4-1 Summary of Biodiversity Richness and Hotspots in Chyulu

No.	Indicator class	No. of species	High	Medium	Low
1.	Reptiles + Amphibians	30	None	Central part of Chyulu Game Reserve	Central part of Chyulu Game Reserve; NE of Olorika; SW of Muthingiini
2.	Invertebrates	200	Iltilal including Northern part; North of Olorika	Iltilal including northern part; North of Olorika; Eastern Oltiasika	Western part of Chyulu; SW Mangelete
3.	Mammals	40	Central part of Forest Reserve	Central part of Forest Reserve; SW Muthingiini	SW Muthingiini, SW Mangelete, Western Oltiasika
4.	Plants	670	Central part of Forest Reserve	Central part of Forest Reserve; SW Muthingiini	SW Muthingiini; SW Mangelete; SW Muthingiini; SW Utithi; NE Olorika; Eastern Oltiasika
5.	Birds	300	Central part of Forest Reserve	Central part of Forest Reserve; NE Iltilal; NE Olorika; SW Muthingiini	SE Mangelete; SW Muthingiini; SW Utithi; West Oltiasika

Threatened Species

Many plant and animal species in Chyulu are of conservation importance as listed in the IUCN red list and CITES. The black rhino is critically endangered, the lion and leopard are near threatened while the cheetah and Abbot sterling are vulnerable. CITES has listed African elephant, Nile crocodile, Southern rock python and flap necked chameleon as endangered.

For plants, the hills host 8 species that appear in the IUCN red list, whereby 3 species are near threatened and 3 vulnerable. The hills also have about 20 plant species endemic to the area and 6 that are invasive and medicinal with great value to the surrounding communities.

Table 4-2 IUCN Red-Listed Animal Species of Chyulu

Class	Common Name	IUCN Red List Status
Bird	Abbot's Starling	Vulnerable
Mammal	Leopard	Near Threatened
Mammal	Lion	Near Threatened
Mammal	Black Rhinoceros	Critically Endangered
Mammal	Cheetah	Vulnerable

Table 4-3 CITES Listed Animal Species found in Chyulu

Class	Common Name	IUCN Red List Status
Mammal	African Elephant	Appendices I
Reptile	Nile Crocodile	Appendices II
Reptile	Southern Rock Python	Appendices II
Reptile	Nile Monitor Lizard	Appendices II
Reptile	Flap-necked Chameleon	Appendices II

4.2.1.4 Land Use and Land Cover (LULC)

Chyulu Hills lie in an arid to semi-arid area with relatively low rainfall and maintaining its ground cover is vital for the region. The predominant ground cover for the water tower is open savannah grasslands with scattered perennial bushes. This gives way to wooded grasslands and dense forests towards the hilltops.

Protected zone

The protected zone is composed of 3, 757 ha (47%) dense forest, 2,501 ha (31.2%) wooded grassland, 1,735 ha (21.6%) open grassland and 7.5 ha (0.09%) other land. There have been conservation efforts in the Water Tower as evidenced by the overall increase in forest cover from the initial 2,805 ha (35%) in 1990 to 3,757 ha (47%) in 2016 (Figure 2.10). Wooded grassland decreased significantly over the period while open grassland decreased until 2010 then later increased from the same year to 2016.

This trend indicates a general reforestation of the Water Tower. It is important to note that cultivation of crops has degraded the Water Tower, and it is recommended that mechanisms should be put in place to stop this trend.

Buffer zone

Every Water Tower has a 5km buffer zone that acts as a barrier towards its protection. The Chyulu Hills Water Tower is about 44,200 ha. Activities in this zone are a measure of the potential stability of the Water Tower as increased human activities in this region have encroached to the protected zone. Trends show that forest land in this zone increased over time while wooded grasslands and open grasslands decreased indicating a general trend towards conservation efforts.

4.2.2 Socioeconomic Environment

4.2.2.1 Population

Chyulu Hills is inhabited mainly by the Maasai and the Kamba communities. The population distribution based on the 2019 census shows that the areas East of the Water Tower and adjacent to the Tsavo National Park were more densely populated.

About 197,000 people, live in Kibwezi Sub-county. The Western side of the Water Tower has fewer people, mainly the Maasai whose population is estimated at 6,641 (Kuku) and 2,091 (Chyulu) people residing in Loitoktok Sub County in Kajiado County.

Various towns are located along the Nairobi-Mombasa Road and railway line namely Mtito Andei, Kathekani, Darajani, Kambi, Ngwata, Masongaleni, Kikumbulya, Kibwezi, Kaluliu, Makindu, Ikoye, Kiboko and Mwaito have relatively high population densities.

4.2.2.2 Livelihoods

The main occupation of the communities living adjacent to the Water Tower is crop and livestock production. The Kamba people on the Eastern side grow crops such as beans, maize, green grams, millet, sweet potatoes, and horticultural crops. Other important crops include cotton and mangoes which are of significant economic value. Pastoralism is practiced in the Western side by the Maasai community who own group ranches. Livestock such as cattle, goats, sheep, donkeys and poultry are kept. The average household size for these communities' ranges between 4 and 9 persons. The average land size is 2 - 10 acres under communal land tenure.

Other socio - economic activities in the water tower include:

- **Game Ranching –** To enhance wildlife conservation, various community conservancies have been established in the Western side of the hills namely Kuku A, Kuku B and Mbirikani;
- **Mining –** Sand and ballast/stone harvesting is a major economic activity in the Eastern side of the Water Tower;
- **Wood carving –** Small traders make various artefacts and souvenirs mostly in the form of wood carvings. These are then sold locally to tourists;
- **Honey harvesting –** Honey harvesting using traditional bee hives is still widely practiced by the Kamba community. Majority of the hives are placed in the forest; and
- **Charcoal production –** This is a lucrative business around Chyulu Hills. Stacks of charcoal bags by the roadside indicate booming business.
- **Miraa (Khat) Harvesting** people access the water tower to have these leaves for domestic and commercial purposes.
- **Grazing –** Pastoralists move into the water tower to graze their livestock especially during periods of drought.

4.2.2.3 Threats and Challenges

- **Encroachment into the water tower –** Many town centers have expanded, and new ones sprung up along the major highways that include Makindu, Ikoye, Kiboko, Mwaito Masongaleni, Kikumbulya, Kibwezi, Mtito Andei, Kathekani, Darajani, Kambu, Ngwata, and Kaluliu. These centres have high population densities which inevitably lead to high demand for products and services from the Water Tower. Extraction of various products from the Water Tower as well as access to water points inside the water tower for both domestic and animal use is on the increase. The major challenge is extraction of water directly from the spring which leads to drying of rivers and wetlands.

- **Illegal logging** – Illegal logging especially of the endangered and indigenous tree species and charcoal burning are on the increase. This is because some sections of the Water Tower are not fenced, mainly those in Kajiado and Taita Taveta counties.
- **Frequent forest fires** – Forest fires are frequent in the Water Tower and are mainly caused by Masai pastoralists who burn vegetation to allow for re-growth. Poachers also burn vegetation to attract wildlife after grass re-grows. Controlling the fires is a challenge as there is lack of proper firefighting equipment, inadequate staff and limited /lack of community involvement.
- **Human wildlife conflicts** – The human/wildlife conflicts involve wildlife destroying crops or killing people and attacks on domestic animals. Human beings respond by killing the wildlife. Delayed compensation is an issue that needs to be addressed through the relevant authority. These lead to poor relations and tensions between enforcers (KWS and KFS) and local communities, hence jeopardizing conservation efforts.
- **Declining forest cover and biodiversity** – There is evidence that conservation efforts increased between 1990 and 2010. The trend however reversed between 2010 and 2016 as the area under forest cover decreased mainly through human activities.
- **Reduced water flows from springs and rivers** – The average flows from Mtito Andei and Kibwezi rivers had decreased significantly overtime due to reduced rate of infiltration. This trend will in the long run affect the many springs that are a source of water in the area as they are fed through ground water.
- **Reduced economic value** – The economic value of the Chyulu ecosystem is estimated at KSh 40 billion as at 2015 mainly from tourism and water provision. The potential however is much higher. Conversion of land to inappropriate uses along with other human interferences will reduce biodiversity which will reduce the number of tourists to the region, hence depressing the economic value.
- **Water shortage** – Increased water abstraction upstream has led to the drying of rivers downstream. This has been caused by increased human population and farming activities. Reduced water levels affect both humans and animals and is a major threat to the ecosystem.
- **Weak enforcement of laws and regulations** – Poor enforcement of existing laws and regulations is the greatest threat to the Water Tower as this allows people to act with impunity to the detriment of the ecosystem. Further, relevant strategic planning documents specifically focusing on the management of the Water Tower i.e. Environmental Management Plan (EMP) and Participatory Forest Management Plan (PFMP) have not been developed making conservation efforts difficult.
- **Inter-community tensions** – Increased population pressure on the limited resources leads to poor relationships between the communities especially during drought season when there is scarcity of pasture and water. These quickly culminates into inter-clan and inter-ethnic conflicts.
- **Differing Inter County priorities** – The three Counties, Kajiado, Taita Taveta and Makueni have different priorities in terms of implementing activities geared towards safeguarding the Water Tower. The three counties also tend to compete for the Water Tower resources (water and pasture). In the case of Mzima spring, Mombasa County has a high stake as the county receives about 30% of its water supply from the springs. This has led to vandalism of water installations by the local communities who are not direct beneficiaries.
- **Threat to pastoralism as a way of life –** Increased population around the water tower and restricted use of the tower by Masai pastoralists presents a danger to the use of territory of the Masai as an historically underserved traditional local community.
- **Other issues**
    - Poor road infrastructure few guards and warden stations located far apart makes it difficult to coordinate emergencies and to provide adequate security for the Water Tower.

- Understaffing within institutions mandated to protect and manage the Water Tower. This puts a lot of pressure on the available staff thereby limiting their efficiency.
- Even though the ecosystem is worth over Ksh.40 billion, financial allocation for the protection and management of the water tower has been limited.
- Poor coordination of relevant stakeholders involved in conservation activities. This has resulted in duplication of duties which leads to wastage of resources.
- Limited education and awareness on importance of conservation and protection of the Water Tower to the surrounding communities.

4.3 Marmanet Forest Water Tower

4.3.1 Bio-Physical Environment

4.3.1.1 Geographical location

The Marmanet forests are located on the eastern escarpment of the Rift Valley, north of Nyahururu. The forests lie between latitude 0.422° and 0.032° and longitude 36.186° and 36.466°, and comprise five forest reserves, namely Lariak, Marmanet, Ol Arabel, Rumuruti and Uaso Narok (Map 4-2). The Ol Arabel Forest Reserve is located on the eastern escarpment of the Rift Valley in Baringo County. The Marmanet Forest Reserve is located on the eastern escarpment of the Rift Valley in Nyandarua County. Rumuruti Forest Reserve is located to the Northeast of Nyahururu town and stretches along the Nyahururu- Rumuruti road. The forest lies in Salama and Marmanet locations of Rumuruti division. These five isolated forests are all that is left of an immense block of forest that once covered much of Southwest Laikipia.

4.3.1.2 Climate and Hydrology

The Marmanet forests are catchments for four rivers; Ewaso Nyiro North, Mukutan, Ol Arabel and Sandai. Rivers flowing from the forest provide water to major conservation areas including Lake Baringo, Lake Bogoria National Reserve, Buffalo Springs national reserve, Shaba National Reserve and drain into Lorian Swamp in Wajir County. Rivers like Ewaso Nyiro North from the catchments also provide water to urban areas including Archer's Post, Ol Donyo and Kipsing Trading centres, including tourist facilities in the protected areas.

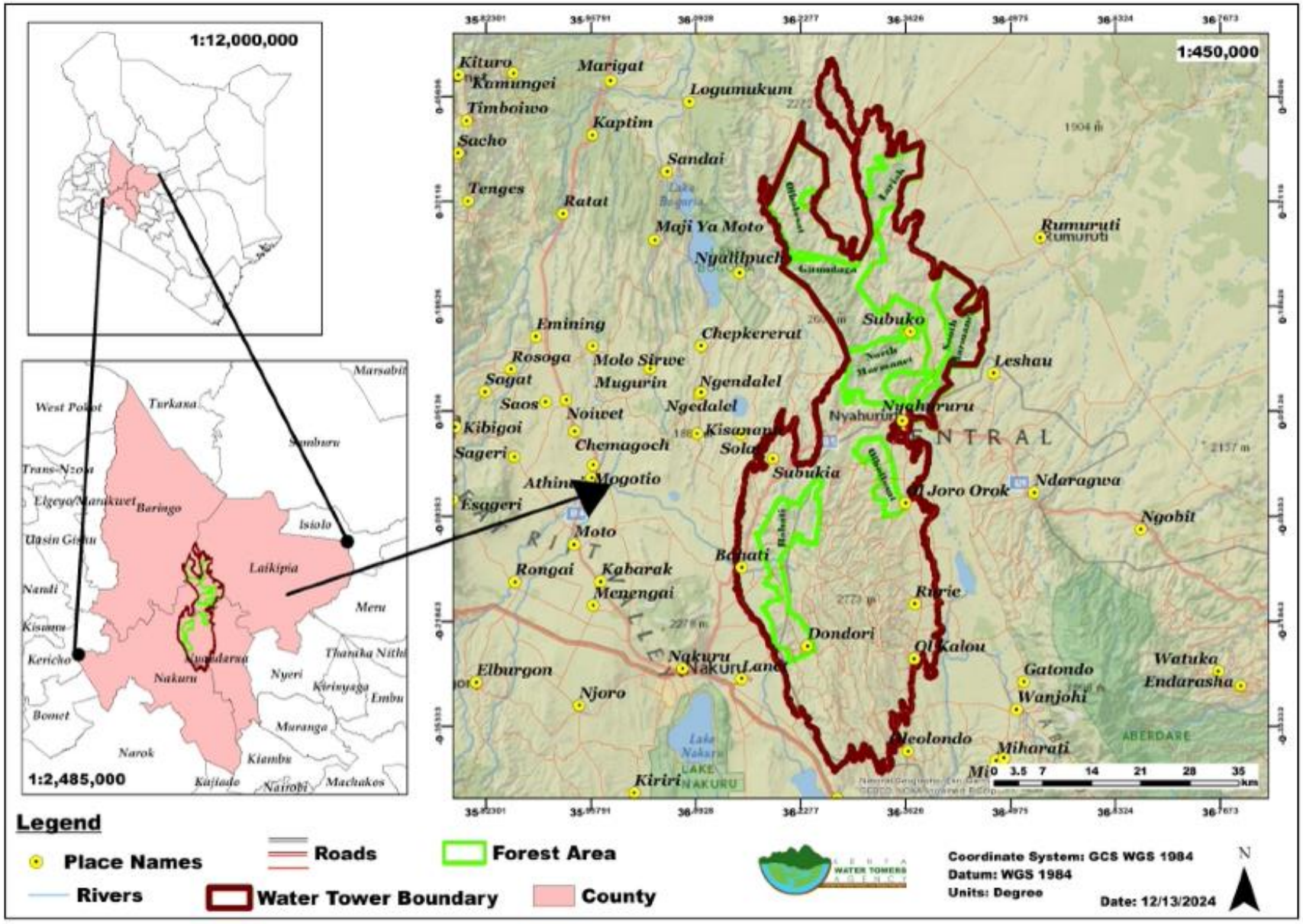
The Marmanet and Ol Arabel Forest reserves form the main upper catchment of Sandai River that drains into Lake Bogoria. It is also part of the upper catchments of Ewaso Nyiro (North) River and of Ol Arabel River that drains into Lake Baringo. Rumuruti Forest is important catchment area for tributaries of River Ewaso Ngiro. Areas around Marmanet receive long rains in the months of April to August and short rains from September to March.

4.3.1.3 Geology and Soils

The soils in Laikipia County can be grouped based on terrain, agro-ecological zones and potentiality. The red brown sandy clay loam luvisoils are found on the southern part of Marmanet Forest. These soils are fertile and suitable for forest and crop production, occurring in part of the Central, Ngarua and Rumuruti Divisions. The reddish clay loam with rock outcrops is found on hills and minor scarps. They are excessively shallow with poor workability and suitable only for sheep and cattle grazing. Dark brown clay loam phaezoms, which occur on low ridges of the plateau, have poor moisture retention and are not suitable for crop production. Dark grey to black clay vertisoils and planosols are concentrated on the plateau. These soils have poor drainage, with limited potential for crop production, but can be suitable for arable agriculture with well-managed irrigation. The ranching zone is found on the plateau and high plains,

uplands and dissected erosion plains. Soils on this zone are reddish brown, clay loam, grayish, brown clay, dark brown clay loam, sandy clay loam to sandy clay, and stormy sandy loam with quartz gravel[9].

[9] FAO and DRSRS 2010 (2010): Analysis of Climate Change and Variability Risks in the smallholder Sector. Case studies of the Laikipia and Narok Districts representing major agro-ecological zones in Kenya.



Map 4-2 Marmanet Water Tower Map

4.3.1.4 Biodiversity

The Marmanet Water Tower contains dry upland forests with Podocarpus occurring along the Uaso Narok River. The forests were once intact with a closed canopy comprising of the following dominant species: Juniperus procera, Olea europea, Podocarpus latifolius, Podocarpus falcatus, Warburgia salutaris, Prunus africana, Cassipourea malosana, Trichocladus ellipticus, Vepris simplicifolia, Ficus thoningii, Calodenrum capense and Croton megalocarpus. The Croton megalocarpus species being drought resistant and exotic have a major boost to afforestation activities in Laikipia by increasing the percentage forest cover while benefiting the rural communities[10].

The forests, however, still boast impressive stands of very old Afrocarpus gracilior trees, some with girths exceeding five metres[11]. There are some magnificent East African greenheart trees, Warburgia ugandensis, the bark of which is widely used in traditional medicine, and whose leaves have a hot, peppery taste. In glades of the forests, there are some striking highland Acacias, Acacia abyssinica, Gnarled Water Berry trees and Syzigium cordatum. Marmanet forests harbour resident as well as migratory elephant populations. They also have other wildlife species that include the Colobus monkey, bush buck, buffalo, dik dik, butterflies and several bird species.

4.3.2 Socioeconomic Environment

4.3.2.1 Population

Marmanet traverses Baringo, Nyandarua and Laikipia counties, which are occupied by the Kalenjin, Kikuyu, Samburu and Turkana communities. The human population of Laikipia grew rapidly from 30,000 in the early 1960s to 518,560 in 2019[12]. This high rate of population growth is a consequence of influx of small holder farmers from the South and pastoralists from the north in response to availability of land and associated resources that occurred with the sub-division of white settlers' land after Kenya's independence[13].

According to NCPWD (2021) there were 550 people with disabilities in Laikipia County while in Baringo about 2% of the population (13,121 persons) was living with disabilities according to the 2019 Kenya Population Census. Baringo County has a poverty level of 60.3% while in Laikipia County it was 34% in 2019. According to Kenya Population Census 2019, the proportion of households in Lakipia County accessing safe drinking water, improved sanitation, and electricity was 65,1%, 82.1%, and 42.7%, respectively, compared to Baringo's 34.7%, 60.7%, and 28.7%, respectively.

4.3.2.2 Socio Economic and Livelihood Conditions

The greatest threat to the extensive area of contiguous natural habitat that exists in Laikipia County is land-use change, in particular the rapid expansion of smallholder farming and subsistence livestock production. There are several drivers of such land-use change mainly human population growth. On the Baringo County side of the water tower the main livelihood activities include pastoralism focused on cattle, goats, sheep and donkeys. Beekeeping and honey sales, and stone quarrying also constitute a major aspect of the local economy. These activities spread into the protected forest areas pushed by insecurity in some parts of the county.

[10] Taiti S. W., (1992): The vegetation of Laikipia district, Kenya; Laikipia-Mt Kenya papers, B-2 LRP. University. of Nairobi and Berne.
[11] Ibid.
[12] KNBS, 2019.
[13] GoK (2008): Mau Complex and Marmanet forests Environmental and economic contributions, Current state and trends: Brief notes compiled by the team that participated in the reconnaissance flight on 7 May 2008, in consultation with relevant government departments. 20 May 2008.

There are four principal land-use categories in Laikipia, namely commercial livestock ranching that favors wildlife or pro-wildlife properties, communal lands, transitional properties and forestry[14]. Crop farming, cattle-rearing on large commercial ranches and community owned rangelands have for many years been the livelihood of the communities neighbouring Marmanet forests. The livelihoods of the forest adjacent communities are highly dependent on the forest's products and services such as water, firewood, pole wood, charcoal, honey, medicinal herbs and grazing. The forest resources have enabled the adjacent communities to access low-cost housing over the years. However, prolonged forest dependence has led to environmental degradation.

4.3.3 Land Cover and Land Use

4.3.3.1 Land Cover

Derived land cover statistics for the water tower for the year 2010 indicate that the gazetted forest covers an area of 45,783 ha. A 5 km buffer created an area of 97,391 ha to make a total area of 143,174 ha for the gazetted forest and the buffer.

Within the gazetted forest, forestland covered an area of 17,528 ha (38%). However, cropland was the dominant land cover type with an area of 19,321 ha (42%). Other land cover types were grassland (15%) and wetlands (5%).

In the 5 km buffer, cropland dominated with an area of 73,378 ha (76%) followed by grassland with 14,945 ha (15%). Forestland occupied 8,487 ha (9%) of the buffer strip. These results illustrate the vulnerability of Marmanet Water Tower to human activities. The forests are degraded due to illegal settlements, logging and collection of other forest products required by local communities[15].

4.3.3.2 Land Use Change

There were changes in land cover between the period 1990 and 2010 within the forest boundary. During this period, forest cover decreased by 12,960 ha - from an area of 30,488 ha in 1990 to 17,528 ha in 2010, which is a 28% decrease. In the same period grassland, which had an area of 4,642 ha in 1990 increased to 6,981 ha in 2010. Cropland had an area of 10,652 ha in 1990 but in 2010, this area increased significantly to 19,321 ha. There were no settlements in the gazetted forest in 1990, but this changed in the year 2010 with 13 ha of forestland having been converted to settlements. There were also changes recorded in the area under wetlands in which 1,940 ha of wetland was observed in 2010 when there were none in 1990.The increase in areas under cropland and grassland categories were nearly equivalent to the decrease in forestland in the same period illustrating that the forestland was converted to cropland and grazing land by 2010.

In the 5 km buffer strip, there was an increase of forestland by 3,269 ha in the period 1990 – 2010 whereas the area under cropland decreased from 74,556 ha in 1990 to 73,378 ha in 2010. On the other hand, grassland decreased from 17,180 ha in 1990 to 14,945 in 2010. Settlement covered an area of 159 ha in 1990 but increased to 260 ha in the year 2010. This increase could be due to natural population growth and immigration of smallholder farmers from other areas in response to availability of land and associated resources near the forests. Wetlands were also detected, and they covered an area of 282 ha in 1990 which increased to 321 ha in 2010.

[14] Taiti S. W., (1992): The vegetation of Laikipia district, Kenya; Laikipia-Mt Kenya papers, B-2 LRP. University. of Nairobi and Berne.

[15] GoK (2008): Mau Complex and Marmanet forests Environmental and economic contributions, Current state and trends: Brief notes compiled by the team that participated in the reconnaissance flight on 7 May 2008, in consultation with relevant government departments. 20 May 2008.

4.4 Marsabit Landscape – Mount Marsabit

4.4.1 Bio-Physical Environment

4.4.1.1 Geographical Location

Mt Marsabit Water Tower falls within Saku sub-county in Marsabit County. It lies between latitude 2.26° and longitude 37.98° covering an area of 48,348 ha of which 15,701 ha is gazetted forest, and 32,647 ha is a buffer zone (Map 4-3). The mountain is part of Marsabit National Park and Reserve both of which extend beyond the Water Tower boundary covering an area of 155,000 ha (KWS, 2020). The Water Tower traverses twelve locations namely; Nagayo, Dakabaricha, Mountain, Jireme, Karare, Songa, Hulahula, Sagante, Qilta, Dirib Gombo, Jaldesa and Marsabit Game Reserve.

4.4.1.2 Topography

The Water Tower rises to an altitude of 1,865m above sea level. It is surrounded by extensive plains of semi-arid areas and deserts of Kaisut, Dida, Galgalu and Chalbi lying between 300-900 m above sea level[16]. It has two major crater lakes namely; Lake Paradise (Gof Sokorte Guda) and Marsabit Lodge Lake (Sokorte Dike). Other crater lakes include Gof Bongole and Gof Redo[17].

4.4.1.3 Geology and Soils

Mt. Marsabit Water Tower is composed of alkaline basaltic rock system that overlies the Precambrian basement rock complex at depth. These volcanic rocks are referred to as the Marsabit Shield and cover the entire mountain forming basaltic rapilli breccia volcanic ash cones and cinder cones inter-laid with extensive olivino basalt flows. These miorene-oliocene basalts unconformably overlie undifferentiated basement rock system at depth.

The soils at the mountain's slopes are deep clay loam in nature, originating from volcanic soils with good water retention. The Nitisols and Cambisols present are good for crop farming[18]. However, these soils are susceptible to erosion because of slopes and low vegetation cover. The Cambisols of Badassa area where Badassa dam is situated, are highly erodible. Ubiquitous rocks and boulders are the principal features in the plains with sands and intermittent stretches of gravel supporting bush and tree vegetation.

4.4.1.4 Climate

Mt. Marsabit Water Tower receives an annual rainfall of 600-1000 mm and an annual evaporation rate ranging between 1450-2200 mm[19,20]. The Water Tower records higher rainfall compared to the rest of the County due to its high elevation and dense mist forest. The lowest part of the County receives less than 200 mm of rainfall annually. The rainfall is bimodal with long rains experienced between March and May while short rains fall between October to December[21]. The wettest month is April while the driest months are August and September.

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[16] Henry, M., Min, S., John, K., & Gichuki, N. N. (2014). Role of Bryophytes and Tree Canopy in Mist Trapping in Mt. Marsabit Forest. Journal of Environment and Earth Science, 4(21), 128–139.

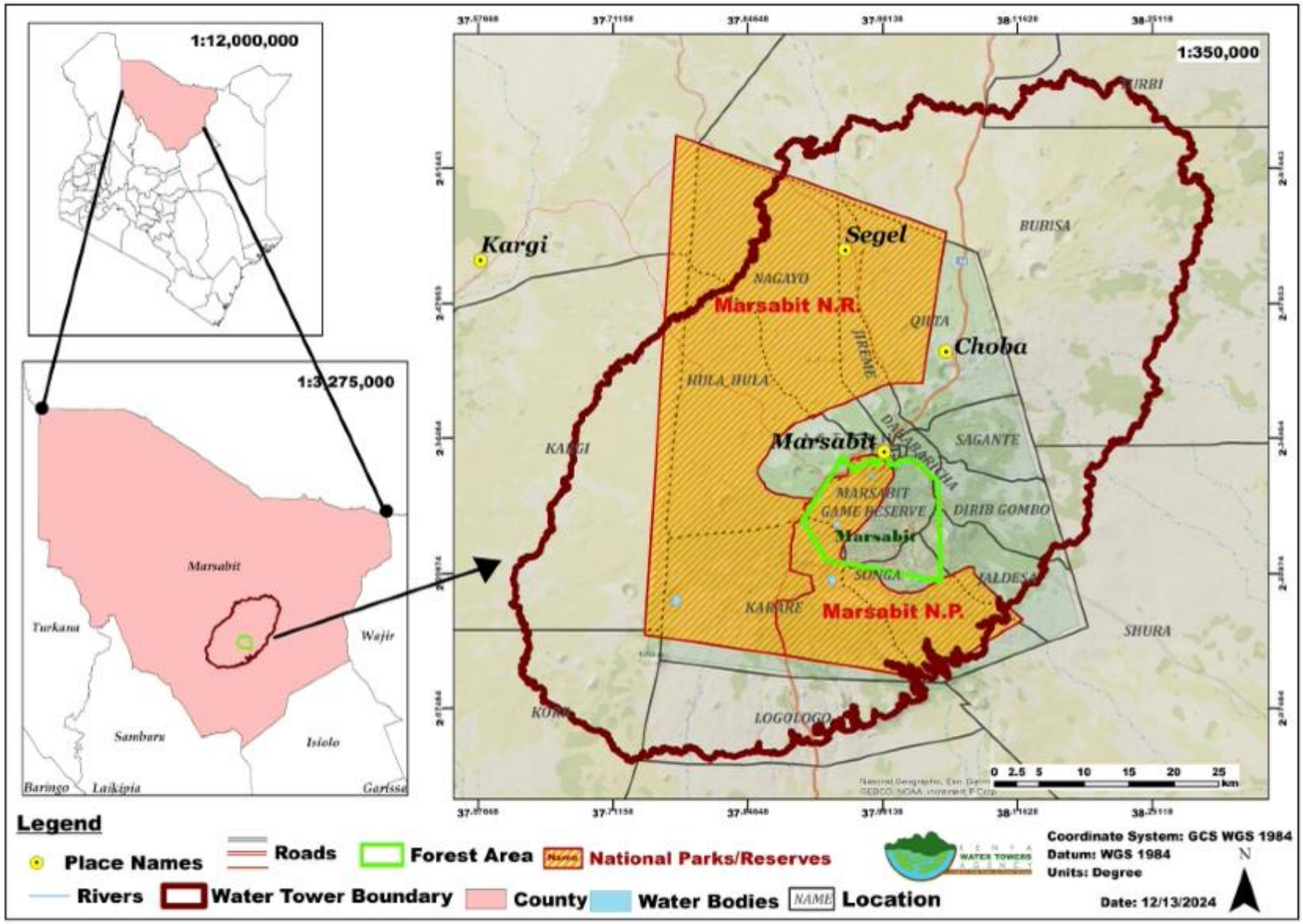
[17] Ngene, S., & Omondi, P. (2008). The costs of living with elephants in the areas adjacent to Marsabit National Park and Reserve. Pachyderm, 45(1), 77–87.

[18] Muhati, G., Olago, D., & Olaka, L. (2018). Participatory scenario development process in addressing potential impacts of anthropogenic activities on the ecosystem services of Mt. Marsabit forest, Kenya. Global Ecology and Conservation, 14.

[19] Kenya Wildlife Service. (2016). The Marsabit Forest Ecosystem Management Plan 2015-2025.

[20] Githae, E., Gachene, C., & Odee, D. (2011). Implication for in situ conservation of indigenous species with special reference to wild Coffea arabica l. population in Mount Marsabit forest, Kenya, 14, 715–722.

[21] Muhati, G., Olago, D., & Olaka, L. (2018). Participatory scenario development process in addressing potential impacts of anthropogenic activities on the ecosystem services of Mt. Marsabit forest, Kenya. Global Ecology and Conservation, 14.



Map 4-3 Mount Marsabit Water Tower Map

An average annual temperature in the area is 20.5°C with a mean maximum temperature of 26-28°C and a mean minimum temperature of 14-16°C. The hottest months are between December and February with temperatures rising to 35°C while the coldest months are March to July[22]. The high temperatures result in a high rate of evapo-transpiration hence occurrence of mist on the mountains throughout the year with day long occurrence in July and August. However, the intensity of mist is reducing due to the impact of climate change.

Most of the water tower is in the agro-ecological II (Forest Zone), IV (woodland zone), V (bushland zone)[23].

4.4.1.5 Hydrology

Mt. Marsabit Water Tower falls within the Ewaso Nyiro North Drainage Basin. Rivers flowing from the Water Tower are seasonal and the main ones include Bakuli, Laga Sangat, Danoro, Laga Segel, Lchuta, Borji and Hula Hula. These rivers drain into Ewaso Nyiro River which discharges its water into the Lorian Swamp. The minor rivers include Karsa simiti, Lbaalekona, Lturuya, Lekupe, Letipo, Lenaitamany, Lpus, Samachale, Kituruni, Midrock, Daraja deer, Namyori, Karantine, Lemarloo, Nambaa, Lbaa le Karare, Kula pesa, Nalakira, Ndonyo ekuiapure, Nalmalo and Nawasuubani.

The Water Tower has 39 springs of which 17 are permanent and 22 are seasonal. Bakuli is one of the major springs that serve Bakuli 1 and 2 dams. Bakuli 3 dam depends on rainfall run-off. These dams supply water to Marsabit town. Mt. Marsabit also has four crater lakes; Lake Paradise, Marsabit Lodge Lake, Lake Bongole and Gof Redo formed during volcanic eruption. These Lakes have neither an inlet nor outlet hence recharged during rainfall season. They however are major watering points for both wild animals, bird species and livestock.

The volume of water in the rivers, springs and crater lakes is reducing due to reduced rainfall, high evaporation rate, sedimentation and over-abstraction from shallow wells dug along it. For instance, during the dry season of 2009, Bakuli Spring recorded low flows to over 80% that significantly affected water supply to Marsabit town. The quality of the ground water sources is also poor due to the shallow water table that is prone to contamination by human activities[24]. In addition, Lake Paradise has also been infested by invasive Pistia statiotes (Nile cabbage).

4.4.1.6 Flora

Mt. Marsabit is categorized as tropical montane forest with five vegetation communities namely; cloud forest, dry upland forest, a discontinuous transitional forest, shrub land and wetland[25]. The evergreen to semi-deciduous bushland is found on the south-east slopes of the mountain. A total of 335 plant species belonging to 78 families have been recorded in this Water Tower[26].

The dominant tree species include Croton megalocarpus, Olea africana (Wild Olive), Strychnos henningsii (Red bitterberry), Rinora convallarioides (Heath violet-bush) and Euphorbia marsabitensis (Spurge), Cassipourea malosana (Onionwood), Podocarus gracilior (Weeping Podo), Olea capensis (Black Ironwood), Juniperus procera (Cedar), Strombosia scheffler, Diospyros abbyssinica (Giant diospyros), Olea hochstetteri (East African Olive), Abrus schimperi, Erythrococca fischeri, Brucea antidysenterica, Adenia schweinfurthii (Muhati et al., 2018a). It also hosts Osyris lanceolate (African Sandalwood) which is listed as an endangered species under the Wildlife Conservation and Management Act, 2013.

[22] Ibid.
[23] Marsabit County. (2012). Marsabit County Integrated Development Plan 2013-2017.
[24] Ibid.
[25] KWS. 2014. Wet Season Biodiversity Baseline Survey of Marsabit Forest Ecosystem. Northern Kenya Wildlife Conservation Project.
[26] Ibid.

Common shrubs in the area include Acacia spp. Techlea nobilis, Pyrathus sepialis, Bauhinia tomentosa and Rhinorea spp, Rytigynia neglecta, Psychotria kirti and Clausena anisata[27]. Herbs include Dorstenia brownii, Sanicula alata and Orthosiphon thymflorus (Abdillahi et al., n.d.). The major grass species are Oplismenus hirtelus and Schoenoxiphium lehmann. There is also presence of invasive species, Solanum seaforthianum and Lantana camara.

The Water Tower also support the growth of wild Coffea arabica. It occurs as forest undergrowth with a higher density occurring in the open patches where it competes with other shrubs. However, the population density of this species has reduced due to disturbance by livestock.

4.4.1.7 Fauna

The Water Tower is a habitat for diverse faunal species of which 14 are of large mammals, 26 small mammals, 6 amphibians, 14 reptiles, 171 birds and 199 invertebrates[28]. The common species found in this water tower are:

Table 4-4 Common Fauna Species Found in Mount Marsabit Water Tower

Large Mammals	African Elephants, African Buffalos, Grevy Zebras, Bush buck, Bush duiker, Gazelles, Guenters Dikdik, Oryx, Eland, Reticulated Giraffe, Black-backed Jackal, spotted hyena, Stripped Hyena, Common warthog, Olive baboons, Vervet monkeys, Sykes monkeys
Small Mammals	White toothed shrew, White tailed mongoose, Blotched genet Bats, Porcupine
Amphibians	Eastern olive toad, Reed toad
Reptiles	Uniform-scaled gecko, Tree gecko, Long-tailed lizard, North-east, African carpet viper, Brown house snake, Montane egg-eater snake
Birds	Ostrich, Egyptian Vulture (endangered), Hooded Vulture (endangered), White-backed Vulture (endangered), Bateleur (near threatened), Pallid Harrier (near threatened)

The African Elephant is listed as vulnerable species while Grevy zebra, Oryx and Greater Kudu as rare and endangered species in the IUCN Red List. It was also pointed out that the Black Rhino specie used to exist in Mt. Marsabit but is no longer there due to poaching and habitat disturbance. The last Black Rhino was spotted in this Water Tower in 2004. On avifauna, three birds are listed as Endangered species (Egyptian Vulture, Hooded Vulture and White-backed Vulture), two vulnerable (Martial Eagle and Somali Ostrich) and two are Near-threatened species (Bateleur and Pallid Harrier).

4.4.2 Degradation status

The degradation levels in this Water Tower are mainly categorized as medium covering an area of 39,823 (82%). This is due to influence of high percentage of forest cover in the gazetted forest, grassland in the buffer and the slope. Nine percent (4,499ha) is under high level of degradation while 3,990ha (8%) under low levels.

Analysis within the gazetted forest indicates that 11,540ha (74%) is under medium level of degradation and 3,324ha (21%) under low level. This is due to the high cover of indigenous forest and steep slope

[27] Ngene, S., & Omondi, P. (2008). The costs of living with elephants in the areas adjacent to Marsabit National Park and Reserve. Pachyderm, 45(1), 77–87.

[28] KWS. 2014. Wet Season Biodiversity Baseline Survey of Marsabit Forest Ecosystem. Northern Kenya Wildlife Conservation Project.

gradient. The area with high level of degradation was 796 ha is mainly at the Eastern side of the forest and is attributed to overgrazing, access roads and encroachment at the forest edges for farming.

Within the 5km buffer, the 3,703 ha is under high degradation level, 28,283 ha under medium level while 666 ha under low levels. This is attributed to the largest area being under grassland, minimal vegetation cover, farming, settlement and bare areas. Most of them are under high risk since they are within urban centers such as Marsabit town, Karare and Dirib Gombo.

4.4.3 Socioeconomic Environment

4.4.3.1 Population

According to the 2019 Kenya Population and Housing Census, Marsabit County had total population of 459,785 persons comprising of 243,548 males, 216,219 females and 18 intersex. The total number of households was 77,495 and an average household size of 5.8.

Marsabit Central/Saku Sub-County where Mount Marsabit is located had a total population of 78,167 persons in 15,849 households and an average household size of 4.9.

4.4.3.2 Socio economic Activities

Pastoralism is the main socio-economic activity in the Water Tower. Animals kept include cattle, goats, sheep mainly for meat and dairy, whereas donkeys and camels are for transportation purposes. However, their numbers are reducing due to pests and disease, frequent droughts, insecurity (raids and rustling), poor range management, poor animal husbandry practices, inefficient extension services and problems of ready market for the livestock. The water tower is an important dry season grazing area for livestock.

Few community members in the area have embraced crop farming to supplement their household's needs. About 2% of the population are engaged in cultivation of crops through small scale irrigation located in Songa and Kalacha while about 16 percent practice agro pastoralism (Marsabit County Government, 2016). Farming is mainly done on the slopes of Mt. Marsabit in the areas of Kituruni, Jaldesa, Songa and Badasa because of the favourable climatic and soil (Marsabit County Government and World Food Programme, 2015). Crops grown are maize, beans, sorghum, millet, wheat, sweet potatoes, teff, green grams, cow peas, kales, tomatoes and potatoes. Fruit trees include mangoes, avocados, oranges and pawpaw. The locals also plant Catha edulis (Miraa/Khat) which is sold locally.

Poultry keeping and business enterprises are other socio-economic activities practiced in the area mainly as adaptation to climate change impacts.

4.4.3.3 Ecosystem Services

Mt. Marsabit Water Tower played a critical role in the establishment and growth of Marsabit town. During the colonial time, a Burji farmer from Ethiopia assisted the local communities in embracing farming methods and establishing permanent settlements on the slopes of Mt. Marsabit. This led to the birth of Marsabit town, a major town along Isiolo-Moyale Road. This has provided community with the opportunity to engage in commercial activities and small-scale trade of livestock, as well as their products such as farm produce.

The Water Tower is an important dry season grazing area for livestock. It is also source of water for domestic, livestock and small-scale irrigation for the local communities. The main source of water for Marsabit town is Bakuli springs which is found within the forest. The spring flows into Bakuli dam 1 and 2 while Bakuli dam 3 depends on run-off during rainy seasons. Averagely, 600 m^3/day of water is produced against a water demand of 3,795m3/day (Marsabit County Water and Sanitation Services, 2016). To meet the household water demands, the locals have resorted to digging shallow wells around the Mountain. The

main ones include Aite, Ote 1 and 2 and Karsa wells[29]. In addition, pastoralists have also dug wells along riverbeds such as Lichuta to draw water for their livestock. Other water sources relied on are temporary pans and rock catchments.

Mt. Marsabit National Park has promoted tourism in the area. The Park is known as home for the King of Elephants named 'Ahmed'. The diverse wildlife population and crater lakes have also attracted local and international tourists to visit the Park. However, the only existing lodge within the reserve, Marsabit Lodge, is yet to be re-opened hence affecting tourism population.

The water tower has also provided employment opportunities to various community members. Community conservancies such as Songa, Jaldesa and Shurr were established and local rangers employed to help in wildlife conservation and management.

The local community relies on the Water Tower for timber, charcoal, firewood, building poles. and medicinal trees. The most preferred trees for various species include Wild Olive (Olea africana), Cordia africana, Croton megalocarpus, Umbrella thorn (Acacia tortilis), Strychnos henningsii, East Africa Sanadalwood (Osyris lanceolata), Grevillea robusta, 'Korkore', 'Losesiai', 'Lelei' and 'Watoqayaa'.

4.4.3.4 Land cover and land use

In Mt. Marsabit Water Tower, the dominant land cover as of 2019 was grassland comprising of wooded grassland covering an area of 21,640 (45%) and open grassland 9,178 ha (19%). The wooded grassland mainly characterized by Acacia sp. and was observed in the buffer zone and the Eastern section of the forest. Forestland covered an area of 12,400 ha (26%) followed by cropland at 4,180 ha (9%) while other land (built up and bare areas) at 820 ha (2%). The vegetative wetland and open water composed of springs, crater lakes, dams and water pans covered 77ha and 53ha respectively.

Within the gazetted forest, the dominant class is forestland covering 10,787 ha (69%) with indigenous tree species, followed by grassland at 4,017 ha (26%) and cropland at 788 ha. The presence of cropland is an indication of encroachment for farming especially along the forest edge. Open water covers an area of 43 ha and mainly comprises of the crater lakes (Lake Paradise and Sokorte-Elephant Pool), Bakuli 1,2 & 3 dams and pans. On the other hand, other land covers an area of 66 ha due to bare areas, access roads and built-up areas such as Rangers Camp and Marsabit Lodge.

Within the 5km buffer zone, the dominant land cover class is grassland with an area of 26,801ha (82%) supporting pastoralism activities in the area. It is followed by cropland at 3,393ha (10%) mainly in Marsabit, Dirib, Songa, Badassa, Dubgob, Manyatta Njilo, Leyia and Kukub Chiro Center then forestland at 1,612 (5%). Other land covered an area of 754 (2%) and was due to bare rocks and soils as well settlements. The main urban centers are Marsabit town, Songa, Karare, Hula hula and Dirib Gombo.

4.4.3.5 Threats

Mt. Marsabit Water Tower is faced by the following threats and challenges:

- **Climate change related impacts –** Mt. Marsabit Water Tower falls within the arid areas of Kenya with low amount of rainfall and high temperatures throughout the year. However, due to unpredictable climatic changes, the area experiences frequent and prolonged droughts leading to increased levels of evapo-transpiration reducing the soil moisture content. This has led to reduced density of mist on top of Mt. Marsabit which is critical in supporting ecosystem health of the Water Tower. The daily yield of major springs such as Bakuli reduces during dry season as compared to previous decades leading to water shortages. Additionally, Lake Paradise and Bongole are shrinking in size due to reduced amount rainfall and mist in the area. This phenomenon has also led to low

[29] impacts of anthropogenic activities on the ecosystem services of Mt. Marsabit forest, Kenya. Global Ecology and Conservation, 14.

crop production and death of livestock due to shortage of pasture thus affecting the economy of the Marsabit town and livelihoods. The resultant impact of unpredictable climatic variability has been encroachment into the forest for grazing.

- **Overgrazing and overstocking –** The pastoralism nature of the local communities encourages having many animals per household leading to overstocking. This in turn results to overgrazing especially during dry season. During the dry season of 2009, about 50,000 heads of livestock were taken into the forest in search of pasture and water. There is also extensive cutting of some tree species for livestock feeding and making of livestock watering troughs leading to loss of forest cover. In addition, overstocking and overgrazing has exacerbated the rate of soil erosion and sedimentation in the area interfering with the regeneration capacity of the forest.
- **Charcoal production and unsustainable firewood collection –** About 98% of Marsabit population is dependent on fuelwood as their source of energy. Recent statistics indicate that 759 households in Marsabit Central depend on charcoal for income and about 416 bags of charcoal bags are sold in Marsabit town daily (Oroda, 2011). On average, 130 people, mainly women go into the forest to collect firewood daily with each person collecting an average of 52 kg of firewood amounting to 6,760 kg per day (KWS 2014). Therefore, harvesting of firewood and charcoal in the water tower translates to a rate of 16,382 tons per year. This high demand for firewood has led to forest destruction resulting to reduced water volumes in rivers and springs, loss of biodiversity and change in rainfall patterns. The rate of forest destruction in the Water Tower is estimated at be 180 ha per year. However, restrictions are being put in place to allow only dry woods to be harvested. Based on the records from National Park gates, about 2,467,400 kg (KWS) (2,467.4 tonnes) of dry wood are collected from Marsabit Forest annually. The boundaries of the forest are, however, porous and thus more people would have collected firewood from the forest but do not pass through the gates.
- **Encroachment –** Increased population as well as adopting of sedentary lifestyle has led to increased demand of land for settlement and agriculture. Therefore, most of land around Mt. Marsabit is being converted to cropland and settlement. This has resulted to encroachment at the forest fringes especially on the Eastern and Southern section of the Water Tower. Also, increased settlement around the mountain has also led to increased concentration of livestock in the area leading them to encroach into the forest. The most affected areas include Mountain, Karare, Hula Hula, Dakabaricha, Marsabit Town, Songa, and Dirib Gombo. The Headquarter of Marsabit County has also expanded significantly while at the same time other urban centers have developed in areas around Mt. Marsabit. This has largely contributed to forest loss has, therefore, led to drying up of rivers and springs due to reduced precipitation and recharge of aquifers.
- **Human-wildlife conflicts –** There are also increased cases of human wildlife conflict due to the infringement of the wildlife habitats by human settlement and farmland. This has resulted to crop destruction, injury and death of people, livestock as well as wildlife and snake bites. These cases are exacerbated during dry season due to limited pasture and water. For example, there is movement of Elephants out of the forest during wet season while in dry season, as the elephants move back into forest, they encounter farmlands around the slopes which coincides with maturing of crops leading to their destruction. Hyenas also stray from the park and ends up attacking livestock in the surrounding homesteads. In addition, there issue of delayed compensation that has been attributed long compensation bureaucracy and increased claims that have surpassed the amount in the compensation fund. This has deterred conservation efforts in the Water Tower.
- **Increased demand for construction materials –** Shifting from traditional nomadic dwellings that only required to be established using sticks and branches to permanent construction structures such as modern houses and livestock enclosures has led to increased demands for building poles. Most of these materials are mainly sourced from the Mt. Marsabit Forest.

- **Inter-community conflict over resources –** Sedentary mode of life has led to grazing areas being converted to farmlands hence reducing the available land for grazing. This has stirred conflicts between the farmers and pastoralists which gets worse during dry season when resources are more limited. These has led to destruction of crops, water catchment areas, reduction of forest cover due to cutting down of trees and encroachment into the forest for grazing land.
- **Infrastructure development –** Infrastructure development such as construction of Bakuli and Badassa dams to supply water to Marsabit town and expansion of St. Joseph Primary School to cater for the increasing number of schools going children among others have led to massive vegetation clearance in the water tower impacting negatively on the ecosystem health and resilience.
- **Other threats and challenges**
    - Fire outbreaks during honey harvesting, killing of pests and land preparation
    - Broken down electric fence installed along the forest boundary leading to encroachment and uncontrolled utilization of forest resources.
    - Communities' reluctance to participate in conservation programs.
    - Lack of agreeable plans between authorities and communities on accessibility to forest resources.
    - Poaching of wildlife and indigenous trees such as Sandalwood.

4.5 Marsabit Landscape – Ndotos Mountain Ranges

4.5.1 Bio-Physical Environment

4.5.1.1 Geographical location

Ndotto's Ranges are located between latitudes 1.58° and 1.96° N and longitudes 31.34° and 37.00°E in the north-eastern region of Samburu County (Map 4-4). Ndotto's Forest Reserve covers an area of approximately 97,165ha[30] which is about 30% of the forest cover in the entire county. The forest is shared by 9 sub-locations namely: Loikumkum, Lodua Nguronit, Latakweny, Seren, Illaut, Lesirikan, Arsim and Nkare Narok. The forest reserve is dominated by indigenous trees which make the forest highly productive economically.

4.5.1.2 Climate and Hydrology

Ndoto water tower lies in the arid and semi-arid regions of Kenya located in the Northeast, far away from the ocean. The mountains lie between Mathew's ranges and Mt. Nyiro to the south and north respectively. They occupy Uaso Rongai, Ndoto, Latakeny and Arisimin areas. The mountains appear as two parallel ridges oriented in a North-South direction. The western ridge lies at a peak altitude of 2,238 m while that to the east is at 2,385 m above sea level. Compared to Mt Kulal and Nyiro, the terrain is less rugged and appears as rolling hills. The Ndoto sub catchment occupies an area of 448 km^2, which receives run-off from both the western and eastern hills. The other significant catchment lies to the north occupying an area of 257 km^2 and is drained by River Arisim. The other important rivers in the sub catchment include Baragoi in the west, Elba Eldebe in the South and Seran in the North.

Ndotto's area receives the second highest amount of rainfall compared to other water towers in the Ewaso North catchment. The mountains receive between 750 and 1250mm annually owing to the high altitude which also leads to cooler temperatures as compared to the lowlands. Rainfall is most concentrated between April and August, with storms of short duration and limited area. Annual evaporation is in the range 1000-3000 mm, i.e. three to five times that of annual precipitation. Long rains fall in the months of

[30] GOK. 2001. Excision from Western and Southwestern Mau Forest. Boundary Plan No. 175/387. Kenya Gazette. Republic of Kenya. Ministry of Lands, Nairobi

March to May while short rains occur during the months of October and November, sometimes extending to December.

Average minimum and maximum temperatures are 24°C and 33°C respectively. Ndottos' Ranges, like the other mountain ranges, is a source of springs which usually dry up a few kilometres downstream due to high evaporation and percolation rates. The yields from the springs vary from 10 cubic metres to more than 300 cubic metres per day. The annual flow for both the springs and rivers has been decreasing over the years due to deforestation and intensive use of water upstream[31]. Laggas are an alternative source of water during the wet season during which they provide large flow volumes due to the poor storage in the catchment basins. During the dry season, flows in the laggas are limited to the sub-surface. Other sources of water include dams and pans which get silted due to poor ground cover in the catchments.

4.5.1.3 Geology and Soils

The major rock systems of Ewaso Nyiro North catchment include superficial deposits, sedimentary and volcanic rocks and intrusive metamorphic rocks[32]. Sedimentary rocks are the most widespread and occupy about 55% of the area. Most of Samburu County is covered by Precambrian basement system rocks -mainly gneisses and granites (Shabaani et al., 1992). The area is stony and rocky which makes it prone to erosion by run-off (NEMA 2009). The soils consist of a complex of well drained, shallow to deep soils of varying texture.

At high altitudes, soils are undisturbed, with thick humus rich topsoil over deeply weathered rocks. The foot slopes have deep, well drained sandy loam soils in the upslope parts, merging towards sandy clay textures down slope. Foot slopes are subject to widespread gully erosion. The soils at the top of the foot slopes are predominantly of sandy clay loam texture.

4.5.1.4 Vegetation and biodiversity role

The vegetation in this catchment includes evergreen forest, bushland, shrubland and semi deciduous shrubland. There are also areas of perennial grassland that are maintained by fires. The evergreen forest is characterized by Juniperas procera, Podocarpus gracilor, Olea africana and Croton megalocarpus species where it occurs almost entirely within the gazetted forest area. Evergreen bushland primarily consists of secondary vegetation derived from burning of evergreen forest. Characteristic species of the evergreen shrubland include Juniperas procera, Olea Africana, Euclea divinorum, Rhus natalensis and Carissa edulis. Decrease in tree cover has allowed for an increase in perennial grass cover dominated by Themeda triandra and Digitaria scalarum. Themeda triandra is an indicator of periodic grass fires. The dominant shrubs in the evergreen shrubland include Euclea divinorum and Croton dichogamus.

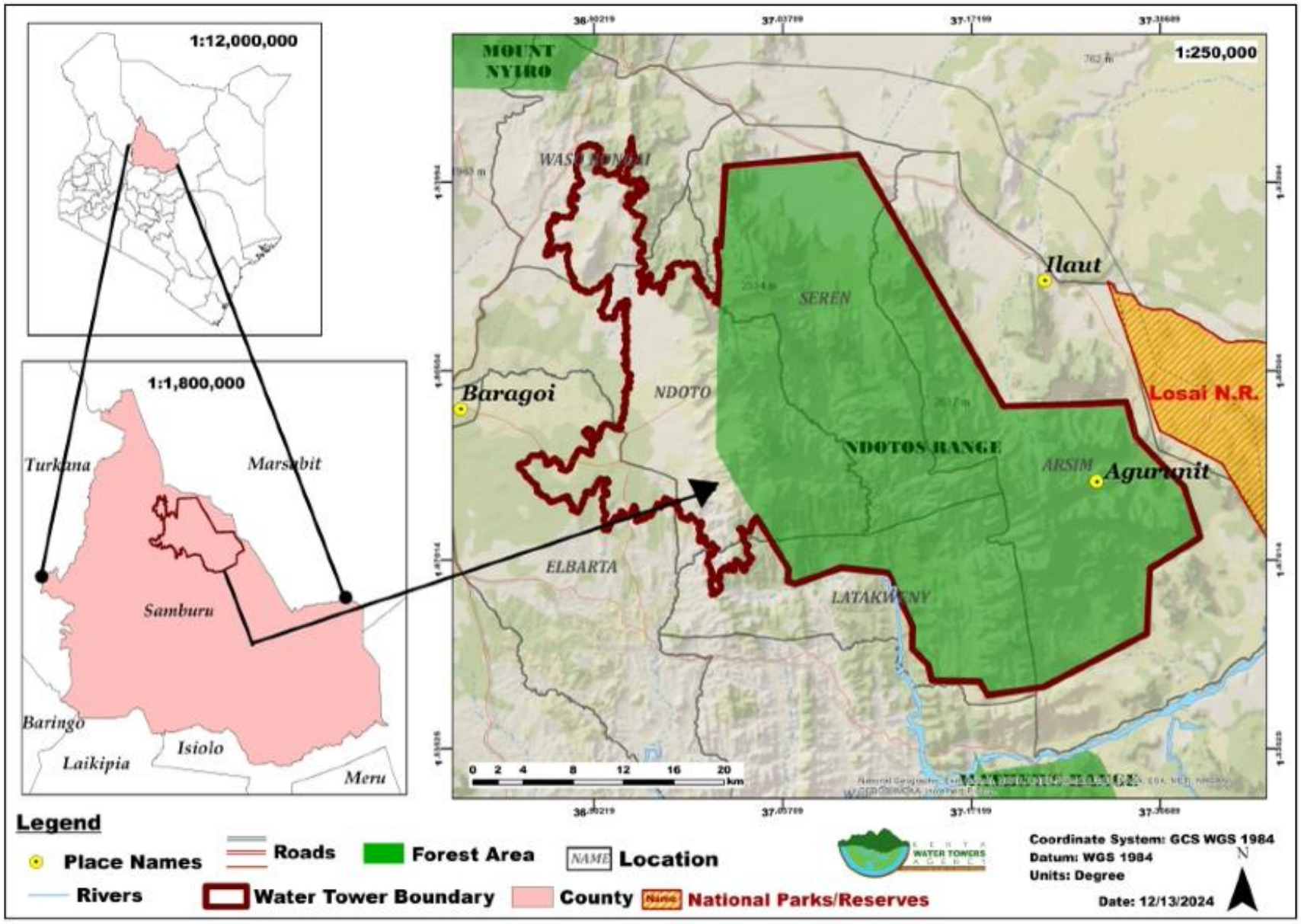
4.5.2 Socioeconomic Environment

4.5.2.1 Population

According to 2019 KPHC, the nine (9) sub-locations encompassing Ndottos had the following populations: Loikumkum – 5,769 persons; Lodua Nguronit – 3,920 persons; Latakweny – 2,384 persons; Seren – 1,466 persons; Illaut – 1,207 persons; Lesirikan – 3,563 persons; Arsim – 3,262 persons; and Nkare Narok – 3,289 persons. Totalling to 24,860 persons.

[31] Ibid.

[32] GOK. 2010. Climate Change Response Strategy. Ministry of Environment and Mineral Resources



Map 4-4 Ndotos Mountain Range Map

4.5.2.2 Socioeconomic and livelihood conditions

Subsistence pastoralism is the main land use activity around Ndotto's Ranges. The pastoralists keep livestock for milk and meat, and the donkey is reared for transport. Subsistence pastoralism in this area is nearly sedentary because of the high productivity owing to high elevation. The main constraints to animal production include diseases/pests, drought (inadequate water and forage during drought, and insecurity (raids and rustling)[33]. Pastoralists also experience problems of marketing of livestock. The long dry spells that characterize the county, affects the availability of water and forage. This leads to huge losses in terms of deaths of livestock. Agriculture is rapidly expanding around the hill forest to provide for the needs of the growing population.

4.5.3 Land cover within Ndotto's Range catchment

The land cover map for Ndotto's water tower shows that the gazetted forest covers an area of 92,819 ha. A 5km buffer created an area of 75,674 ha around the forest to makes a total of 168,493 ha for the forest and the buffer. Within the gazetted forest, forestland (areas covered by trees) comprised 25,216 ha (27%) of the gazetted forest). The rest of the vegetation comprised of grasslands i.e. 67,603 ha (73%).

By including the 5km buffer, the forestland increased to 27,343 ha indicating that some 2,127 ha of forest are found immediately outside the gazetted forest. However, grassland dominated in the 5km buffer area adding to 73,344 ha. This implies that 97% of the buffer area is covered by grasslands. Around the gazetted forest, there are about 197 ha of wetland.

The map reveals that the forested area is mainly restricted to the centre of the gazetted area. This implies that the forest is under exploitative pressures from human activities in the area particularly sedentary pastoralism which is prevalent in the area[34]. Several factors including distance from the forest, wealth and gender determine the extent of forest use by communities that live adjacent to forests. The long dry spells that characterize the area affects the availability of water and forage thus making the pastoralists to seek livestock fodder from within the forest. Agriculture is rapidly expanding around the hill forest to provide for the needs of the growing population.

4.6 Nyambene Hills

4.6.1 Bio-Physical Environment

4.6.1.1 Geographical Location

Nyambene Hills is one of the major water towers in the Tana and Ewaso Nyiro River drainage basin. It is in Meru County and lies within four sub-counties: Tigania Central, Tigania East, Tigania West and Igembe Central, covering the following locations; Akachiu, Amugaa, Ankamia, Antuanduru, Antubeiga, Antubochiu, Athi, Athirugaiti, Buuri, Kabuline, Kangeta, Kanthiari, Kanuni, Karama, Kiandiu, Kiegoi, Kiengu, Kiguchwa, Kiguru, Kitheo, Kithetu, Luluma, Maua, Mikinduri East, Mikinduri West, Muciimukuru, Mukululu, Muringene, Muthara, Ncooro, Nduguto, Njia, Nkinyanga and Thangatha. It lies between latitude 0° 09' and 0° 15' North and longitude 37° 52' and 37° 54' East (Map 4-5). The gazetted forest area is 5,427 ha while the 5km buffer zone covers 24,886 ha. The total water tower area is 30,313 ha.

4.6.1.2 Topography

The topography of the Water Tower is dominated by the great Nyambene range, which creates diverse physical landscapes. The Nyambene range is elongated from the Southeast to the Northeast and rises sharply above the surrounding plateau. The peak of this forest stands at an elevation of 2,528m above sea

[33] Chabari, F. and Njiru, G. (1991). Livestock marketing, in Range Management Handbook of Kenya, Volume II-1.
[34] GOK. 2010. Climate Change Response Strategy. Ministry of Environment and Mineral Resources

level. The slopes are very steep and rocky especially to the eastern side, but the crests are much lower to about 1000m above sea level.

4.6.1.3 Geology and Soils

The geology of Nyambene Hills Water Tower is influenced by volcanic activity. This consists of basic and intermediate rocks including phonolites, trachytes, basalts, kenytes syenites and pyroclastic rocks.

According to Kenya Soil Survey (1982), 17 of the 21 soil categories identified in Kenya were found in Meru County. Nyambene lavas and basalts give rise to clay soils whereas the basement system granites and gneisses, usually of high quartz content yield sandy soils. This difference has been intensified by climatic contrasts.

The lowlands are endowed with less fertile bedrock. They receive less rainfall that impact negatively on the decomposition of the parent material.

The highland (Forestland) has well developed soil horizons. These are rich in organic matter making them ideal for agriculture. The main soil groups are Nitisols, Cambisols and Vertisols.

4.6.1.4 Climate

Altitude largely determines the climate of Nyambene Hills Water Tower, with a strong effect of the mountainous landscape. The highlands reduce the effect of high temperature and the rate of evaporation.

The temperatures range from cool-humid to hot and dry recording an annual mean of 24.7°C for low altitudes on the Eastern side, to 13.7°C for the high altitudes on the Western slopes of the Nyambene ranges.

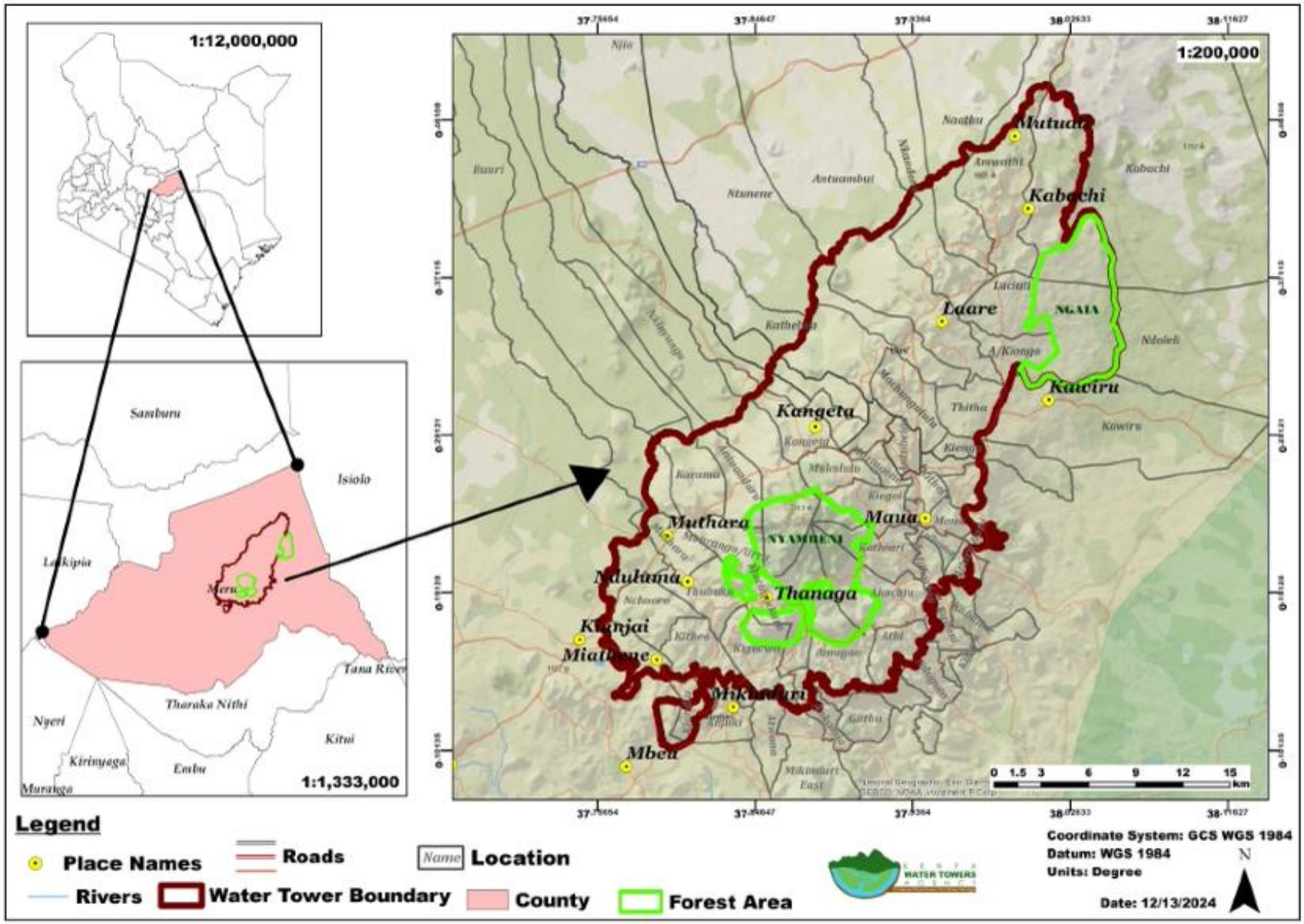
The rainfall pattern is bimodal with long rains coming between March and May, and the short rains from October to December. Rainfall ranges from 1250 mm – 2514 mm on the Eastern and Southern slopes of the Nyambene range, to 380 mm – 1000 mm annually in the leeward side.

4.6.1.5 Hydrology

Rivers

Nyambene Hills Water Tower falls within the Tana and Ewaso Nyiro drainage basins which drain into Indian Ocean and Lorian Swamp respectively. Rivers originating from the Southern and Northeastern side of hill drain into Tana River basin while those on the Northwestern side drain into Ewaso Nyiro basin. The main rivers from the Water Tower flowing into Tana River include Ura, Tananthu, Bwathonaro and Thangatha while to Ewaso Nyiro are Likiundi and Liliaba. The minor rivers within the Water Tower are Bwathumara, Liutu, Ciamatha, Kangamwithu, Thanga, Kiooluu, Kathambanyaru, Kiaana, Kiachuua, Makeni Mboone, Inono, Nchui, Tamani, Wasomara, Itundu, Itunantu, Kalibuiri, Murobumba, Mukongora, Kathima, Bisanadi, Runjirweru, Thiiti among others.

Rivers from this Water Tower provide water for domestic, irrigation and industrial use. For instance, along Ura River there are four (4) dams where 3 are operational and one is under construction to supply water to Igembe South, Central and North sub-counties. Thangatha dam is also being constructed at Thangatha River to supply water to urban centers around Nyambene Hills. The Tana and Ewaso Nyiro flows through the semi-arid and arid areas of the country supporting the livelihood in these areas. Tana River also supports the Tana Delta ecosystem which is earmarked as Ramsar site and home for various endemic and critically endangered species such as Malindi Pipit, the Basra Reed Warbler, Tana River Red Colobus and Tana Crested Mangabey. It is also an Important Bird Area (IBA), used as breeding site, source of fish and tourism. Ewaso Nyiro drain into Lorian Swamp which is the largest swamp in the arid areas of the country.



Map 4-5 Nyambene Hills Water Tower Map

These rivers have experienced significant change over the past few years, specifically reduction in the river flow volume due to illegal and over abstraction of water. During extended dry spells some of the rivers completely dry up. Additionally, river pollution has increased as result of increased runoff across agricultural farmlands where the waters are contaminated with farm inputs. There is also an increase in encroachment of riparian areas because of agriculture expansion. This has led to degradation of wetlands and riverbanks through erosion hence increasing turbidity levels.

Critical Water Catchment Areas

Springs and swamps mapped in Nyambene Hills Water Tower are 237 and 5 respectively. Out of 237 springs, 169 are within the Tana River Basin and 68 in Ewaso Nyiro River Basin. Springs at the Southern and Northeastern side of the hills recharge the Tana River basin while at the Northwestern side recharge Ewaso Nyiro basin.

Most springs are permanent and within the gazetted forest. The volume of water in these springs is reducing due to illegal and over abstraction, encroachment for settlement and agriculture, arrow root farming inside the spring, illegal logging, planting of exotic trees mainly Eucalyptus, landslides, siltation, livestock trotting and grazing.

4.6.1.6 Flora

Nyambene Hills Water Tower is endowed with both indigenous trees and exotic plantations. Over 35 plant species belonging to 16 genera in 10 families are found in this Water Tower.

There are at least 10 endemic plant species[35]. The common tree species include Acacia spp., Eucalyptus spp, Cupressus lucitanica, Cordia abyssinica, Vitex keniensis, Cordia africana, Prunus africana, Trichelea emetica, Grevillia robusta and Commiphora siniensis.

Majority of stakeholders reported an increase in demand for high economic value trees species for income generation. Indigenous tree species are also over harvested. This has led to some species becoming rare such as: Bridelia micrantha (Mukwegwe), Cinnamomum camphora, Ocotea usambarensis (Kiuta), Chlorophora vexcelsa (Miuri), Vitex keniensis (Muiru), Newtonia buchananii (Mukui), Trichilia emetica (Mutuati), Syzyguim guineense (Muriru), Polysciasfulva (Mukuurukuru), Ficus thonningii (Mikuu), Cordia africana (Muringa), and Olea capensis (Mucharage).

4.6.1.7 Fauna

The fauna found in this Water Tower are baboon, antelope, hare, velvet monkey, colobus monkey, dikdik, snakes, chameleon, tortoise and a variety of rodents. The forest is also home to many endemic and migratory bird species. The diverse faunal composition in the Water Tower gives it high potential for ecotourism. However, the wildlife is under threat because of encroachment of habitats and migratory corridors, illegal logging and hunting for bushmeat.

There have also been human-wildlife conflicts ranging from destruction of crops and property, injuries and loss of life and livestock depredation since the local communities feel that they do not benefit from the wildlife.

4.6.1.8 Ecosystem Services

Water tower ecosystem functions support the provision of goods and services to humans. Nyambene Hills Water Tower plays a critical role in improving the livelihood of the local communities through provision of direct benefits from the forest resources such as source of water, timber, fuelwood, and fodder for livestock, food like honey and fruits and herbal medicine. Other indirect services include:

[35] Nyambene forest management plan, 2011

- Climate control i.e. carbon sequestration;
- Pollution control;
- Soil protection and formation e.g. erosion control, etc;
- Nutrients cycling;
- Biodiversity protection;
- Water regulation and supply; and
- Recreation.

4.6.2 Socioeconomic Environment

Majority of the inhabitants have owned land passed down from one generation to the next through inheritance. This has led to fragmentation of land due to increased population. Additionally, there has been an influx of people from other areas buying land within the Water Tower.

The major economic activity practiced within the Water Tower is agriculture. Crops grown include maize and potatoes while the cash crops include tea, coffee, banana, macadamia, yams, arrowroots and miraa. 'Miraa' (khat) farming is the major cash crop in the Nyambene hills. Other economic activities undertaken in the farms include livestock farming, poultry farming, bee keeping (small scale) and small-scale business enterprises.

The local community also practice agroforestry to produce household fuelwood, construction materials and fruit trees for sale. This practice has assisted in combating climate change, reducing the impact of soil erosion within the farms as well as playing a critical role in recycling of soil nutrients.

4.6.2.1 Population

According to KNBS, the four sub-counties had a total population of 538,652 in 2019: Tigania Central – 104,730 persons; Tigania East – 72,549 persons; Tigania West – 139,961 persons; and Igembe Central 221,412 persons.

The average population density in this Water Tower was 325 persons per km^2. Urban areas like Maua town, had a population of 22,121 persons. Such areas are normally small with high level of urbanization, economically specialized population drawing on rural resources outside the area.

4.6.2.2 Land cover and land use

The dominant landcover in entire of Nyambene Hills Water Tower is cropland which covers a total area of 13,664 ha (45%) followed by forestland 8,216 ha (27%) then grassland 7,666 ha (25%). Other land which includes built-up and bare areas covered 3% of the Water Tower mainly due to landslides and major towns such as Nduluma, Kangeta, Maua and Mikinduri.

Within the gazetted forest, the area covered by forestland is 5,012 ha (92%) while cropland 313 ha (6%). Cropland composed the perennial crops mainly tea plantation with an area of 71ha and annual crops covering an area of 242 ha thus an indication of encroachment into the forest. Area with tea plantation was under Nyayo Tea Zone to create tea belt around the forest boundary. Grassland covered an area of 96 ha and is mainly found in areas that have been cleared to pave way for tea belt. Other land covered an area of 4 ha including areas that had been left bare by landslides.

Within the 5km buffer, cropland covered the largest area with 13,351 ha (54%) while grassland 7,570 ha (30%) and forestland 3,205 ha (13%). Other land which is composed of built up and bare areas covered 758 ha (3%). Cropland composed of Tea and Miraa plantations which covered an area of 1,831 ha mainly found in Buurieruri, Kanjoo, Kiguchwa, Miciimikurur, Athi and Amugaa. During the assessment, it was noted that

the community living around Nyambene hills practice intercropping of Macadamia, Miraa, Grevilia and Bougainvillea trees with other crops such as maize, beans, vegetables and tea[36].

4.6.2.3 Degradation Levels

Degradation level in Nyambene Hills Water Tower was categorized as medium. This is attributed to high percentage of dense forest cover in the Water Tower. Analysis within the gazetted forest showed that the medium level of degradation is mainly at the Northern section of the forest due to high slope and moderate forest. The high level of degradation in the Water Tower covered an area of 7,858 ha (26%) in 2018. The gazetted area had 1% under high level of degradation. Most of these degraded areas are where excavation for constructions works for Thangatha and Ura-4 dams are taking place and where landslides mainly occurred in Karama, Buuririeruru and Kanjoo due to heavy rainfall in 2017. These areas also have high slopes and loose volcanic soils. The Northern section with the 5km buffer is highly degraded and this is mainly caused by farming activities on steep slopes. These areas include Karama, Liliaba, Maua, Kiguchwa, Kanjoo and Buurieruri.

4.6.2.4 Threats and Challenges facing the Water Tower

The following are the main threats and challenges facing Nyambene Hills Mau Water Tower:

- **Over-abstraction and illegal abstraction of water –** Demand for water for domestic, irrigation and industrial use has led to over-abstraction and illegal abstraction of water in the rivers and springs. This has led to reduced volume of water and drying up of springs during dry season hence affecting available water downstream. Affected rivers include Liliaba, Likiundi, Thangatha and Ura.
- **Illegal logging and over-harvesting of timber products –** Increased demand for timber from indigenous trees has led to illegal logging activities in this Water Tower. The situation was aggravated by corrupt law enforcement system. Illegal logging causes changes in the forest because of felling of large trees for timber and charcoal. The structure changes to a more broken-canopy formation, often with a much heavier liana-load on the remaining tall trees, and the humidity of the understory decreases because of opening the canopy. The plant species composition shifts in favor of colonizers, which proliferate in forest openings. These species do not have a well root system to hold soil together. The soil becomes loose and more susceptible to landslides as it was noted in this Water Tower. Some trees of special commercial importance have reduced in numbers that their populations may no longer be viable. For example, Vitex keniensis (Meru oak) and Olea capensis (Cape olive).
- **Soil erosion and landslides –** Minimal vegetation cover, forest fires, encroachment and poor agricultural practices has contributed to lose soil in the area leading to soil erosion and landslides during heavy rains. This was mainly witnessed in Kabota and Thiani. Landslides has contributed to reduction of forest cover as trees are uprooted and carried downstream leaving the affected area bare and exposed to agents of soil erosion.
- **Encroachment –** Increased human population in the area has led to a higher demand for agricultural land. Agriculture is the main economic activity for communities living here. When forest is cleared for agricultural purposes, the vegetation is cut and burned leaving no opportunity for forest species to survive and very little option for recolonization of the land by forest ecosystems.
- **Unsustainable mining activities –** Some local communities adopted stone quarrying as a means of livelihood. This happened along riverbeds mainly in Likiundu River and resulted to massive degradation of land and increased soil erosion. This was however banned in 2000. Strengthening the Community Forest Association and Water resources Users Association through capacity

[36] KWTA. 2020. Nyambene Hills Water Tower Status Report.

building such as promotion of bee keeping, development of ecosystem management plans and incentive in protecting and management of the Water Tower.

- **Overgrazing –** During the dry seasons, local communities move into the forest in search for pasture for their livestock. This has led to reduction of forest undergrowth, leaving the ground bare and exposed to soil erosion. During heavy rains, these bare areas were exposed to landslides, which further reduce the forest cover.

4.7 Shimba Hills

4.7.1 Bio-Physical Environment

4.7.1.1 Geographical Location

Shimba Hills Water Tower is about 33 km South of Mombasa City. It is one of the largest coastal lowland forests in East Africa located in Matuga and Kinango sub-Counties of Kwale County (Map 4-6). The size of the Water Tower is 91,078 ha, consisting, inter alia, a National Reserve (19,000 ha), Mwaluganje Elephant Sanctuary (1,676 ha) and two forest blocks (Mkongani North (1,159 ha) and Mkongani West (1,401 ha). It stands at an altitudinal range of 100m - 462m above sea level.

4.7.1.2 Climate

The climate in Shimba Hills Water Tower is hot and humid. The rainfall pattern is bimodal with long rains falling between April-July and short rains in October-November. Average rainfall on the Eastern (windward) side of the hills is 1,150 mm but less than 500 mm for the leeward western side. The hills receive a higher amount of rainfall (10-20%) compared to the lowlands.

The temperature in the area ranges between 19-36°C, with the coolest months being July and August and February the hottest.

4.7.1.3 Hydrology

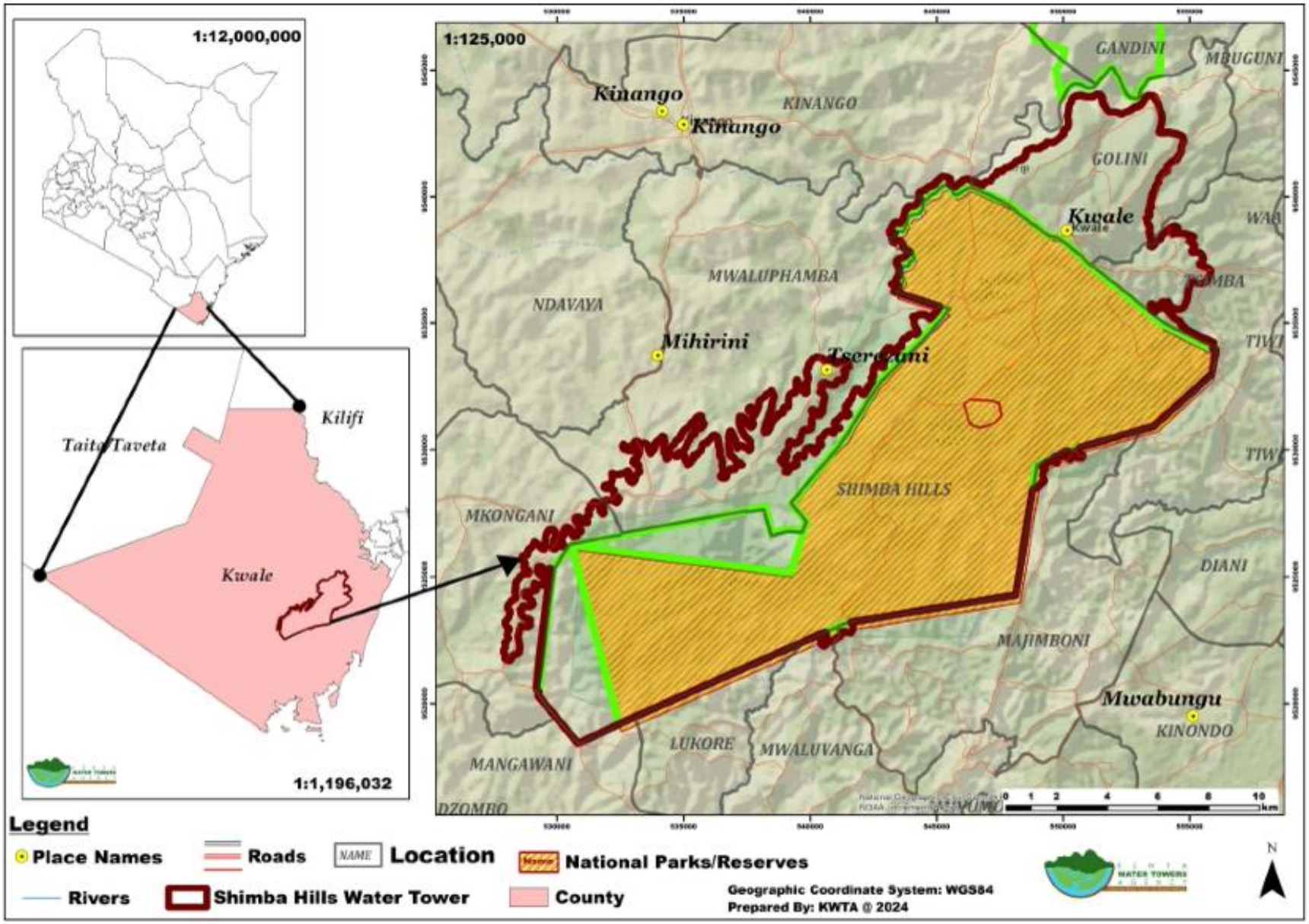
Shimba Hills Water Tower plays a key role in providing water in the coastal region as it is a source of four permanent rivers that supply water to Mombasa, Kwale and parts of Kilifi Counties. These are rivers Marere, Mukurumudzi, Manjera and Ramisi. However, these rivers have experienced significant changes in the river flow volume, increased siltation, and increased turbidity, changes in river courses, flooding downstream and drying up of some rivers (rivers/streams becoming seasonal). These changes are linked to human induced forest cover change attributed to illegal logging, conversion of forest area to crop land, encroachment of both forest area and riparian areas.

The Water Tower is endowed with several springs found within private lands, public land and the protected zones. Major dams within the region are Mkanda and Base Titanium.

4.7.1.4 Flora

Shimba hills have high plant diversity as they hold more than half of Kenya's rare trees. According to Luke 2005, a total of 1,396 plants that are indigenous or are considered naturalized are found within Shimba hills. As well, exotic crop and ornamental plants have also been recorded which in total represent 44% of the coastal flora (34 % of the K7 area of FTEA) and 21% of the current estimate for Kenya's flora of 6500 species.

These plant records are distributed amongst 143 families and 686 genera. The Water Tower has a heterogeneous mosaic of vegetation, including grassland, scrub and exotic plantations. The major forest types include tall Milicia forest on the deep soils on the plateau top (in Longomwagandi and Makadara forests, and near Kwale town), and on the western escarpment Afzelia Erythophoeum forest, covering much of the Eastern and Southern escarpment; Paramacrolobium forest on steep scarp slopes to both East and Mkongani West; and Manilkara-Combretum forest in the lower, Western sector of the plateau.



Map 4-6 Shimba Hills Water Tower Map

The biggest single patch of forest is the South-Western sector, including Mkongani North and West. Further East and North, the forest breaks up into a complex mosaic interspersed with scrub and grassland. Very few forest patches are entirely isolated from each other.

At-least two Kayas, Kwale and Longomwagandi, are located within the National Reserve. A fenced elephant corridor connects the Shimba hills with Mwaluganji Forest Reserve/Mwalungaje Elephant Sanctuary to the North.

4.7.1.5 Fauna

Shimba Hills Water Tower has a high density of wildlife population that include three of the big five i.e., elephant (*Loxodanta africana*), buffalo (*Syncerus caffer)* and leopard (*Panthera pardus*).

The other common include bushbuck, monkey, baboon and small mammals such as elephant shrew (*Rhynchocyon petersi*), Bushy-tailed mongoose (*Bdeogale crassicauda*) and bush pig (*Potamochoerus larvatus*). The ecosystem also boasts of Kenya's only population of the Sable antelope (*Hippotragus niger*) whose numbers were dwindling.

Mammalian species that have disappeared from the Water Tower include Lion (*Panthera leo*), Black rhino (*Diceros bicornis*) and Cheetah (*Acinonyx jubatus*) owing to poaching, change of habitat, and un-availability of prey.

The Water Tower is rich in avifauna with a record of 111 bird species, out of which 22 are endemic to the coastal region among them are: Ostrich Eagle, African Hawk; Falcon, Cuckoo; Guineafowl, Kenya Crested; Honey guide, Greater; Hornbill, Crowned; Quail, Blue; Sunbird, Uluguru. Other bird species of concern included Southern Banded Snake Eagle, Fishers Turacco, Spotted ground thrush, Sokoke Pipit, East coast Akalat and Plain Backed Sunbird. Other bird species include Red-necked Spurfowl, Croaking Cisticola and Zanzibar Red Bishop.

Shimba Hills Water Tower serve as a migratory route for Palearctic migrants such as Cuculus canorus and Oriolus oriolus in the months of March and April. The grasslands hold localized species such as Francolinus afer, Cisticola natalensis and Euplectes nigroventris. Regionally threatened species include Hieraaetus ayresii; Stephanoaetus coronatus; Erythrocercus holochlorus; Pitta angolensis; and Anthreptes neglectus (BirdLife International (2019).

Reptile species like the Green Keel-bellied Lizard (*Gastropholis prasina*) are found in the Water Tower. Amphibians' species include coastal endemics such as Bunty's Dwarf Toad (*Mertensophryne micrannotis*), range-restricted *Caecilian Boulengurula* Forest banana frog (*Afrixalus sylvaticus*) and *Hyperolius rubrovermiculatus*. The latter two species are in also listed as endangered by IUCN.

Shimba Hills is rich in butterfly species with over 295 species recorded. Key species include the rare *Acraea aubyni* and *Neptis rogersi*, and the endemic *Charaxes acuminatus shimbaensis*.

Butterflies swarm after the rains in April/ May each year.

4.7.2 Socioeconomic Environment

4.7.2.1 Population

The total population of Matuga and Kinango sub-counties in 2019 was 194,252 and 94,220 persons respectively. Dzombo location has the highest number of persons (44,983), while Shimba hills has the least (1,802 persons).

The main ethnic communities are the Digo and Duruma who belong to the Mijikenda ethnic group of Coastal Kenya region.

4.7.2.2 Socio-economic Activities

The communities living in Shimba Hills Water Tower include Digo, Duruma and Kamba. Most of households have acquired land through inheritance and buying from others. The average landholding size is 2-4 acres per household and few households own more than 15 acres. The people in the dry low-lying villages often move into the upper region (buffer zone of the forest) during the dry season to grow crops.

The main economic activity is crop production for both domestic consumption and income generation (accounted for 80.6% of the total household income). Major cash crops grown include bixa, mangoes, oranges, passion fruits, pawpaw, hot pepper. Food crops include maize, cow peas, beans, vegetables, cassava and sweet potatoes. Livestock farming is also practiced where they keep cattle, goat and sheep. Poor agronomic practices because of limited skills and knowledge on crop and livestock husbandry coupled with poor rainfall have led to continued low productivity. It is also noted that there is limited uptake of suitable technologies and innovations due to inadequate agricultural extension services.

Agroforestry is commonly practiced. Tree species planted include *bixa, Arborea, eucalyptus, Afzelia quenzensis (Mbambakofi), Grevilia robusta and Milicia excelsa (Mvule).* The tree seedlings are either sourced from the forest (self-collection) or purchased from KFS, CBOs and self-help groups.

4.7.2.3 Ecosystem Services and Values

The communities within the Water Tower have access to both Non-Wood Forest Products (NWFPs) and Wood Forest Products (WFPs). This includes wood for fuel and charcoal, poles and timber for construction purposes. Over 90% of fuel used by households is in the form of charcoal and firewood sourced from gazetted forests and private farms. A few uses kerosene and gas sourced from major towns such as Kwale, Kinango, Tiribe, Shimba and Ukunda. The ecosystem also facilitates ecotourism activities through nature walks, scenic attraction, game drives, birds and butterfly watching.

The Water Tower also provides ecological functions such as carbon storage, nutrient cycling, wate and air purification, and maintenance of wildlife habitat. There are social and cultural benefits such as recreation, traditional resource uses. The Kaya forests within the Water Tower have spiritual significance to the Mijikenda people.

4.7.2.4 Land Cover Land Use Classification

The major land cover in the gazetted forest area is forest (82%), followed by cropland (10%) and the least is open water and other land. The presence of cropland and absence of other land in the forest is an indication of encroachment mainly for agriculture.

Within the buffer area, the major Land cover is cropland (55%), and the least is other land at less than 1%. Cropland covers both annual and perennial crops. The common crops grown are coconut and cashew nuts for commercial utilization and maize, beans, cassava, bananas and vegetables for subsistence use. There is adequate vegetation cover along riverine areas with a few sections covered with banana plants.

4.7.2.5 Degradation status

Assessment of degradation levels indicated that a 37% (34,247 ha) of the Water Tower face high level of degradation, while 39 % (35,726 ha) faces low level of degradation. The areas classified with high levels of degradation recorded over 40% slope and less than 60% vegetation cover. These are found outside the protected areas within the Water Tower mainly on the Western, Northern and Eastern locations. This should therefore be prioritized for rehabilitation.

4.7.2.6 Threats and Challenges

- **Illegal logging –** This is driven by high dependence and preference of timber as a building material. Commercial exploitation is driven by ready market is available in Ukunda. The targeted species include *Milicia excels, Combretum schumannii* and *Afzelia quanzensis* where ready. This threat is common in unfenced areas of the forest.
- **Human wildlife conflict –** A section of the Reserve has been fenced to keep off wildlife from settled areas. However, cases of human wildlife conflicts involving elephant and baboons are often reported. This is common during the dry season when food resources within the protected area become limiting forcing the animals to move in search for food.
- **Poverty –** Poverty has occasioned many threats facing Shimba Hills Water Tower. This is exacerbated by a rapidly growing population which directly depends on the diminishing resources within the Water Tower to sustain livelihoods. There is continuous conversion of forest land into farmlands for subsistence farming to feed the growing population.
- **Low literacy level –** Community members have low access to education, which is attributed to lack of adequate facilities, cultural practices (preference to educating boys) and poverty. This contributes to low levels of awareness and technical knowledge on sustainable conservation of the Water Tower and income diversification.
- **Charcoal production –** There is high dependence on charcoal and firewood for fuel. High level of poverty and limited household income avenues has pressed the community to sell charcoal for income. This is common in Kinango area.
- **Unsustainable farming practices –** Rain-fed agriculture is commonly practiced in the Water Tower. This is however unsustainable on the drier areas where rainfall is unreliable hence threatening food security. Poor farming practices such as cultivation along the contours increases chances of soil erosion which eventually develops into gullies.
- **Soil erosion –** This threat is common on the Northern section of the Water Tower. The vegetation cover is very low exposing the soil to erosion by wind or water. This reduces soil fertility as topsoil is washed away. The deposition of the soil in the rivers also lowers water quality and causes sedimentation on dams and pans reducing their capacity.

4.8 Guidelines for Developing Baselines for Subprojects

Developing baselines [Environmental and Social Baseline Studies (ESBS)] for KEWASIP subprojects is vital in predicting and evaluating potential environmental and social risks and impacts prior to any implementation. The baseline shall help understand existing environmental and social conditions thus defining the focus of the environmental and impact analysis and resources that need protection through appropriate and viable mitigation measures. Several national regulations and international environmental policies and multilateral lending agencies guidelines require description of existing environment that might be affected by potential project implementation. Once specific subproject locations are known, the below guidelines should be followed to understand the baseline environmental and social conditions prior to implementation:

4.8.1 Scoping

The early ESBS process should start with a scoping exercise (by a multi-disciplinary team) for key environmental issues to define (a) the key environmental and social factors; (b) baselines for the key factors; and (c) project alternatives, including “no project” option. Inputs from consultations with NEMA, are also incorporated in the final scoping document. Based on the valued ecosystem components, the ESBS scope should cover, but not limited to the following: Climatic conditions; Drainage and water resources; Soils; Flora; Faunal studies; Water and Air quality issues; Noise quality; Land use and tenure systems; and Socio-economic aspects.

A comprehensive work plan is then drawn outlining details of the key environmental and social aspects to be considered, methods to be used for baseline data collection, the various stakeholders to be consulted, estimated human and financial resources required and time allocation for the various components of the ESBS.

4.8.2 Methods of Baseline Data Collection

Baseline environmental and social information should be assembled using:

- Collection and analysis of existing data;
- Carrying out specific field studies to acquire supplementary data to help in prediction of impacts of the subproject and its alternatives, and to identify potential trade-offs in ESIA studies; and
- Community and other stakeholders' consultation.

4.8.2.1 Review of existing data and sources

Before embarking on an extensive and costly field studies, maximum effort should be directed at determining the numerical and spatial data that already exist and can be used in describing the baseline environmental and social conditions in the subproject area.

Existing data sources include:

- National databases and routine monitoring programs – review scope and extent of these programs and re-focus studies to include areas and parameters relevant to ESBS;
- Historical environmental studies in the subproject area – review all available scientific and technical literature including unpublished information from academic and civil society groups active in study for use in the ESBS;
- Experience gained from similar subprojects – useful in focusing baseline studies on key issues of concern;
- Aerial photographs and satellite images – useful in determining the historical land use changes, which have occurred in the area and prediction of additional cumulative impacts of the subproject development on various features of the landscape; and
- Traditional knowledge – local communities possess profound and refined knowledge of the spatial and temporal distribution of wildlife and their ecological relations, often lacking in scientific literature. This is useful in understanding potential social-cultural impacts of subproject development, which affect the subsistence economy and continuous relationship of the indigenous people to land.

4.8.2.2 Field studies

Field studies are required to fill in data gaps realized from review of the existing information or to provide more focused information for the ESBS.

Field sampling programs for baseline studies is designed with an aim of providing sufficient information to assist in impact predictions and developing a reference base to guide and test future subproject monitoring programs. The level of detail and scope are tailored to meet the needs of the proposed subproject.

4.8.2.3 Community consultation programmes

The community consultation programs are aimed at creating awareness and ensuring early involvement and active participation of the local communities living in the subproject area and other stakeholders, which may be directly affected on implementation of the subproject.

The consultations between community leaders and SDF/proponent representatives should be confined to key issues of concern. The local people including administration, elders, women, PWDs, and the youth, should be consulted and given a chance to articulate their concerns, fears and offer environmental and

social solutions for consideration in subproject planning, design, and implementation. An appropriate feedback mechanism on issues raised should be established and maintained to avoid suspicions and ensure smooth implementation of the proposed subproject as well as managing community expectations.

4.8.3 Impact Prediction

4.8.3.1 Impacts types

The potential impacts of subprojects fall in broad categories that include physical, biological, and social economic impacts. The physical impacts may vary from soil erosion due to civil works, air emissions, noise emissions, solid and e-waste generation, etc. The biological impacts may include loss of sensitive habitats through vegetation clearance and sedimentation. The socio-economic issues may range from provision of employment opportunities and loss of access to productive assets.

Impact prediction is therefore fundamental to ESBS as well as ESIAs and should consider direct or primary impacts because of the subproject implementation, indirect or secondary impacts, which are knock-on effects in the same project location or other adjacent areas, cumulative impacts that accrue over time and space from many developments, and possible impact interactions between different impacts of a proposed project. In general, impacts may be positive (beneficial) or negative (adverse), short-term or long-term, reversible or irreversible, permanent or temporary.

To be able to make logical impact predictions, a good understanding of the nature of the proposed subproject, similar projects including effectiveness of impact mitigation measures, and other projects that may cause interactive or cumulative impacts, is required. For example, the experience gained in the Regrow project in Southern Tanzania should be used widely as a model case while carrying out ESBS, ESIAs, monitoring and evaluation of impacts of KEWASIP subprojects across Kenya.

4.8.3.2 Methods of impact prediction and significance evaluation

Impact prediction is not an exact science irrespective of the method used. The uncertainties should therefore be clearly stated in the final ESBS document. Direct impacts are often easy to predict unlike indirect or cumulative impacts.

Several standard techniques to aid in impact predictions are available and include Checklists, Matrices, Networks and Flowcharts, Mathematical/Statistical Models, Maps and Geographical Information System (GIS) and Environmental Risk Assessment (ERA). Checklists and Matrices are commonly used for most of the ESBS.

Statistical weightings of impact magnitude, sensitivity and recoverability of relevant receptor are used to quantitatively derive impact significance.

4.8.3.3 Mitigation and baseline monitoring

The mitigation measures are to avoid, minimize, remedy or compensate for the predicted impacts.

Baseline monitoring is necessary for effective feedback for specific environmental aspects e.g. air quality and ambient noise levels. The monitoring program often lasts for many years to be able to establish the natural dynamic variations and not only “snapshots” of the environmental conditions at a particular moment in time.

4.8.3.4 Presentation of ESBS Report and findings

The ESBS report should be comprehensive, precise and accurate with uncertainties clearly stated. Impact predictions are critical and should include both potential negative and positive impacts of subproject implementation. Emphasis needs to be given to positive environmental and social impacts and ways of enhancement. The use of graphics in presentations is recommended.

5 POTENTIAL ENVIRONMENTAL AND SOCIAL RISK IMPACTS AND STANDARD MITIGATION MEASURES

Table 5-1 Project Activities, Environmental and Social Risks and Impacts, and Mitigation Measures

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
Component 1: Policy, legal and regulatory frameworks				
Sub-Component 1A: Strengthening watershed management institutions and governance				
Strengthen policy, Regulatory and institutional frameworks to support conservation, protection and sustainable management of landscapes and ecosystems (consider 5 broad policy areas)	**Cascading and harmonization of the conflicting county policies and legislation on management of watersheds and landscapes in pilot counties (facilitating functioning of specific Value Chains)**	Develop an integrated landscape and ecosystem management plan (5 Plans) Cascading the implementation of the National landscapes and ecosystem strategy 2023-2032 (NLERS) Review and strengthen community by-laws on landscapes and ecosystem management Disseminate and create awareness on the expanded mandate of County Environment Committees (CECs)	Indirect/downstream and environmental social risks and potential negative impacts emanating from TA activities mainly relate to exclusions of VMGs and IPs, sexual exploitation abuse and sexual harassment (SEA/SH), and labor management, community health and safety risks, pollution.	• NPCU to ensure planning process for all TAs includes adequate E&S assessments ensuring consistency with the World Bank's ESF with actions mainstreamed in TAs, addressing implications consistent with the ESF. In addition, the World Bank's ESF requirements in the ESSs will be applied to the TA activities, as relevant. • Integrated landscape and ecosystem management plans shall be subjected to strategic environment and social assessment. • Provide transparent information on project activities, benefits, and eligibility criteria to communities, through accessible channels, trusted intermediaries, and in relevant ethnic languages. • Proactively identify and undertake consultations with targeted groups including disadvantaged and vulnerable groups and households (through surveys, consultations, or other means, as appropriate). • Ensure that the grievance/beneficiary feedback mechanism is accessible by disadvantaged and vulnerable groups through raising awareness among these groups and in relevant ethnic languages, providing different intake channels, etc. Also include (the use of existing governance structures of the indigenous people)

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				• Follow the relevant measures included in the ***project design*** and the ***Stakeholder Engagement Plan (SEP)*** prepared for the project. • Implement Community Development Plans (CDPs) to support households and communities whose livelihoods have been impacted and restricted by Project activities.
	Develop / review of national key policies legislation strategies and standards and enhance management of watershed landscapes and ecosystems	Finalize and disseminate the Forest Policy 2024	Indirect/downstream and environmental social risks and potential negative impacts emanating from TA activities mainly relate to exclusions of VMGs and IPs, sexual exploitation abuse and sexual harassment (SEA/SH), and labor management, community health and safety risks, restrictions on access and land use, pollution.	See above mitigation measures at "**Cascading and harmonization of the conflicting county policies and legislation on management of watersheds and landscapes in pilot counties (facilitating functioning of specific Value Chains)"**
		Finalize and Disseminate EMCA and FCMA		
		Finalize and disseminate subsidiary legislations including; (a) sustainable management of landscapes (Riparian Reserve) protection Regulation; (b) Charcoal Rules and Regulations; (c) Gums and Resins Rules, (d) Participation of Communities in Sustainable Forest Management (SFM) Rules (f) PES regulations/Benefit Sharing regulations.		
		Finalize and disseminate "The National Strategy and Action Plan for the Management and Control of the Invasive Prosopis juliflora tree species (2023 - 2032)"		
		Support Counties in the domestication of model tree growing Bill		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	Development of Matching grant manual	TA support in developing the Matching grant manual	Indirect/downstream and environmental social risks and potential negative impacts emanating from TA activities mainly relate to exclusions of VMGs and IPs, sexual exploitation abuse and sexual harassment (SEA/SH), and labor management, community health and safety risks, involuntary resettlement, restrictions on access and land use, pollution.	See above mitigation measures at "**Cascading and harmonization of the conflicting county policies and legislation on management of watersheds and landscapes in pilot counties (facilitating functioning of specific Value Chains)"**
	Develop, Review and Update Management Plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.) for the targeted watersheds	Review and Update Management Plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.) for the targeted watersheds		
		Develop, where no sub-watershed plans have been prepared, new sub-watershed management plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.)		
Sub-Component 1B: Development and Implementation of Integrated Watershed and Landscape Monitoring System				
Develop integrated monitoring system	**Develop and roll-out a monitoring and data sharing framework**	Assessment of existing monitoring network and identification of strategic monitoring stations for upgrading	Indirect/downstream and environmental social risks and potential negative impacts emanating from TA activities mainly relate to exclusions of VMGs and IPs, sexual exploitation abuse and sexual harassment (SEA/SH), and labor management, community health and safety risks, restrictions on land access and use, generation of e-waste, pollution. Cyber security risk	• Conduct regular data security audits and provide ongoing training for personnel. • Establish and enforce data privacy protocols with clear response procedures for breaches. • Ensure the data protection principles as stipulated in the Data Protection Act (2019) are applied in the Project to enhance appropriate handling of personal data. • Ensure that a graduated security access and clearance is established to regulate staff and external access to limit unauthorized access to non-anonymized data/information.
		Develop a monitoring Framework (include indicators)		
		Develop a Data Sharing Framework and Data/System Protection Standards and guidelines		
		Develop a Geo-Portal with Spatial Data Analytics and Reporting Dashboard		
		Develop the monitoring system, ecosystem restoration and		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
		information into an integrated central repository portal/platform		
		Testing, Data Integration and iteration of prototype platform (including integration with the Maarifa Centre)		
	ICT and Monitoring Infrastructure improvement	Procure ICT equipment, lab equipment and software to support Data collection, analysis and reporting at the county and national levels	Generation of e-waste from irreparable and end of life kits	• Develop and implement an e-waste management plan to ensure the proper management, storage, collection, transportation, and disposal of all electronic waste generated by the Project, following national regulations and the World Bank Environmental and Social Framework (ESF). • Adhere to the procurement plan for acquisition of all equipment and hydromet stations from certified suppliers only. • Carry out due diligence for all potential suppliers to guarantee quality equipment and products as well as adherence to the recommended labor practices. • Implement good EHS management and use of procured goods and equipment. • Ensure that a graduated security access and clearance is established to regulate staff and external access to limit unauthorized access to non-anonymized data/information.
		Procurement of field equipment for monitoring identified indicators including forest cover, water quality sampling among others.	Procurement of substandard goods and equipment Private and confidential data collected during surveys may be accessed by the public without the consent of subjects. Inappropriate labor practices by primary suppliers	
Knowledge management and Capacity building	**Capacity building of the county focal persons (CFCs and county teams) and implementing institutions to be**	Develop, package and avail appropriate information of products to stakeholders	Exclusion of vulnerable groups in project activities and consultations due to inappropriate communication and inaccessible meetings.	• Ensure that project consultations and information dissemination actively involve all the disadvantaged and vulnerable, using accessible language and formats. • Establish Gender and Disability Committees to undertake selection of training beneficiaries.
		Disseminate scientific information through knowledge management platform		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	ToTs for the integrated monitoring platform and new adopted technologies	Create awareness on the utilization of technologies such as JazaMiti and other monitoring systems		• Provide training and support programmes specifically targeting PWDs, youth, women and girls to bridge the gender natural resource management and environmental conservation divide. • Ensure all trainings materials and digital platforms and services are accessible, and culturally appropriate, adhering to international standards for accessibility. • Provide alternative communication methods, such as sign language interpretation or Braille, to ensure inclusive participation in project activities. • Collaborate with organizations supporting PWDs to tailor project interventions to their needs. • Ensure VMGs are represented in leadership and planning committees through targeted outreach and capacity-building. • Mandate quotas for women's representation in CBOs. • Training women to strengthen their decision-making, technical capabilities, and participation in SLM activities. • Ringfence a portion of financial grants to scale up women-led or -owned nature-based enterprises.
	Strengthen institutional and technical capacities for implementation of the (KEWASIP) Project at county and community levels	Identify and map key partners and stakeholders at county and community levels	Exclusion of vulnerable groups in consultations due to inappropriate communication and inaccessible meetings.	See mitigation measures detailed above.
		Conduct capacity needs assessments for the identified implementation partners		
		Develop technical capacities of community-based organizations and groups (CFAs, Irrigation Water User Associations (IWUAs), WRUAs, conservancy groups, CPAs, interest groups),	Exclusion of vulnerable groups in consultations due to inappropriate communication and inaccessible meetings.	See mitigation measures detailed above.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
		and extension officers ToTs as provided in the training manual		
	Establish knowledge hubs (serve as training centre and monitoring centres -linkage with Maarifa Centre and Equipment for County Model Knowledge Management Offices- Restoration focus)	Rehabilitation, renovation and retrofitting of county-designated Knowledge Hubs	Environmental, social, health & safety risks and impacts due to minimal civil works	Preparation and implementation of ESMP and C-ESMP for construction phase. The management plans shall include hazard identification and risk assessment to ensure that risk avoidance and or commensurate control measures are implemented. Training workers on the C-ESMP. **Noise and vibration** • Planning activities in consultation with local communities/neighbours • Using noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities, and exhaust muffling devices for combustion engines. • Avoiding or minimizing project transportation through community areas. • Provide PPE to project workers e.g., earmuffs, etc. and enforce usage. **Air emissions and ambient air quality** • Minimizing dust from material handling sources, such as bins, by using covers and/or control equipment (water suppression, bag house, or cyclone) • Minimizing dust from open area sources, including storage piles, by using control measures such as installing enclosures and covers, and increasing the moisture content • Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements • Avoiding open burning of solid waste.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				• Provision of appropriate dust masks for exposed workers. **Solid waste** • Establishing waste management priorities at the outset of activities based on an understanding of potential EHS risks and impacts and considering waste generation and its consequences • Establishing a waste management hierarchy that considers prevention, reduction, reuse, recovery, recycling, removal and finally disposal of waste. • Avoiding or minimizing the generation waste materials, as far as practicable • Where waste generation cannot be avoided but has been minimized, recovering and reusing waste • Where waste cannot be recovered or reused, treating, destroying, and disposing of it in an environmentally sound manner. **Hazardous materials** • Selecting new building materials devoid of hazardous substances • Assessing the contents of hazardous materials and petroleum-based products in building systems • Assessing the presence of hazardous substances in or on existing building materials (e.g., polychlorinated biphenyls, asbestos- containing flooring or insulation) and decontaminating or properly managing contaminated building materials.
			OHS impacts and risks due to due to construction works	**Over-exertion** • Training of workers in lifting and materials handling techniques in construction and decommissioning projects, including the placement of weight limits

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				above which mechanical assists or two-person lifts are necessary. • Planning work site layout to minimize the need for manual transfer of heavy loads. • Selecting tools and designing workstations that reduce force requirements and holding times, and which promote improved postures, including, where applicable, user adjustable workstations. • Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks **Slips and falls** • Implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths • Cleaning up excessive waste debris and liquid spills regularly • Locating electrical cords and ropes in common areas and marked corridors • Use of slip retardant footwear **Work at heights** • Avoid working at heights, where feasible, by deployment of suitable alternative methods. • Training and use of temporary fall prevention devices, such as rails or other barriers able to support a weight of 90 kilograms, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface • Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 2,300 kilograms (also described in this

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				section in Working at Heights above), as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. The tie in point of the fall arresting system should also be able to support 2,300 kilograms • Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces. **Struck by objects** • Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels • Conducting sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable • Maintaining clear traffic ways to avoid driving of heavy equipment over loose scrap • Use of temporary fall protection measures in scaffolds and out edges of elevated work surfaces, such as handrails and toe boards to prevent materials from being dislodged • Wearing appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes **Moving Machinery** • Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic using one-way traffic routes, establishment of speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic • Ensuring the visibility of personnel through their use of high visibility vests when working in or walking through

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle • Ensuring moving equipment is outfitted with audible back-up alarms • Using inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations. **Dust** • Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements • PPE, such as dusk masks, should be used where dust levels are excessive.
			Community Health and Safety (CHS) impacts and risks due to civil works	**General Site Hazards** • Restricting access to the site, through a combination of institutional and administrative controls, with a focus on high-risk structures or areas depending on site-specific situations, including fencing, signage, and communication of risks to the local community • Removing hazardous conditions on construction sites that cannot be controlled affectively with site access restrictions, such as covering openings to small, confined spaces, or locked storage of hazardous materials **Community exposure to health issues** • Prevention of larval and adult propagation through sanitary improvements and elimination of breeding habitats close to human settlements. • Elimination of unusable impounded water • Implementation of integrated vector control programs • Promoting use of repellents, clothing, netting, and other barriers to prevent insect bites.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				• Collaboration and exchange of in-kind services with other control programs in the project area to maximize beneficial effects. • Educating project personnel and area residents on risks, prevention, and available treatment • Monitoring communities during high-risk seasons to detect and treat cases. **Traffic and road safety** Road safety initiatives proportional to the scope and nature of project activities should include: • Identify, evaluate, and monitor the potential traffic and road safety risks to workers, affected communities and road users throughout the project life cycle and, where appropriate, develop measures and plans to address them. • Driving for work policy • Signage – collaboration with local community • Erection of bumps and enforce other speed calming measures in work areas • Registered vehicles and drivers • Regular maintenance of vehicles • Minimizing pedestrian interaction with construction vehicles • Use of locally available materials • Coordination with emergency responders to ensure that appropriate first aid is provided in the event of accidents. • Induct all project workers using an official program on their road safety roles and responsibilities, as per national transport authority (NTSA) guidelines **Management and safety of hazardous materials**

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				• Avoid or minimize the potential for community exposure to hazardous materials and substances that may be released by the project. • Where hazardous materials are part of existing project infrastructure or com- ponents, the project will exercise due care during construction and implementation of the project, including decommissioning, to avoid exposure to the community • Implement measures and actions to control the safety of deliveries of hazardous materials, and of storage, transportation and disposal of hazardous materials and wastes, and implement measures to avoid or control community exposure to such hazardous material. **Emergency preparedness and response** • Identify and implement measures to address emergency events. • Conduct a risk hazard assessment (RHA), as part of the environmental and social assessment undertaken pursuant to ESS1. Prepare an Emergency Response Plan (ERP) based on the results of the RHA. implementation; and (h) measures for restoration and cleanup of the environment following any major accident. • Document emergency preparedness and response activities, resources, and responsibilities, and disclose appropriate information, as well as any subsequent material changes thereto, to affected communities, relevant government agencies, or other relevant parties.
			Employment and labor rights	• Implement a fair and transparent employment process. • Provide activity workers with clear and understandable information regarding rights via contract documents in local language.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				• Workers must be provided with and given training on code of conduct, to prevent adverse impacts to the environment and local community and to avoid undesirable contact with members of the community. • The code of conduct should be provided in writing and on posters at the construction site. • Provide workers with a grievance redress mechanism • Ensure that workers have a right to join labor unions and that their union deductions are remitted as appropriate.
		Equipment for Knowledge Management	Generation of e-waste from end-of-life ICT equipment	See mitigation **at ICT and Monitoring Infrastructure improvement** above
		Develop Linkage with Maarifa Centre and Knowledge Management Platforms	Cybersecurity risk	See mitigation at **Develop and roll-out a monitoring and data sharing framework**
		Training and Capacity Building for Hub Personnel	• Risk of staff turnover • Exclusion of Hub Personnel from VMGs	• Introduce competitive salary scale and competitive compensation packages to recruit and retain competent technical staff. • Provide requisite resources and support for staff well-being to mitigate the effects of working in high stress environments. • Provide opportunities for career growth and advancement. • Include trainee from VMG as an indicator in the Training and Capacity Building Plan. • Provide Training Quotas for personnel from VMGs
	Train communities on seed collection, tree nursery establishment and	Conduct Community Sensitization Workshops	SEA/SH for community members	• Provide awareness session on SEA/SH • Ensure all trainers have signed a Code of Conduct (CoC). • Provide training on CoC.
		Training on Seed Collection Techniques		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	management by KEFRI	Training on Tree Nursery Establishment and Management (5 Trainings per project site)		• Create referral linkages with local GBV prevention service providers
		Training on Seedling Transplanting and Site Preparation	Exposure to infectious diseases (e.g. STDs, etc.)	• Provide awareness to local communities through stakeholder engagement. • Educate and sensitize local community on STI, HIV/AIDS and other communicable diseases. • Maximize the use of local vendors (for food, water, services etc.) with public health license. • Follow hygiene procedures for infectious disease
			Bias in the selection of beneficiaries Discriminatory practices in accessing project services, and benefits Community conflicts over beneficiary selection and limited uptake of the Project GRM	• Transparency and communication/public disclosure of beneficiary selection criteria • Communicate and implement the Project GRM • Undertake adequate and targeted stakeholder engagement • Establish beneficiary quotas for different community groups.
	Training of Farmer Field Schools facilitators in the project counties on aspects of Tree nursery, agroforestry, SLM etc. by KFS	Develop Training Curriculum and Materials Conduct Training of Facilitators Field Demonstrations and Practical Training	• Inappropriate curriculum content not meeting local needs. • Cultural Insensitivity • Limited Access to Tools and materials • Ineffective Training Formats • Exclusion of VMGs	• Conduct thorough context and training needs assessments. • Engage diverse stakeholders early and continually. • Pilot the curriculum before full implementation. • Plan for regular updates and revisions. • Allocate sufficient time and resources for development. • Deliberately target VMGs and their areas. • Adopt problem-based/leaner-led training approaches • Translate training content into local languages especially in VMG areas.
Sub-Component 1C: Sustainable financing mechanisms and investments for watersheds and landscapes management				
Design, develop and establish of		Stakeholder Consultations and Workshops	Exclusion of Vulnerable and Marginalized Groups (VMGs) such as IPs, Women, Youth, elderly and	• Implement the SEP and ESMPs

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
PES for priority watersheds	**Finalization of the National PES framework**	Expert Reviews and Technical Inputs	Persons with disabilities in capacity building initiatives and awareness creation. Inadequate mapping and limited stakeholder engagement including with VMGs. Limited uptake of the Project GRM.	• Strengthen awareness on the benefit of inclusion of the vulnerable groups in the project. • Ensure the proper participation and consultation of vulnerable groups during project implementation. • Ensure the GRM is culturally appropriate with the project beneficiaries and project affected parties. • Publicize GRM and translate its main processes into local languages.
		Validation		
		Printing and Dissemination of Finalized PES Framework		
		Capacity Building and Awareness Creation		
	Design and develop the PES including the governance and institutional structures (1Carbon Credit and 1 Water Fund) for select priority project area	Conduct Stakeholder Engagement and Consultations	Downstream environmental and social risks and impacts e.g. underpayment, leakage (transfer of destructive activities to areas not covered by PES), exclusion of vulnerable and marginalized groups from PES benefits, conflict over resources, fraud and mismanagement, perverse incentives such as overgrazing before enrolment, dependency by the community.	• Conduct thorough stakeholder consultations and ecological assessments. • Establish clear, measurable objectives and robust contracts. • Ensure equitable inclusion criteria, particularly for vulnerable groups. • Offer fair compensation that reflects opportunity costs. • Use technology like satellite imagery and drones for cost-effective monitoring. • Establish transparent governance and dispute-resolution mechanisms. • Align PES with broader conservation, agricultural, and climate policies. • Secure long-term funding through taxes, public-private partnerships, or trust funds. • Regularly evaluate program outcomes and adapt based on lessons learned.
		Governance Structure Design and Development		
		Institutional Capacity Building and Training		
		PES Scheme Design for Carbon Credit or Water Funds		
		Institutionalization and Implementation Support		
	Undertake feasibility studies to inform the design of the PES Schemes	Scoping and Preliminary Assessments		
		Environmental and Socio-Economic Feasibility Analysis		
		Legal and Institutional Feasibility		
		Financial and Technical Feasibility		
		Stakeholder Engagement and Validation		
		Final Feasibility Study Report and Recommendations		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	Provide seed fund to operationalize the payment of ecosystem services (Carbon Credit or Water Funds) including undertaking of project registration and certification processes)	Project Identification and Baseline Assessment		
		Project Design and Feasibility Assessment		
		PES Project Registration		
		Certification and Accreditation Process		
		Establishment of PES Payment Mechanisms		
		Monitoring, Reporting, and Verification (MRV) for the established PES Schemes		
		Seed Funding for PES Scheme Implementation		
	Establish public private partnership in PES	Stakeholder Mapping and Engagement		
		Development of Public-Private Partnership (PPP) Framework		
		Capacity Building for Public and Private Sector Partners		
		Negotiation and Finalization of PPP Agreements		
		Establishment of Joint PES Projects		
		Monitoring, Evaluation, and Reporting of PPP PES Projects		
		Stakeholder Engagement and Communication Strategy		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
Develop and implement an incentive and award scheme for recognition and awarding of actors engaged in conservation of the select watersheds	**Award and recognize identified best practices**	Identification and Selection Process Event Organization (Award Ceremony) Awards and Prizes Travel and Accommodation for Participants Communication and Media Coverage	Environmental Risks and Impacts e.g., Greenwashing, Unintended Environmental Harm, Focus on Short-Term Gains, Overemphasis on Specific Metrics, and Resource Intensity, etc. Social Risks and Impacts e.g., Exclusion and Inequity, Tokenism (Award programs might recognize symbolic efforts rather than substantive, systemic changes), Cultural Insensitivity (Awards that fail to consider local contexts, or cultural values may impose external ideals of sustainability that conflict with local practices), Lack of Community Engagement, etc.	• Set comprehensive criteria that assess environmental, social, and long-term conservation impacts. • Include metrics that discourage greenwashing and reward systemic changes rather than superficial efforts. • Create pathways for small-scale, community-led, and grassroots initiatives to participate. • Provide support for underrepresented groups, such as guidance on applications or funding for participation. • Implement thorough vetting processes to evaluate nominees' track records and verify claims of watershed conservation excellence. • Use independent assessments or audits to ensure transparency. • Engage local stakeholders in the evaluation process to ensure initiatives align with community needs and priorities. • Recognize projects that meaningfully involve and benefit local communities including VMGs. • Opt for virtual events or carbon-neutral ceremonies to reduce resource use. • Use sustainable materials for trophies and awards. • Reward initiatives with clear plans for long-term environmental and social benefits. • Offer ongoing support (e.g., funding, mentorship) to help awardees sustain their efforts. • Require periodic reporting from award recipients on the continued impact of their initiatives. • Publicly revoke awards if recipients are found to engage in unethical or harmful practices.
	Provide small grants to local community groups to scale up their	Grant Design and Administration Community Outreach and Capacity Building Grant Disbursement	• Overexploitation of natural resources • Bias in the selection of Grantees • Community conflicts over grantee selection • Fraud and anticorruption	• Include environmental and social monitoring as part of the grant conditions. • Transparency and communication/ public disclosure of grantee selection criteria (SEP) • Communicate and implement the Project GRM

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	nature-based enterprises	Monitoring and Evaluation (M&E) Communication and Dissemination	• Inadequate financial and administrative capacity within CBOs ranks. • Weak organizational structures • Limited market access • Misalignment with community needs • External shocks such as climate change impacts, political instability, or economic downturns could disrupt grantee projects.	• Provide financial management training and ongoing mentorship. • Assess organizational capacity before awarding grants and support capacity-building. • Include market analysis and marketing support as part of the grant program. • Conduct participatory needs assessments to ensure alignment with community goals. • Encourage diversification and build resilience into business models.
Component 2: Green Horizons: Sustainable Landscape and Watershed Revitalization.				
Sub-Component 2A. Sustainable Landscape and Watershed Management in Private and Community Lands				
Development county level Integrated watershed Management Plan for the sub watersheds belonging to the project targeted watersheds	**Review of the existing plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, fire management plans, etc.) in the selected watersheds and put them in an integrated county level watershed management plan for the targeted sub-watersheds in the county.**	Preliminary Assessment of Existing Plans Plan Review and Analysis Stakeholder Consultations Integration and Development of County-Level Watershed Management Plan Validation and Finalization of the Integrated Plan Capacity Building and Training on the Integrated Plan	• Inadequate stakeholder consultation e.g., Exclusion of Vulnerable and Marginalized Groups (VMGs) such as IPs Women, Youth, elderly and Persons with disabilities. • Overlooking social or cultural Factors • Environmental and climate risks • SEA/SH risks due to power imbalances.	• Ensure inclusive, transparent, and participatory review processes with adequate representation. • Incorporate social, cultural, and traditional knowledge into the review process. • Integrate climate adaptation and risk management strategies into the Plans review process. • Ensure all facilitators have signed a Code of Conduct (CoC).

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	Establish county level panels of experts assisting community groups in formulation of proposals and providing TA support during implementation and larger scale county investments	Panel of Experts Identification and Recruitment	Inadequate targeting and recruitment of the county level panel of experts to support community groups	Develop a ToR for the recruitment and selection of the county level panel of experts
		Capacity Building for Experts	Inadequate capacity building for experts	Undertake adequate capacity building for experts throughout Project implementation
		Community Proposal Formulation Support	Limited support to communities for proposal formulation Limited uptake of the Project GRM	Establish mechanisms for monitoring support rendered to communities for proposal formulation Undertake sensitization on the Project GRM to all stakeholders
		Technical Assistance (TA) During Implementation	Frequent turnover of TA personnel	Offer competitive packages and support to TA personnel
Implementation of Watershed conservation, rehabilitation, SLM, CSA and livelihood activities at community level through matching grant support to local community groups	**Establishing county level matching grant committees**	Committee Formation and Capacity Building	Exclusion of Vulnerable and Marginalized Groups (VMG), such as IPs, Women, Youth, elderly and Persons with disabilities in committees, capacity building initiatives, stakeholder/community engagements. Bias in procedures applied in grant reviews.	• conduct inclusive and accessible consultations with community members, community leaders and representatives, and local authorities. • Provide transparent information on project activities, benefits, through accessible channels, trusted intermediaries, and in relevant languages. • Proactively identify, consult with, and reach out to disadvantaged and vulnerable groups. • Ensure that the grievance/beneficiary feedback mechanism is accessible by disadvantaged and vulnerable groups through raising awareness among these groups and in relevant languages, providing different intake channels, etc. • Follow the relevant measures included in KEWASIP's Stakeholder Engagement Plan (SEP). • Encourage institutions/CBOs/NGOs in VMG areas to submit joint grant applications with VMGs.
		Establishing Operational Framework		
		Community Engagement and Awareness		
		Grant Application and Review Process		
	Facilitating Participatory Integrated	Community Mobilization and Awareness	• Environmental Risks due to proposed activities inadvertently harming the local	• Integrate environmental safeguards and conduct environmental impact assessments for proposed activities.
		Capacity Building and Training		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	Community Development (PICD) process at ward level/ sub-watershed levels	Participatory Planning and Implementation	environment or leading to overexploitation of natural resources. • Limited community engagement due to lack of awareness, interest, or capacity. • Conflicting interests among stakeholders due to competing priorities and/or goals • Resource constraints could undermine implementation of agreed plans	• Use targeted outreach, inclusive facilitation methods, and ensure participation of marginalized groups. • Employ conflict resolution mechanisms and focus on finding shared goals and trade-offs. • Secure adequate resources and plan for realistic, phased implementation.
		Stakeholder Engagement and Collaboration		
	Matching grant support to community groups for conservation, rehabilitation, SLM, CSA and livelihood support (including complementing extension (FFS) support).	Grant Design and Implementation Framework	• Same risks and impacts as Provide small grants to local community groups to scale up their nature-based enterprises • Unclear procedures applied in complementing extension support. • Private and confidential data collected from grant applications may be accessed by the public without the consent of the subjects.	• See mitigation measures at **Provide small grants to local community groups to scale up their nature-based enterprises** • Ensure that a graduated security access and clearance is established to regulate staff and external access to limit unauthorized access to non-anonymized data/information.
		Capacity Building for Community Groups		
		Grant Application Process		
		Matching Grant Distribution		
		Complementing Extension Support		
	Where needed, group management capacity support (financial, record keeping, etc. Training)	Needs Assessment	• Limited awareness to community groups on availability of support on group management capacity support. • Focus of needs assessment on local elites.	• Ensure the Project creates broad awareness to community groups on the availability of support on group management capacity support. • Undertake a needs assessment for diverse community groups to identify if they need any group management capacity support.
		Training Development	Elite capture of consultations for training development.	Deliberate targeting of VMGs including women, youth and PWDs during consultation for training development.
		Capacity Building Workshops	Exclusion of VMGs including people living with disabilities.	Involve VMG representatives such as NGOs that speak for them to organize or validate workshop plans, schedules and invitees.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
Implementation of watershed conservation and rehabilitation works at county level	**Erosion protection investments at erosion hotspots that need direct action**	Erosion Assessment and Mapping erosion hotspots to prioritize areas for intervention.	See environmental and social risks and impact at **Establish knowledge hubs**	See mitigation measures at **Establish knowledge hubs** and detailed guidance by World Bank Group General EHS Guidelines.
		Design of Erosion Control Measures tailored to specific hotspots.		
		Implementation of Erosion Control Measures		
		Maintenance and Monitoring to ensure the sustainability and effectiveness of the erosion control measures over time.		
		Community Training and Awareness on erosion prevention techniques and raising awareness about the importance of erosion control.		
	Establishment of Water Storage Infrastructure (water pans) identified in the plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.)	Site Assessment and Feasibility Studies to ensure the suitability of the site and the design	• Safety and health hazards from construction activities • Resource-based conflicts around newly developed water infrastructure. • Easements and wayleaves for the reticulation infrastructure will affect trees, crops and structures. • Emergence of armed groups in volatile areas to control water sources and levy illegally on its access.	• Implement safety measures as identified under establishment of knowledge hubs. • Create diverse and representative water management committees to mediate and manage water sharing and emerging conflicts. • Fair valuation and compensation of affected property. • Water management committees to negotiate wayleaves prior to implementation of activities. • Link water management committees to NGAO and security agencies for water infrastructure protection in volatile areas. • Sensitize communities on safety hazards associated with water pans and include warning signs and deterrents for children
		Construction of Water Storage Infrastructure (Water Pans, and rooftop rainwater collection)		
		Installation of Water Reticulation Systems for water distribution from the water storage infrastructure to nearby ecosystems and communities.		
		Maintenance and Sustainability		
		Community Needs Assessment		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
Establishment of Green Corridors to link fragmented habitats	**Sensitize communities for wildlife compatible land use**	Development of Educational Materials Community Sensitization Workshops Community Engagement Activities	Downstream environmental and social risks and impacts e.g. Human-wildlife conflict. displacement of communities, spread of diseases, conflict among wildlife species, habitat degradation, poaching and illegal activities, economic costs, etc.	• Engage local communities in planning and decision-making to ensure their needs are considered. • Provide alternative livelihoods, compensation for losses, and benefits from eco-tourism. • Use wildlife-friendly fencing to prevent animals from straying into farmlands. • Establish buffer zones with controlled land use around corridors. • Design corridors to avoid high-conflict areas like densely populated regions or intensive agricultural zones. • Integrate corridors into national and regional land-use plans. • Implement regular disease surveillance for wildlife and livestock near corridors. • Vaccinate livestock in communities adjacent to corridors. • Strengthen patrols and surveillance in corridors to deter poachers. • Use technology such as drones and camera traps for monitoring. • Rehabilitate degraded areas within and around corridors by planting native vegetation and controlling invasive species. • Educate communities about the importance of corridors and how to coexist with wildlife. • Promote the economic and ecological benefits of conservation efforts. • Provide financial incentives to communities, such as revenue-sharing from tourism. • Seek funding from international conservation organizations and governments. • Sensitize communities on the Project GRM.
		Assessment and Planning		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	Restore vegetation cover and water pans in wildlife corridors	Vegetation Restoration	See environmental and social risks and impact at **Establish knowledge hubs**	See mitigation measures at **Rehabilitate, Renovate and Retrofit knowledge hubs**
		Water-Pan Construction and Rehabilitation		
		Community Training and Engagement		
Management of Prosopis juliflora	**Map, document and monitor public/private and community lands under Prosopis juliflora.**	Preliminary Assessment and Planning	Negligible	
		Mapping Activities	Negligible	
		Documentation of the ecological, economic, and social impacts of Prosopis juliflora invasion.	Negligible	
		Monitoring Program for the affected areas.	Negligible	
		Capacity Building and Training of community members and stakeholders on mapping, monitoring, and managing Prosopis invasion.	Negligible	
	Train, awareness creation and demonstrate technologies for the control, management and utilization of Prosopis juliflora	Training Programs for community members, stakeholders, and local organizations on the management and utilization of Prosopis juliflora.	Inadequate mapping, targeting and benefiting of stakeholders for the training programs, awareness creation campaigns and capacity building.	Establish a criterion for the selection of stakeholders for the training programs, awareness creation campaigns and capacity building.
		Awareness Creation Campaigns about the impacts of Prosopis juliflora and promoting best management practices.		
		Setting up Demonstration Projects/sites to showcase effective management and		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
		utilization techniques for Prosopis juliflora.		
		Capacity Building for Utilization of Prosopis juliflora for various products and services.		
	Undertake/upscale ecosystem specific interventions for control and management of Prosopis juliflora	Assessment of Ecosystem Impact of Prosopis juliflora on various ecosystems to determine appropriate management strategies.	Environmental and social risks and impacts e.g., Soil erosion on cleared areas due uprooting, Significant risks of regrowth and further infestation, Exposure of workers and community members to harmful substances when herbicides and other chemicals are used, etc.	• Continuous monitoring and maintenance of areas previously infested with invasive species. • Ensure use of best practices in invasive species management, including mechanical removal, biocontrol methods, and continuous post-restoration monitoring – in as far as it is technically feasible in the affected ASALs. • Stakeholders should be involved in managing invasive species at the community level, using species for fuel or alternative livelihoods where possible (e.g., Prosopis for briquettes) • Recommendations to control and prevent pesticide or herbicides exposure include the following: o To ensure train personnel to apply pesticides and ensure that personnel have received the necessary certifications, or equivalent training where such certifications are not required. o Avoid pesticide products that contain active ingredients that are restricted under applicable international conventions/protocols; o Use pesticides according to the specific label o Avoid the aerial application of pesticides, whenever feasible; o Use biological or safe products, whenever feasible; o Implement a system to warn neighbouring communities of the application of pesticides in the forest; o Provide personal protective equipment to personnel
		Control Strategies Implementation		
		Community Engagement and Training on control and management techniques.		
		Monitoring and Evaluation of the interventions and evaluating their impact.		
		Scaling Up Successful Interventions in other areas.		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				○ Pesticides should not be applied close to watercourses; ○ Clean (e.g., a triple rinse or pressure technique) and dispose of (e.g., through crushing, shredding, or return to suppliers) pesticide packaging and containers to ensure that they are not subsequently used as containers for food or drinking water. ○ Integrated Pest Management (IPM) approaches are to be utilized that entail coordinated use of pest and environmental information along with available pest control methods, including cultural practices, biological, genetic and, as a last resort, chemical means to prevent unacceptable levels of pest damage. ○ A Pest Management Plan must be developed where use of a significant volume of pesticides is foreseen to demonstrate how IPM will be promoted to reduce reliance on pesticides and describes measures to minimize risks of pesticide use. ○
Sub-Component 2B. Restoration of gazetted forests				
Enhance collection, testing and distribution of quality tree seeds and seedlings for restoration of degraded landscapes	**Collect and distribute quality tree seeds for rehabilitation and restocking of forests and other landscapes.**	Seed Collection (sourcing high-quality seeds from approved seed sources, ensuring genetic diversity and species suitability for the restoration efforts.)	Risks related to labor and working conditions e.g., discrimination, SEAH, GBV, etc. Selection of inappropriate tree species for assisted regeneration.	• Terms of reference (TOR), for defining the scope and outputs will be drafted so that the recruitment, training, knowledge exchange and technology transfer, and other technical assistance provided is consistent with ESSs 1-10. • Staff to sign a code of conduct. • Implement Labour Management Plan (LMP). • Implement GBV Action Plan • Use indigenous tree species that naturally occur in respective water towers.
		Seed Processing and Storage	Air emissions e.g. dust from winnowing.	• Develop and implement a grievance procedure to manage any dust complaints.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				• Provide PPE to project workers
		Seed Distribution to local community groups, government agencies, and other stakeholders for rehabilitation activities.	Road Safety Risks	• Measures for safety of workers that are travelling (via road) • Conduct road safety training for all project staff • Induction of all project staff on their roles and responsibilities relating to road safety **Measures for truck drivers** • Adoption of best transport safety practices across all aspects of project operations with the goal of preventing traffic accidents and minimizing injuries suffered by project personnel and the public. Measures should include: o Emphasizing safety aspects among drivers o Improving driving skills and requiring licensing of drivers o Adopting limits for trip duration and arranging driver rosters to avoid overtiredness o Avoiding dangerous routes and times of day to reduce the risk of accidents o Use of speed control devices (governors) on trucks, and remote monitoring of driver actions • Regular maintenance of vehicles and use of manufacturer approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure. • Employing safe traffic control measures, including road signs and flag persons to warn of dangerous conditions • ERP training • Driving for work policy • Ensure project vehicles are insured.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
		Capacity Building and Training of community groups and stakeholders on seed handling, planting techniques, and post-planting care.	• Exclusion of VMGs including the aged, PWDs, women and youth. • Conflict over opportunities to make income.	• Broad community consultations including VMGs, women, youth and PWDs. • Publicize the GRM and selection criteria for selection of participating groups and stakeholders. • Select diverse groups including youth, PWDs, women, and VMGs to participate.
		Monitoring and Evaluation (M&E) of the entire process from seed collection to planting and rehabilitation for success and improvements.	Tensions or conflicts during M&E sessions at community level.	Strengthen inter-ethnic dialogue in each of the water towers for the management of natural resources and attendant processes.
	Procure equipment to enhance seed testing and research e.g. germination chambers	Procurement of Germination Chambers	Fraud and corruption	Enforce procurement procedures agreed on for the project.
		Procurement of Seed Testing Equipment to complement the germination chambers.	• Inefficient use of project resources through procurement of substandard equipment. • Fraud and corruption	• Adhere to the procurement plan and procedures for acquisition of all medical supplies and equipment from certified suppliers only. • Carry out due diligence for all potential suppliers to guarantee quality equipment and products. • Implement good EHS management and use of procured goods and equipment
		Procurement of Environmental Control Equipment to regulate temperature, humidity, and light conditions for optimal seed testing.		
		Procurement of Seed Storage and Data Collection Equipment for monitoring and recording seed performance and research outcomes.		
		Capacity Building and Training on Equipment Use		
		Site Preparation for Nurseries		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	Produce seedlings appropriate for different agroecological zones e.g. bamboo and Melia volkensi	Procurement of Seeds and Inputs to promote the healthy growth of the seedlings.	Risks related to labor and working conditions e.g., discrimination, SEAH, GBV, etc.	See mitigation measures at **Collect and distribute quality tree seeds for rehabilitation and restocking of forests and other landscapes.**
		Nursery Establishment and Operations		
		Seedling Maintenance and Care		
		Seedling Packaging and Distribution to respective planting sites.		
		Monitoring and Evaluation (M&E) of the production and survival rates of seedlings, as well as ensuring that they are being planted in suitable environments.		
Rehabilitation of degraded areas within the Watersheds	**Undertake mapping of intervention areas in the selected watersheds (Public Forests, National Parks etc.)**	Preliminary Assessment and Planning to identify the areas requiring mapping and the tools needed for effective data collection.	Negligible	
		Field Surveys and Data Collection to collect spatial data on degradation hotspots and areas requiring rehabilitation in public forests, national parks, and other conservation areas.	• Poor weather conditions • Risk of injury	**Poor weather conditions** • Check the weather forecast before setting out. • Wear clothing suitable for expected weather conditions and be prepared for sudden changes. • Strong winds and cold weather reduce energy levels; take adequate food and drink supplies. • Be aware of places to seek shelter when necessary • Allow extra time for traveling in adverse weather conditions. **Risk of Injury**

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
				• Ensure that one of the fieldwork team is trained in First Aid. • Carry a First Aid kit • Medical Supplies or treatment - be aware of where these can be bought or received if there is an accident • Have plans of action and be aware of where help can be sought should an accident occur in a remote location. • Fill out an accident report and return it to the NPCU on return.
		Mapping and GIS Data Analysis to identify key intervention areas.	Negligible	
		Reporting and Documentation for decision-making and planning for rehabilitation interventions.	Negligible	
	Undertake expansion of production capacity of existing KFS tree nurseries in the selected counties	Nursery Site Assessment and Planning of existing KFS nurseries, selecting appropriate sites for expansion, and planning the required infrastructure upgrades.	See risks and impacts at **Produce seedlings appropriate for different agroecological zones e.g. bamboo and Melia volkensi**	See mitigation measures at **Produce seedlings appropriate for different agroecological zones e.g. bamboo and Melia volkensi**
		Infrastructure Development and Expansion		
		Procurement of Equipment and Inputs to support seedling production.		
		Capacity Building and Training of staff and local community members in nursery management techniques and		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
		sustainable practices to ensure long-term success.		
	Undertake planting of seedlings to rehabilitate degraded ecosystems	Site Assessment and Planning	• Disruption of wildlife habitats and plant community dynamics from afforestation and reforestation activities • Exposure of community workers involved in restoration activities to health and safety risks	• Plan controlled access after regeneration and involve stakeholders including herbalists in the planning. • Plan in consultation with affected communities on seasonal access of cultural heritage sites. • Ensure control and surveillance protocols are always adhered to by rangers, and that community members trespassing are handled according to the law while upholding human rights.
		Seedling Procurement and Transportation to the planting sites.		
		Land Preparation and Soil Enrichment		
		Labor for Planting Activities involving community members and other local stakeholders.		
		Post-Planting Care and Maintenance to ensure the survival and growth of the planted seedlings		
		Monitoring and Evaluation (M&E) of the progress of the planted seedlings		
		Community Engagement and Awareness to ensure involvement of local communities in the rehabilitation process, including awareness campaigns, and encouraging participation in tree care and protection.		
		Site Assessment and Planning		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	Undertake rehabilitation of degraded natural forest through protection (temporary enclosures) for natural regeneration	Fencing and Enclosure Setup to protect the degraded areas from livestock, wildlife, and human interference	• Disruption of wildlife habitats and plant community dynamics from afforestation and reforestation activities • Restriction on access to grazing areas, pastures and herbal medicine. • Access limitation to sacred places and heritage sites. • Risk of safety to VMGs and respective local community members due to inappropriate conduct of KFS and KWS rangers.	• Plan controlled access after regeneration and involved stakeholders including herbalists in the planning. • Plan in consultation with affected communities on seasonal access of cultural heritage sites. • Ensure control and surveillance protocols are always adhered to by rangers, and that community members trespassing are handled according to the law while upholding human rights.
		Maintenance and Monitoring of Enclosures to ensure proper regeneration.		
		Awareness and Community Sensitization of local communities to the importance of natural forest regeneration		
		Natural Regeneration Support (Enrichment) to accelerate the process where natural regeneration is slow or not viable.		
	Develop systems and procure equipment for control and management of tree pests and diseases	Needs Assessment and System Design	Exclusions of VMGs	Include the indigenous knowledge of VMGs in the needs assessments.
		Development of Monitoring and Reporting Systems to monitor and report outbreaks of pests and diseases in forested areas.		
		Procurement of Pest and Disease Control Equipment		
		Field Implementation of Pest and Disease Control Measures in affected forested area	Inadvertent impact on the health of livestock, especially browsers.	Ensuring that pest and disease control measures that involve pesticides are used in fenced off sites and after stakeholder and public consultations and awareness creation.
		Training and Capacity Building for Field Staff to identify,	Exclusion of VMGs and other disadvantaged groups	Inclusive approach to training including the selection of participants and the delivery of content.

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
		monitor, and control tree pests and diseases effectively		
		Public Awareness and Community Engagement	Exclusion of VMGs and other disadvantaged groups	Inclusive approach to public awareness and community engagement including translation of public education materials into local languages as necessary and appropriate.
	Develop systems and procure equipment for disaster surveillance, preparedness and response mechanism e.g. fire	Risk Assessment and System Design	See risks and impacts at **Procure equipment to enhance seed testing and research e.g. germination chambers**	See mitigation measures at **Procure equipment to enhance seed testing and research e.g. germination chambers**
		Development of Surveillance and Monitoring Systems to monitor potential disaster risks like wildfires.		
		Procurement of Disaster Response Equipment required for rapid response to wildfires and other disasters.		
		Firebreak Creation and Maintenance in protected areas to reduce the spread of wildfires.	Use of mechanical methods like ploughing, mowing and scrapping can trigger soil erosion.	Minimize soil erosion by following contour lines and consider using techniques like mulch or seeding to revegetate fire breaks after clearing.
		Training and Capacity Building for Fire Crews and Communities on disaster preparedness and response.	Controlled burning, if deployed, can sometimes go out of control with undesired consequences	Avoid controlled burning as feasible. Where controlled burning is necessary, ensure careful planning and monitoring to avoid unintended spread.
		Community Engagement and Early Response Teams in disaster preparedness and response efforts.		
Control and Management of invasive species	**Conduct studies on ecological impact of invasive species on forest**	Planning and Stakeholder Consultation	• Exclusion of VMGs and their indigenous knowledges. • Inappropriate communication with local community members.	• Take into consideration local knowledge on safe control of undesired tree species. • Translate content into local languages and deliver the same in culturally appropriate ways.
		Field Surveys and Data Collection on the impact of invasive species		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
	regeneration and biodiversity e.g. Prosopis juliflora and lantana, etc.	on forest regeneration and biodiversity.		
		Laboratory Analysis for the samples collected from the field.		
		Data Management and Analysis to determine the ecological impact.		
		Report Preparation and Publication of the findings from the ecological impact study.		
		Dissemination of the results of the study and Community Engagement		
	Manage and reclaim land covered with invasive species in gazetted forest e.g. Prosopis juliflora and lantana, etc.	Site Assessment of the extent of land covered by invasive species and Planning	See environmental and social risks and impacts at **Undertake/upscale ecosystem specific interventions for control and management of Prosopis juliflora**	See mitigation measures at **Undertake/upscale ecosystem specific interventions for control and management of Prosopis juliflora**
		Mechanical and Manual Removal of Invasive Species, particularly Prosopis juliflora and Lantana.		
		Chemical Control Methods to prevent regrowth.		
		Reclamation and Restoration of Affected Land with native species to restore ecosystem function.		
		Long-term Monitoring and Maintenance to prevent regrowth of invasive species and ensure the establishment of native vegetation.		

Objective	Main Activities	Sub Activities	Risks and Impacts	Mitigation Measures
		Capacity Building and Training for community members and forest managers on the management and control of invasive species to ensure sustainable practices.		
	Undertake/upscale ecosystem specific interventions for control and management of invasive species e.g. Prosopis juliflora and lantana	Site Assessment and Prioritization of those most affected by invasive species and determining ecosystem-specific interventions.		
		Manual and Mechanical Removal for Prosopis juliflora and Lantana to prevent their spread and facilitate rehabilitation.		
		Biological and Chemical Control Methods to curb the spread of invasive species.		
		Ecosystem-Specific Restoration Activities to restore biodiversity.		
		Capacity Building and Community Engagement in the long-term management and monitoring of invasive species to ensure sustainability.		
		Long-term Monitoring and Maintenance to prevent the re-establishment of invasive species.		

5.1 Risks and Mitigation Measures Specific to Vulnerable and Marginalized Groups (VMGs)

The KEWASIP's SEP identifies several VMGs as at risk of being negatively affected by project activities due to their vulnerabilities. Such groups often have limited access to information because of educational, linguistic, physical, social, cultural, and structural barriers. They include:

- **Women and girls:** Due to high illiteracy levels among women and girls, compared to their male counterparts, women risk being excluded in the digitalization process. This is further compounded by lower income levels among women compared to men.
- **Youth**: The youth, especially those in rural areas, are at risk due to limited access to the internet, which is required for learning and access to financial and other digital services. Affected youth groups also include those from low-income households, which cannot afford smart devices.
- **Persons with Disabilities (PWDs):** They face several challenges in their endeavor to participate in environmental conservation projects e.g., physical accessibility barriers, limited representation in decision-making, inaccessible communication, discrimination and stigma, exclusion from training and capacity building due to inaccessibility, etc.

To address these specific risks and ensure that the KEWASIP is inclusive, below tailored mitigation measures should be implemented:

- Ensure that project consultations and information dissemination actively involve all the disadvantaged and vulnerable, using accessible language and formats.
- Implement GBV prevention measures, including community awareness campaigns and support services for victims.
- Provide training and support programmes specifically targeting PWDs, youth, women and girls to bridge the gender natural resource management and environmental conservation divide.
- Ensure all trainings materials and digital platforms and services are accessible, adhering to international standards for accessibility.
- Provide alternative communication methods, such as sign language interpretation or Braille, to ensure inclusive participation in project activities.
- Collaborate with organisations supporting PWDs to tailor project interventions to their needs.
- Ensure VMGs are represented in leadership and planning committees through targeted outreach and capacity-building.
- Mandate quotas for women's representation in CBOs.
- Training women to strengthen their decision-making, technical capabilities, and participation in SLM activities.
- Ringfence a portion of financial grants to scale up women-led or -owned nature-based enterprises.

5.2 Planning and Design Considerations for Avoidance of Environmental and Social Risks and Impacts

In the early stages of subproject planning and design under KEWASIP, several measures must be implemented to avoid and minimise potential environmental and social risks and impacts. These measures focus on integrating environmental and social considerations into the design phase to prevent adverse effects and enhance the project's positive outcomes. The key measures include:

- Carefully select subproject sites to avoid environmentally sensitive areas such as wetlands, forests, and protected areas, as well as socially sensitive areas like communities with vulnerable populations. ESSF checklists are provided in *Annex 1* this ESMF to guide this process;
- Design subproject infrastructure to be physically accessible, including ramps, pathways, and accessible transportation options (universal access); and
- Design infrastructure to be resilient to climate change impacts, such as extreme weather.

6 PROCEDURES TO ADDRESS ENVIRONMENTAL AND SOCIAL ISSUES

6.1 Overview

Chapter Five presented KEWASIP's environmental and social risks and impacts. This chapter carries recommendations on systematic integration of environmental and social considerations in the planning, approval, and implementation of KEWASIP's sub-projects. It includes all the actions to be undertaken to limit, reduce or eliminate the identified potential negative risks and impacts. These actions concern the mitigation measures, control, and monitoring measures to be applied as well as the necessary support measures for awareness raising and capacity building.

The E&S management process will involve the following steps and procedures:

6.2 Environmental and Social Risk Management Procedures

The environmental and social risk management procedures will be implemented through the Project's subproject selection process. In summary, the procedures aim to do the following:

Table 6-1 Project Cycle and E&S Management Procedures

Project Stage	E&S Stage	E&S Management Procedures
a) Assessment and Analysis: Subproject identification	Screening	• During subproject identification, ensure subproject eligibility by referring to the ***Exclusion List in*** ***Table*** 6-2 below. • For all activities, use the ***Environmental and Social Screening Form (ESSF)*** to identify and assess potential environmental and social risks and impacts, and identify the appropriate mitigation measures for the subproject. • The Project Coordinating Units (PCUs) – NCPU and CPCUs – E&S Specialists and Officers will review the ESSF and categorize subprojects into Low, Moderate, or Substantial risk based on potential E&S impacts. • Identify the documentation, permits, and clearances required under the government's Environmental Regulation. • The PCUs will then submit the E&S Screening report, including risk categorization and recommended E&S instruments, to the World Bank for review and endorsement. • Subprojects involving land issues will include additional screening based on specific templates provided. • Only subprojects categorized as Low or Moderate risk will be eligible for financing.
b) Formulation and Planning: Planning for subproject activities, including human and budgetary resources and monitoring measures	Preparation of E&S safeguard instruments	• Based on **E&S Screening report**, adopt and/or prepare relevant environmental and social procedures and plans e.g. ESBS, ESMPs, ESIAs, ARAPs, etc. • For activities requiring ESBS, ESIAs, ESMPs, and ARAP, submit the first five (5), for prior review and no objection by the World Bank, prior to initiating bidding processes [for subprojects involving bidding

Project Stage	E&S Stage	E&S Management Procedures
		processes) and/or launching activities (for subproject activities not subject to bidding)]. The ESIA process in Kenya is summarized in Annex B. • Ensure that the contents of the ESIAs, ESMPs, and ARAP are shared with relevant stakeholders in an accessible manner and consultations are held with the affected communities in accordance with the SEP. • Complete all documentation, permits, and clearances required under the government's Environmental Regulation. • Train staff responsible for implementation and monitoring of plans. • Incorporate relevant E&S procedures and plans into contractor bidding documents; train contractors on relevant procedures and plans.
c) Implementation and Monitoring: Implementation support and continuous monitoring for projects	Implementation and monitoring	• Ensure implementation of plans through site visits, regular reporting from the field, and other planned monitoring. • Monitor and report on compliance with the E&S management plans and national E&S regulations. • Utilize the Grievance Redress Mechanism (GRM) to track, address, and resolve grievances from affected parties. • Continue awareness raising and/or training for relevant staff, volunteers, contractors, communities. • The NPCU will regularly report on ESMF, ESCP, SEP, and overall E&S compliance to the World Bank in quarterly progress reports.
d) Review and Evaluation: Qualitative, quantitative, and/or participatory data collection on a sample basis	Completion and evaluation	• Assess whether plans have been effectively implemented. • Ensure that physical sites are properly restored. • Conduct a final review and evaluation of E&S performance for each subproject, ensuring all mitigation measures have been effectively implemented.

More detail for each stage is provided below.

6.2.1 Subproject Assessment and Analysis – E&S Screening

As a first step, all proposed activities should be screened to ensure that they are within the boundaries of the Project's eligible activities, and they are not considered as activities listed on the E&S Exclusion List in the table below.

Table 6-2 Exclusion List

- Weapons, including but not limited to mines, guns, ammunition, and explosives.
- Support of production of any hazardous good, including alcohol, tobacco, and controlled substances
- Forestry related activities including— (a) Clearance of forest areas; (b) Reforestation and afforestation with alien species; (c) Introduction of alien species; (d) Excisions of gazetted forests; (e) Conversion of forests for whatever purposes; and (f) Any projects located within forest reserves such as construction of dams or other control structures that flood large areas.
- Activities that have the potential to cause any significant loss or degradation of critical natural habitats, whether directly or indirectly, or which would lead to adverse impacts on natural habitats.
- Purchase or use of banned/restricted pesticides, insecticides, herbicides, and other dangerous chemicals (banned under national law and World Health Organization (WHO) category 1A and 1B pesticides).
- Activities that involve the use of international waterways.
- Any activity affecting known physical cultural heritage such as graves, temples, churches, historical relics, archeological sites, or other cultural structures.
- Activities that may cause or lead to forced labor or child abuse, child labor exploitation or human trafficking, or subprojects that employ or engage children, over the minimum age of 14 and under the age of 18, in connection with the project in a manner that is likely to be hazardous or interfere with the child's education or be harmful to the child's health or physical, mental, spiritual, moral, or social development.
- Any activity that will cause physical relocation of households or will require the use of the doctrine of eminent domain.
- Activities/subprojects that are classified high and substantial risk according to WBG ESF.
- Activities that contravene Kenya's obligations under its international agreements.
- Activities that have a high probability of causing serious adverse effects to human health and/or the environment e.g., construction of major civil structure covering ecologically sensitive area, etc.
- Activities that may affect lands or rights of indigenous people or other vulnerable minorities.
- Activities in "disputed areas".
- Activities that limit access for women and PWDs to project benefits (e.g., public offices with no ramps, inaccessible websites and ICT equipment, etc.).

As a second step, the PCUs will use the ***E&S Screening Form*** to identify and assess relevant environmental and social risks specific to the activities and identify the appropriate mitigation measures. The Screening Form lists the various mitigation measures and plans that may be relevant for the specific activities (such as ESBS, ESMP, ESIA, the Labor Management Procedures (LMP), Chance Find Procedures, etc.)

The CPUs will also identify the documentation, permits, and clearances required under the government's Environmental Regulation.

6.2.2 Subproject Formulation and Planning – E&S Planning

Based on the process above and the Screening Form, the CPUs will adopt the necessary environmental and social management measures already included in this ESMF (such as ESBSs, IPPs, LMP, etc.) or develop relevant site-specific environmental and social management plans.

Site-specific ESMPs tailored to the unique challenges of each watershed, each watershed will be prepared by the CPUs, among other applicable documents. The CPUs will provide approval and compile ESMPs and other applicable forms. The contents of the ESMPs will be shared with relevant stakeholders in an accessible manner, and consultations will be held with the affected communities on the environmental and social risks and mitigation measures. Final E&S risk management instruments will be disclosed on the NCPU website. If certain subprojects or contracts are being initiated at the same time or within a certain location, an overall ESMP covering multiple subprojects or contracts can be prepared. Some moderate risk

subprojects may also benefit from the preparation of a site-specific ESIA prior to the preparation of an ESMP.

The first five (5) ESMPs/ESIAs (or the first five (5) ESMPs/ESIAs in each category of subproject, or a different number as agreed upon with the World Bank) will be submitted to the World Bank for prior review and no-objection. After these initial reviews, the World Bank and the PCUs will reassess whether further ESMPs/ESIAs or specific categories of ESMPs/ESIAs (for example, those exceeding a certain budget or involving types of activities) will require prior review.

The PCUs will also ensure that all documentation, permits, and clearances required under the government's Environmental Regulation are completed and approved before any project activities commence. The National environmental impact assessment procedure is summarized in Annex B.

At this stage, staff involved in the various subproject activities must receive appropriate training in their specific tasks' environmental and social management plans. The NPCU will provide this training to field staff to ensure they are fully informed of their responsibilities and the necessary mitigation measures.

Moreover, the CPUs must ensure that all selected contractors, subcontractors, and vendors are fully aware of and incorporate the relevant environmental and social mitigation measures into their standard operating procedures for civil works. The CPUs will train contractors to guarantee their understanding and compliance with these measures. Contractors will also be required to cascade this training to their subcontractors and vendors, ensuring that all parties involved in the project are aligned with the environmental and social requirements.

Finally, the CPUs will ensure that the entities or communities responsible for the ongoing operation and maintenance of the investments have received adequate training on the environmental and social management measures applicable during the operations stage. This training will help ensure that the sustainability of the project's benefits is maintained and that any potential environmental and social risks during the operation phase are effectively managed.

6.2.3 Implementation and Monitoring – E&S Implementation

During the implementation, the CPUs will conduct regular monitoring visits to ensure that all E&S mitigation measures are effectively implemented. The CPUs will oversee the implementation of these measures whilst ensuring that all contractors involved in subproject activities adhere to the E&S risk management plans specified in the project documents. Moreover, the NPCU will carry out the mid-term E&S compliance Audit of the Project, three years after effectiveness.

The CPUs will establish a comprehensive monitoring mechanism that includes routine site visits, regular reporting, and the use of mobile devices for real-time monitoring, especially for projects with numerous subproject locations. This will facilitate timely data collection and reporting on the implementation of E&S mitigation measures. Monitoring visits will be conducted monthly or more frequently if required by the nature of the subproject activities or if specific risks are identified. Contractors will be responsible for implementing the E&S risk management measures on the ground, under the direct oversight of the CPUs. Contractors must provide regular reports on compliance with E&S measures, including any incidents or deviations from the prescribed plans.

The CPUs will ensure that all monitoring practices include a focus on the environmental and social risks identified in the ESMF. At a minimum, the reporting will include (i) the overall implementation of E&S risk management instruments and measures, (ii) any E&S issues arising as a result of project activities and how these issues will be remedied or mitigated, including timelines, (iii) Occupational Health and Safety (OHS) performance (including incidents and accidents), (iv) community health and safety (CHS), (v) stakeholder engagement updates, in line with the SEP, (vi) public notification and communications, (vii) progress on the implementation and completion of project works, and (viii) summary of grievances/ beneficiary feedback

received, actions taken, and complaints closed out, in line with the SEP. Reports from the local levels will be submitted to the NPCU at the national level, where they will be aggregated and submitted to the World Bank on a biannual basis.

Throughout the Project implementation stage, the CPUs will continue to provide training and awareness raising to relevant stakeholders, such as staff, selected contractors, and communities, to support the implementation of the E&S risk management mitigation measures.

The CPUs will also track grievances and beneficiary feedback as part of the monitoring process. This will be used to assess the effectiveness of the E&S mitigation measures and adjust as needed. The CPUs will ensure that the GRM is functioning effectively and that all complaints are addressed promptly and satisfactorily.

Lastly, if the NPCU becomes aware of a serious incident in connection with the project, which may have significant adverse effects on the environment, the affected communities, the public, or workers, it should notify the World Bank within 48 hours of becoming aware of such incident. A fatality is automatically classified as a serious incident, as are incidents of forced or child labour, abuses of community members by project workers (including gender-based violence incidents), violent community protests, or kidnappings. CPCUs should notify the NPCU of such incident within 24 hours of occurrence. Following notification, NCPU will ensure that appropriate investigations are promptly conducted to establish the root cause of the incident and formulate corrective actions that will prevent recurrence of a similar incident.

6.2.4 Review and Evaluation – E&S Completion

Upon completion of Project activities, the NPCU will review and evaluate progress and completion of project activities and all required E&S mitigation measures. Especially for civil works, the NPCU will monitor activities about site restoration and landscaping in the affected areas to ensure that the activities are done to an appropriate and acceptable standard before closing the contracts, in accordance with measures identified in the ESMPs and other plans. The sites must be restored to at least the same condition and standard that existed prior to commencement of works. Additionally, the NPCU will carry out a closeout E&S compliance audit of the Project three (3) Months to Project closure. Any pending issues must be resolved before a subproject is considered fully completed. The NPCU will prepare the completion report describing the final status of compliance with the E&S risk management measures and submit it to the World Bank.

6.3 Technical Assistance Activities

The NPCU will ensure that the consultancies, studies (including feasibility studies, if applicable), capacity building, training, and any other technical assistance activities under the Project are carried out in accordance with Terms of Reference acceptable to the Bank, that are consistent with the ESSs. They will also ensure that the outputs of such activities comply with the Terms of Reference.

7 IMPLEMENTATION ARRANGEMENTS, TRAINING AND CAPACITY BUILDING

7.1 Implementation Arrangements

The NPCU at the SDF will lead and coordinate KEWASIP activities at the national level and will be responsible for supervising the CPCUs and other beneficiaries in the implementation of environmental and social standards.

The NPCU will provide guidance and oversight in the creation and implementation of E&S documents by the CPCUs and beneficiaries. The NPCU will be accountable for reporting to both the World Bank and the National Project Steering Committee (NPSC) on all KEWASIP activities and progress.

Additionally, the KEWASIP NPCU will lead implementation of the project's sub-components and oversee core project-related fiduciary functions, including financial management (FM), procurement, and project-related M&E. It will also consolidate overall project reporting, working closely with all stakeholders. The NPCU will be staffed with necessary experts, including a dedicated Project Coordinator, FM, Procurement, ESS (already seconded from relevant Ministries, Departments, and Agencies) and M&E specialists, as well as technical specialists in various project areas who will liaise with core technical partners daily. The project will ensure that the technical experts hired transfer their knowledge and provide hands-on training to SDF staff to ensure sustainability after project completion.

Table 7-1 summarises the roles and responsibilities regarding the implementation arrangements for environmental and social management.

Table 7-1 Implementation Arrangements

Level/Responsible Party	Roles and Responsibilities
National/SDF NPCU	• Provide support, oversight, and quality control to field staff working on environmental and social risk management. • Collect, review, and provide quality assurance and approval to Screening Forms and ESMPs/ESIAs as relevant. Keep documentation of all progress. • Oversee overall implementation and monitoring of environmental and social mitigation and management activities, compile progress reports from local levels/subprojects, and report to the World Bank on biannual basis. • Train national and county level staff and contractors who will be responsible for implementing the ESMF. • Ensure that all bidding and contract documents include all relevant E&S management provisions per screening forms, ESMPs, and ESIAs. • Promptly notify the World Bank of any incident or accident related to the Project with significant adverse effects, including SEA/SH cases. • Develop internal incidents and accidents reporting procedures and prepare reports on incidents or accidents, proposing measures to address and prevent recurrence. • Require contractors and supervising firms to provide monthly monitoring reports on Environmental, Social, Health and Safety (ESHS) performance and submit these to the World Bank. • Support and supervise beneficiaries in preparing, disclosing, consulting upon, adopting, and implementing subproject-specific appropriate Environmental and Social Instruments. • Coordinate with beneficiaries on ESHS mitigation and monitoring. • Provide specific training to contractor workers and beneficiaries on monitoring, reporting, waste management, GRM, and OHS as needed. • Develop and manage the project GRM, ensuring complaint lodging and feedback channels are functional.

Level/Responsible Party	Roles and Responsibilities
	• Carry out mid-term and closeout E&S compliance audits of the Project.
County/CPCUs	• Oversee project execution, consolidate plans, and monitor activities • Ensure subproject activities do not fall under the Exclusion List. Fill out Screening Forms for relevant subproject activities and submit forms to the national level. • If relevant, complete site-specific ESMPs/ESIAs for subproject activities and submit forms to the national level. • Oversee daily implementation and monitoring of environmental and social mitigation measures, and report progress and performance to the national level monthly. • Provide training to local contractors and communities on relevant environmental and social mitigation measures, roles, and responsibilities. • Actively organize and coordinate SEP implementation activities at local level. • Manage the GRM at local level, ensuring complaint lodging and feedback channels are functional.
Local contractors	• Comply with the Project's environmental and social mitigation and management measures as specified in ESMPs, ESIAs, and contract documents, as well as national and local legislation. • Take all necessary measures to protect the health and safety of workers and community members, and avoid, minimize, or mitigate any environmental harm resulting from project activities. • Provide monthly monitoring reports on ESHS performance in accordance with the metrics specified in bidding documents and contracts. • Disseminate and create awareness within their workforce on environmental and social risk management compliance for effective implementation. • Report on E&S compliance and any incidents to the NPCU/local level teams and provide documentation as required. • Promptly notify the NPCU and World Bank of any incident or accident related to the Project which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers. Major issues (fatal accidents, injuries) will be reported to the NPCU within 24 hours of occurrence and Bank within 48 hours.
Community/Community Based Organizations (CBOs)	• Represent beneficiary communities at the grassroots and ensure participatory identification, preparation, and implementation of restoration and livelihood sub-projects. • Prioritize the inclusion of vulnerable and marginalized groups (VMGs) to enhance social and economic participation in targeted rural areas.

7.2 Proposed Training and Capacity Building

The NPCU assumes overall responsibility for implementing all the project E&S safeguard instruments. However, CPCUs and contractors will be responsible for the actual implementation of prescribed mitigation measures. To ensure these measures are effectively implemented, all contractors, NPCU and CPCU staff, and NEMA County Directors and DOSHS County Offices and SRIM County Coordinators (play a crucial role in monitoring and ensuring compliance at the county level) involved in these tasks must be competent and have appropriate education, training, and experience. To achieve this, the NPCU will conduct comprehensive training and education activities to meet project E&S performance expectations. As such, the project will initially evaluate training needs related to overall E&S management.

Table 7-2 Proposed Training and Capacity Building Approach

Level	Responsible Party	Audience	Topics/Themes that May Be Covered
NPCU: National level	World Bank	NPCU staff responsible for overall implementation of ESMF.	ESMF and approach: • Identification and assessment of E&S risks • Selection and application of relevant E&S risk management measures/instruments • E&S monitoring and reporting • Incident and accident reporting • Application of Code of Conduct, incident reporting, SEA/SH mitigation • Application of SEP and the grievance/beneficiary feedback mechanism. • Requirements of applicable WBG EHS Guidelines • Climate change resilience measures in project planning and implementation. • Understanding of E&S risks
County level	NPCU national staff	County level staff Contractors	ESMF and approach: • Identification and assessment of E&S risks • Selection and application of relevant E&S risk management measures • ESMP implementation monitoring and reporting • Incident and accident reporting • Application of Code of Conduct, incident reporting, SEA/SH mitigation • Application of SEP and the grievance/ beneficiary feedback mechanism • Handling of e-waste and other hazardous materials • Community health and safety risk management
Community level	NPCU staff	Community members	• Basic OHS measures and PPE • Community health and safety issues • Worker Code of Conduct • SEA/SH issues, prevention, measures • Grievance redress • Workers' grievance redress • Environmental awareness and conservation practices • Cultural heritage preservation during construction • Gender equality and inclusion in project benefits.

7.3 Estimated Budget

The following table lists estimated cost items for the implementation for the ESMF, which have been included in the overall project budget.

Table 7-3 ESMF Implementation Budget

Activity/Cost Item	Potential Cost (USD)
Training for staff (venue, travel, refreshments etc.)	100,000.00
Training for contractors (venue, travel, refreshments, etc.)	50,000.00
Training for project beneficiaries (venue, travel, refreshments, etc.)	100,000.00
Printing of awareness raising materials / grievance redress materials	20,000.00
Software for data collection / supervision / monitoring / grievance redress	30,000.00
Preparation of site-specific ESMPs and other site-specific plans and mid-term and close-out audits	200,000.00
Cost of obtaining clearances or permits	50,000.00
Implementation of site-specific ESMPs and other site-specific plans	100,000.00
Environmental and social staff (for different levels)	150,000.00
Travel and accommodation budget for environmental and social staff site visits	100,000.00
External monitoring or supervision consultant	100,000.00
TOTAL	**1,000.000.00**

8 STAKEHOLDER ENGAGEMENT, DISCLOSURE, AND CONSULTATIONS

A separate Stakeholder Engagement Plan (SEP) has been prepared for the Project, based on the World Bank's Environmental and Social Standard 10 on Stakeholder Engagement. The SEP is available at XXX.

This ESMF, as well as the SEP and the Environmental and Social Commitment Plan (ESCP) that have been prepared for this project, have been disclosed in draft form for stakeholder consultations on the following link XXXXX. Sample feedback from stakeholder consultations is highlighted in Table 8-1 below. Detailed feedback is provided in *Annex I*.

The SEP includes provisions for grievance management.

Table 8-1 Sample Feedback from Stakeholder Consultations

ESS	Aspect	Responses
ESS1: Assessment & Management of Environmental and Social Risks and Impacts	Key environmental and social issues affecting the ecosystems:	• **Environmental** – Forest degradation for charcoal production, prolonged droughts, climate change, encroachment of protected areas, livestock overstocking, sand harvesting, water scarcity, forest fires (accidental and deliberate) during dry seasons, misinformation on forest/ parks boundaries, unsustainable honey harvesting using fires by hunter gatherer communities, Uncontrolled access to and harvesting of forest resources (firewood, water, sandalwood and cedar tree species in Matthews ranges among others), poaching, Gully erosion, Deforestation, Invasive species, Water pollution and scarcity, etc. • **Social** – High poverty levels forcing communities to burn charcoal unsustainably, high illiteracy levels among the local communities, lack of awareness and sensitization among the communities on forest boundaries, conservation and protection practices, urbanization, Cultural and lifestyle practices like pastoralism that causes migration into protected areas to feed on shrubs when pasture is scarce.
	Impact of environmental challenges on community livelihoods and public health	• Reduced integrity of rangelands due to invasive species affecting capacity to produce pasture. • Deforestation leading to drying of water sources (sprigs and shallow wells). • Reduced tree species populations (e.g. Prunus Africana and Olea Africana, etc.)
	Actions or interventions best to address these challenges	• Construction of soil conservation structures like circular bands and gabions • Reseeding of rangelands • Reforestation • Strengthening institutions at community level • Farm forestry • Harvest and commercialization of Prosopis juliflora. • Awareness creation and capacity building. • Regular audits of rehabilitation exercises • Protection of rehabilitated sites • Support nature-based enterprises (NBEs)
ESS2: Labour and Working Conditions	Community members role in managing and restoring ecosystems	• Communities have roles in tree nurseries, surveillance and protection of ecosystems. • Roles in transitioning to livelihood options that are environmentally friendly. • Communities can provide land and labour for restoration. • Communities can be involved in development of natural management plans (PFMPs and SCMPs).

ESS	Aspect	Responses
		• Communities can help in the formation and registration of community groups that can be used as platforms for project implementation. • Collaboration between neighbouring communities (the Badasa and Songa) in alerting authorities on bandits crossing the forest. • Construction of local water harvesting structures to trap water during rainy seasons for domestic and livestock use.
ESS4: Community Health and Safety	Health risks that might arise from ecosystem changes, such as flooding or increased erosion	• Human-Wildlife Conflict (HWC) because of competition for pasture and water resources and encroachment into wildlife corridors. • Increased death from landslides during rainy seasons. • Inaccessibility to toilets has led to pollution of water sources from human waste being washed into rivers leading to outbreak of diseases. • Increased waterborne diseases • Accidents • Death
ESS5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement	Existing land tenure systems	• Community land • Freehold/lease in urban areas
	Procedures followed when land acquisition is required. (are there cases of voluntary land donations?)	• Community consultations through the existing National Administration structure of Chief, ACC and DCC. • Signing of a form of consent for voluntary land donations for project activities. **Note:** Restrictions to such land have the potential to cause conflicts therefore mechanisms on levels of restrictions should be discussed and agreed upon to allow for sustainable access.
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.	Interaction of communities with regulators in accessing and managing ecosystems like water sources	• Within protected areas, registered groups such as CFAs and WRUAs are used however, outside protected areas, elders are used in accessing and management of these ecosystems. Access rights are mainly misused as the communities' overharvest forest resources and participate in illegal activities. • Population pressure has increased demand for forest resources leading to over-utilization.
ESS7: Indigenous Peoples	Protocols or structures that guide access and management of culturally significant areas	• Fencing • Land ownership documents like title deeds • Community scouts • Controlled grazing

ESS	Aspect	Responses
ESS10: Stakeholder Engagement and Information Disclosure	Preferred way to receive updates on project impacts related to ecosystems	• Committee meetings and workshops • Publishing reports • Social media • County departments • Community barazas organized by local administration
	Grievance Mechanism to address grievances about ecosystem impacts, such as forest degradation or water scarcity.	Use of existing structures community governance structures such as village elders.
Gender and Social Inclusion	Influence of gender roles on access to and use of ecosystems like forests and rangelands in your community	• Women largely collect fuel wood • Younger men take livestock into the forest during dry seasons
	Protections that can be put place to prevent exploitation in labour roles within ecosystems	Legal frameworks and labour laws
	Strategies to ensure effective involvement of women, youth, PWD and marginalized groups be in ecosystem conservation efforts	• Involvement in all stages of the project • No discrimination within community groups

ANNEXES

Annex A: Subproject Environmental & Social Screening Form (ESSF)

This form will be completed during identification of project activities by the Environment and Social (E&S) Specialists in National Project Coordination Unit (NPCU) to screen for the potential E&S risks and impacts of a proposed subproject. It will help the NPCU in: (i) identifying the relevant E&S Standards (ESS); (ii) establishing an appropriate E&S risk rating for these subprojects; and (iii) specifying the type of E&S social assessment required; including specific instruments/plans. The completed forms will be signed, and the record stored.

This form will allow the NPCU to form an initial view of the potential risks and impacts of a subproject**. It is not a substitute for project-specific E&S assessments or specific mitigation plans.**

Screening Date	
Subproject Name	
Subproject Location	
Subproject Proponent	
Estimated Budget	
Start/Completion Date	

Questions	Answer		ESS relevance	If these risks "Yes" are present, Apply	Comment
	Yes	No			
Does the subproject involve civil works including new construction, expansion, upgrading or rehabilitation of facilities?			ESS1	ESMF	
Does the subproject involve long-term, permanent and/or irreversible adverse impacts (e.g., loss of major natural habitat);	*		ESS1	ESMF	
Propose the introduction of exotic species that can certainly become invasive and harmful to the environment?	*		ESS6	ESMF	
Will the subproject be in protected areas and areas of ecological significance including critical habitats, key biodiversity areas and internationally recognized conservation sites?	*		ESS1, ESS6	ESMF	
Does the subproject involve significant adverse social impacts and may give rise to significant social conflict.	*		ESS1	SEP, IPP, SMP	
Does the subproject involve *involuntary resettlement, land acquisition, and/or the taking of shelter and other assets* belonging to local communities or individuals?	*		ESS5	ARAP, SEP	

Questions	Answer		ESS relevance	If these risks "Yes" are present, Apply	Comment
	Yes	No			
Will the activities affect lands or rights of VMGs or other vulnerable minorities.	*		ESS5	ARAP, SEP, IPP, SESA	
Does the project propose the use of pesticides that are unlawful under national or international laws?	*		ESS1, ESS3	ESMF, SEP	
Does the project include the construction, rehabilitation and/or operation of large or complex dams?	*		ESS4	ESMF	
Will the subproject generate hazardous waste and pollutants including pesticides and contaminate lands that would require further studies on management, minimization and control and compliance to the country and applicable international quality standards?			ESS3	ESMF	
Does the subproject involve recruitment of workers including direct, contracted, primary supply, and/or community workers?			ESS2	ESMF, SEP, IPP	
Will the subproject adversely affect working conditions and health and safety of workers or potentially employ vulnerable categories of workers including women or child labor?			ESS2	ESMF, SEP	
Does the subproject produce the conditions for or include activities involving harmful or exploitative forms of forced labor/harmful child labor?			ESS2	ESMF, SEP, LMP	
Does the subproject have a GRM in place, to which all workers have access, designed to respond quickly and effectively?			ESS10	SEP	
Does the subproject involve use of security or military personnel during construction and/or operation of project infrastructure and related activities?			ESS4	SMP	
Will the activities have high probability of causing serious adverse effects to human health and/or the environment?			ESS4	ESMF, IPP, SESA	
Does the subproject involve trans-boundary impacts including those that would require further due diligence and notification to downstream riparian states?	*		ESS1	ESMF	
Will the subproject affect Indigenous Peoples that would require further due diligence, free, prior and informed consent (FPIC) and documentation of development plans?			ESS7	IPP	
Will the sub-project be in areas that considered to have archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values or contains features considered as critical cultural heritage?	*		ESS8	ESMF, Chance finds procedures	

Questions	Answer		ESS relevance	If these risks "Yes" are present, Apply	Comment
	Yes	No			
Does the project area present considerable Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA) risk?			ESS1	ESMF, GBVAP	

∗ The exclusion list of the sub-projects. If any of these parameters are "Yes", the sub-project is excluded from financing under the program.

High Risk Activities/Exclusion List

- Weapons, including but not limited to mines, guns, ammunition, and explosives.
- Support of production of any hazardous good, including alcohol, tobacco, and controlled substances
- Forestry related activities including— (a) Clearance of forest areas; (b) Reforestation and afforestation with alien species; (c) Introduction of alien species; (d) Excisions of gazetted forests; (e) Conversion of forests for whatever purposes; and (f) Any projects located within forest reserves such as construction of dams or other control structures that flood large areas.
- Activities that have the potential to cause any significant loss or degradation of critical natural habitats, whether directly or indirectly, or which would lead to adverse impacts on natural habitats.
- Purchase or use of banned/restricted pesticides, insecticides, herbicides, and other dangerous chemicals (banned under national law and World Health Organization (WHO) category 1A and 1B pesticides).
- Activities that involve the use of international waterways.
- Any activity affecting known physical cultural heritage such as graves, temples, churches, historical relics, archeological sites, or other cultural structures.
- Activities that may cause or lead to forced labor or child abuse, child labor exploitation or human trafficking, or subprojects that employ or engage children, over the minimum age of 14 and under the age of 18, in connection with the project in a manner that is likely to be hazardous or interfere with the child's education or be harmful to the child's health or physical, mental, spiritual, moral, or social development.
- Any activity that will cause physical relocation of households or will require the use of the doctrine of eminent domain.
- Activities/subprojects that are classified high and substantial risk according to WBG ESF.
- Activities that contravene Kenya's obligations under its international agreements.
- Activities that have a high probability of causing serious adverse effects to human health and/or the environment e.g., construction of major civil structure covering ecologically sensitive area, etc.
- Activities that may affect lands or rights of indigenous people or other vulnerable minorities.
- Activities in "disputed areas".
- Activities that limit access for women and PWDs to project benefits (e.g., public offices with no ramps, inaccessible websites and ICT equipment, etc.).

Conclusions:

Proposed subproject is eligible for financing under the project criteria: .....

Proposed Environmental and Social Risk Rating according to GOK (High, Medium, or Low).

Provide Justification: .....

Proposed E&S Management Instrument(s): .....

Certification:

Reviewed and approved by:			
KEWASIP Environment Safeguards Specialist **Name:**		**KEWASIP Social Safeguards Specialist** **Name:**	
Date	**Signature**	**Date**	**Signature**

Annex B: ESIA Procedures in Kenya

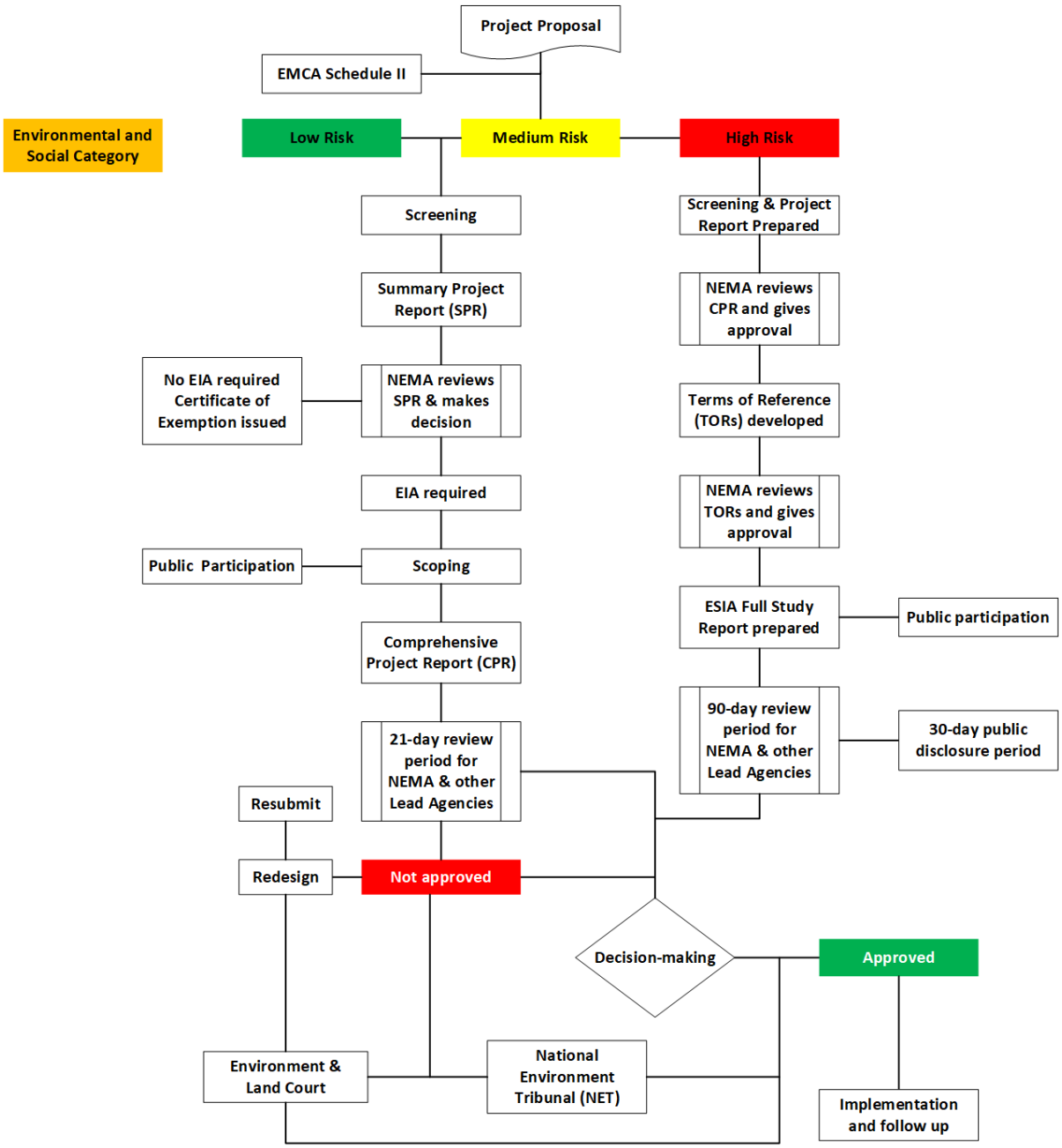


Figure 0-1 ESIA Procedures in Kenya

Annex C: General Environmental Management Conditions for Construction Contracts

General[37]

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental and Social Management Plan (ESMP) for the works he is responsible for. The Contractor shall inform himself about such an ESMP and prepare his work strategy and plan to fully consider relevant provisions of that ESMP. If the Contractor fails to implement the approved ESMP after written instruction by the Supervising Engineer (SE) to fulfill his obligation within the requested time, the Owner reserves the right to arrange through the SE for execution of the missing action by a third party on account of the Contractor.
2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in an ESMP. In general, these measures shall include but not be limited to:
    a. Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, asphalt mixing sites, dispersing coal ashes, vibrating equipment, temporary access roads, etc. to ensure safety, health and the protection of workers and communities living in the vicinity dust producing activities.
    b. Ensure that noise levels emanating from machinery, vehicles, and noisy construction activities (e.g., excavation, blasting) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.
    c. Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to works being carried out.
    d. Prevent bitumen, oils, lubricants, and wastewater used or produced during the execution of works from entering rivers, streams, irrigation channels and other natural water bodies/reservoirs, and ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.
    e. Prevent and minimize the impacts of quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands, local communities and their settlements. In as much as possible restore/rehabilitate all sites to acceptable standards.
    f. Upon discovery of ancient heritage, relics or anything that might or believed to be of archeological or historical importance during the execution of works, immediately report such findings to the SE so that the appropriate authorities may be expeditiously contacted for fulfillment of the measures aimed at protecting such historical or archaeological resources.
    g. Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, and collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.
    h. Implement soil erosion control measures to avoid surface run off and prevents siltation, etc.
    i. Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.
    j. Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long-distance transportation.

[37] These conditions are Good International Industry Practices (GIIPs) on embedding environmental management conditions in construction contracts. As such they become part of the deliverables (KPIs). More elaborate conditions can be found on UNDP website: *https://procurement-notices.undp.org/view_file.cfm?doc_id=198317*

k. Ensure public safety and meet traffic safety requirements for the operation of work to avoid accidents.

3. The Contractor shall indicate the period within which he/she shall maintain status on site after completion of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed.
4. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan / strategy to ensure effective feedback of monitoring information to project management so that impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.
5. Besides the regular inspection of the sites by the SE for adherence to the contract conditions and specifications, the Owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental authorities may carry out similar inspection duties. In all cases, as directed by the SE, the Contractor shall comply with directives from such inspectors to implement measures required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

Section 1: Worksite/Campsite Waste Management

6. All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals shall be bunded to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed of at designated disposal sites in line with applicable government waste management regulations and WBG ESF requirements.
7. All drainage and effluent from storage areas, workshops and camp sites shall be captured and treated before being discharged into the drainage system in line with applicable government water pollution control regulations.
8. Used oil from maintenance shall be collected and disposed off appropriately at designated sites or be re-used or sold for re-use locally.
9. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.
10. Construction waste shall not be left in stockpiles along the road but removed and reused or disposed of on a daily basis.
11. If disposal sites for clean spoil are necessary, they shall be in areas, approved by the SE, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, spoil materials should be placed in low-lying areas and should be compacted and planted with species indigenous to the locality.

Material Excavation and Deposit

12. The Contractor shall obtain appropriate licenses/permits from relevant authorities to operate quarries or borrow areas.
13. The location of quarries and borrow areas shall be subject to approval by relevant local and national authorities, including traditional authorities if the land on which the quarry or borrow areas fall in traditional land.
14. New extraction sites:
    a. Shall not be in the vicinity of settlement areas, cultural sites, wetlands or any other valued ecosystem component, or on high or steep ground or in areas of high scenic value and shall not be located less than 1km from such areas.
    b. Shall not be located adjacent to stream channels wherever possible to avoid siltation of river channels. Where they are located near water sources, borrow pits and perimeter drains shall surround quarry sites.

c. Shall not be in archaeological areas. Excavations in the vicinity of such areas shall proceed with great care and shall be done in the presence of government authorities having a mandate for their protection.
d. Shall not be in forest reserves. However, where there are no other alternatives, permission shall be obtained from the appropriate authorities, and an environmental impact study shall be conducted.
e. Shall be easily rehabilitated. Areas with minimal vegetation cover such as flat and bare ground, or areas covered with grass only or covered with shrubs less than 1.5m in height, are preferred.
f. Shall have clearly demarcated and marked boundaries to minimize vegetation clearing.

15. Vegetation clearing shall be restricted to the area required for safe operation of construction work. Vegetation clearing shall not be done more than two months in advance of operations.
16. Stockpile areas shall be in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exits from workings.
17. The Contractor shall deposit any excess material in accordance with the principles of these general conditions, and any applicable EMP, in areas approved by local authorities and/or the SE.
18. Areas for depositing hazardous materials such as contaminated liquid and solid materials shall be approved by the SE and appropriate local and/or national authorities before the commencement of work. Use of existing, approved sites shall be preferred over the establishment of new sites.

Section 2: Rehabilitation and Soil Erosion Prevention

19. To the extent practicable, the Contractor shall rehabilitate the site progressively so that the rate of rehabilitation is like the rate of construction.
20. Always remove and retain topsoil for subsequent rehabilitation. Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.
21. Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2m high are recommended.
22. Re-vegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.
23. Locate stockpiles where they will not be disturbed by future construction activities.
24. To the extent practicable, reinstate natural drainage patterns where they have been altered or impaired.
25. Remove toxic materials and dispose of them in designated sites. Backfill excavated areas with soils or overburden that is free of foreign material that could pollute groundwater and soil.
26. Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.
27. Ensure reshaped land is formed to be inherently stable, adequately drained, and suitable for the desired long-term land use and allow natural regeneration of vegetation.
28. Minimize the long-term visual impact by creating landforms that are compatible with the adjacent landscape.
29. Minimize erosion by wind and water both during and after the process of reinstatement.
30. Compacted surfaces shall be deep ripped to relieve compaction unless subsurface conditions dictate otherwise.
31. Revegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of plant species for rehabilitation shall be done in consultation with local research institutions, forest department and the local people.

Water Resources Management

32. The Contractor shall at all costs avoid conflicting with water demands of local communities.

33. Develop hydrogeological water studies for water abstraction following relevant GOK requirements and WBG EHS Guidelines.
34. Abstraction of both surface and underground water shall only be done with the consultation of the local community and after obtaining a permit from the relevant Water Authority.
35. Abstraction of water from wetlands shall be avoided. Where necessary, authority must be obtained from relevant authorities.
36. Temporary damming of streams and rivers shall be done in such a way avoids disrupting water supplies to communities downstream and maintains the ecological balance of the river system.
37. No construction water containing spoils or site effluent, especially cement and oil, shall be allowed to flow into natural water drainage courses.
38. Wash water from washing out of equipment shall not be discharged into water courses or road drains.
39. Site spoils and temporary stockpiles shall be located away from the drainage system, and surface run off shall be directed away from stockpiles to prevent erosion.

Traffic Management

40. Develop traffic management plans (TMP) for subprojects on road reserves.
41. Location of access roads/detours shall be done in consultation with the local community especially in important or sensitive environments. Access roads shall not traverse wetland areas.
42. Upon the completion of civil works, all access roads shall be ripped and rehabilitated.
43. Access roads shall be sprinkled with water at least five times a day in settled areas, and three times in unsettled areas, to suppress dust emissions.

Blasting

44. Blasting activities shall not take place less than 2km from settlement areas, cultural sites, or wetlands without the permission of the SE.
45. Blasting activities shall be done during working hours, and local communities shall be consulted on the proposed blasting times.
46. Noise levels reaching the communities from blasting activities shall not exceed 90 decibels.
47. Conduct OHS risk assessment in relation to storage and use of explosives.

Disposal of Unusable Elements

48. Unusable materials and construction elements such as electro-mechanical equipment, pipes, accessories, and demolished structures will be disposed of in a manner approved by the SE. The Contractor must agree with the SE which elements are to be surrendered to the Client's premises, which will be recycled or reused, and which will be disposed of at approved landfill sites.
49. As far as possible, abandoned pipelines shall remain in place. Where for any reason no alternative alignment for the new pipeline is possible, the old pipes shall be safely removed and stored at a safe place to be agreed upon with the SE and the local authorities concerned.
50. AC-pipes as well as broken parts thereof must be treated as hazardous material and disposed of as specified above.
51. Unsuitable and demolished elements shall be dismantled to a size fitting on ordinary trucks for transport.

Health and Safety

52. Develop OHS plans for all project activities to assure health and safety.
53. In advance of the construction work, the Contractor shall mount an awareness and hygiene campaign. Workers and residents shall be sensitized on health risks particularly of AIDS.
54. Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points.
55. Construction vehicles shall not exceed maximum speed limit of 40km per hour within working zones.

Repair of Public and Private Property

56. Should the Contractor, deliberately or accidentally, damage property, he shall repair the property to the owner's satisfaction and at his own cost. For each repair, the Contractor shall obtain from the owner a certificate that the damage has been made good satisfactorily to indemnify the Client from subsequent claims.
57. In cases where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client must be informed by the Contractor through the SE. This compensation is in general settled under the responsibility of the Client before signing the Contract. In unforeseeable cases, the respective administrative entities of the Client will take care of compensation.

Contractor's Health, Safety and Environment Management Plan (HSE-MP)

58. Within 6 weeks of signing the Contract, the Contractor shall prepare an EHS-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an ESMP for the works. No works shall begin without approval of the HSE-MP. The Contractor's EHS-MP will serve two main purposes:
    a. For the Contractor, for internal purposes, to ensure that all measures are in place for adequate HSE management, and as an operational manual for his staff.
    b. For the Client, supported where necessary by a SE, to ensure that the Contractor is fully prepared for the adequate management of the HSE aspects of the project, and as a basis for monitoring of the Contractor's HSE performance.
59. The Contractor's EHS-MP shall provide at least:
    a. a description of procedures and methods for complying with these general environmental management conditions, and any specific conditions specified in an ESMP;
    b. a description of specific mitigation measures that will be implemented to minimize adverse impacts;
    c. a description of all planned monitoring activities (e.g., sediment discharges from borrow areas) and the reporting thereof; and
    d. the internal organizational, management and reporting mechanisms put in place for such.
60. The Contractor's EHS-MP will be reviewed and approved by the Client before start of the works. This review should demonstrate if the Contractor's EHS-MP covers all the identified impacts and has defined appropriate measures to counteract any potential impacts.

HSE Reporting

61. The Contractor shall prepare monthly progress reports to the SE on compliance with these general conditions, the project ESMP if any, and his own EHS-MP. An example format for a contractor HSE report is given below. It is expected that the Contractor's reports will include information on:
    a. HSE management actions/measures taken, including approvals sought from local or national authorities;
    b. Problems encountered in relation to HSE aspects (incidents, including delays, cost consequences, etc. as a result thereof);
    c. Lack of compliance with contract requirements on the part of the Contractor;
    d. Changes of assumptions, conditions, measures, designs, and actual works in relation to HSE aspects; and
    e. Observations, concerns raised and/or decisions taken about HSE management during site meetings.
    f. Worker grievances x
62. It is advisable that reporting of significant HSE incidents be done "as soon as practicable" and in accordance with the ESIRT procedure.". All incidents should be reported to NPCU within 24 hours and

the World Bank within 48 hours. Such incident reporting shall therefore be done individually. Also, it is advisable that the Contractor keep his own records on health, safety and welfare of persons, and damage to property. It is advisable to include such records, as well as copies of incident reports, as appendixes to the bi-weekly reports. Example formats for an incident notification and detailed report are given below. Details of HSE performance will be reported to the Client through the SE's reports to the Client.

Training of Contractor's Personnel

63. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, any project EMP, and his own EHS-MP, and are able to fulfil their expected roles and functions. Specific training should be provided to those employees that have responsibilities associated with the implementation of the EHS-MP. General topics should be:
    a. HSE in general (working procedures);
    b. emergency procedures; and
    c. social and cultural aspects (awareness raising on social issues).

Cost of Compliance

64. It is expected that compliance with these conditions is already part of standard good workmanship and state of art as generally required under this Contract. The item "Compliance with Environmental Management Conditions" in the Bill of Quantities covers these costs. No other payments will be made to the Contractor for compliance with any request to avoid and/or mitigate an avoidable HSE impact.

Example Format: HSE Report

Contract:

Period of reporting:

HSE management actions/measures:
Summarize HSE management actions/measures taken during period of reporting, including planning and management activities (e.g., risk and impact assessments), HSE training, specific design and work measures taken, etc.

HSE incidents:
Report on any problems encountered in relation to HSE aspects, including its consequences (delays, costs) and corrective measures taken. Include relevant incident reports.

HSE compliance:
Report on compliance with Contract HSE conditions, including any cases of non-compliance.

Changes:
Report on any changes of assumptions, conditions, measures, designs, and actual works in relation to HSE aspects.

Concerns and observations:
Report on any observations, concerns raised and/or decisions taken regarding HSE management during site meetings and visits.

Signature (Name, Title Date):

Contractor Representative

Example Format: HSE Incident Notification

Provide within 24 hours to the Supervising Engineer

Originators Reference No:

Date of Incident: ***Time:***

Location of incident:

Name of Person(s) involved:

Employing Company:

Type of Incident:

Description of Incident:
Where, when, what, how, who, operation in progress at the time (only factual)

Immediate Action:
Immediate remedial action and actions taken to prevent reoccurrence or escalation.

Signature (Name, Title, Date):
Contractor Representative

Basic project Information	
Implementing Agency	
Name of Contractor	
Name of Supervisor/Manager	
Client's Project Safeguards Specialists:	
Preliminary information of the incident	
Preliminary classification of the incident	
Description of the incident	
Where and when did the incident occur?	
Are the basic facts of the incident clear and uncontested, or are there conflicting versions?	
Is the incident still ongoing or is it contained?	
Is loss of life or severe harm involved?	
Immediate Actions Taken (Contractor)	
Follow Up Actions by NPCU	

Annex D: Chance Finds Procedure

Purpose

The purpose of this procedure is to ensure the protection of tangible and intangible cultural heritage within Kenya including potential archaeological finds discovered during the construction phase of KEWASIP.

Scope

The "chance finds" procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance

The "chance finds" procedure is intended to ensure compliance with relevant provisions of the National Museums and Heritage Act of 2006, especially Section 30 that requires all discoveries of buried artifacts to be reported to the National Museums of Kenya (NMK). The procedure of reporting set out below must be observed so that heritage remains reported to the NMK are correctly identified in the field.

Responsibility

- Operator: To exercise due caution if archaeological remains are found
- Foreman: To secure site and advise management timeously
- NPCU Social Specialist: To determine safe working boundary and request inspection.
- Archaeologist: To inspect, identify, advise management, and recover remains/item.

Procedure

Table 0-1 Chance Finds Procedure

Mitigation/Monitoring Action	Responsibility	Schedule
Should a heritage site or archaeological site be uncovered or discovered during the construction phase of the project, the "chance finds" procedure should be applied. The details of this procedure are highlighted below:	NPCU	Where necessary
• If operating machinery or equipment: stop work. • Identify the site with flag tape. • Determine GPS position if possible. • Report findings to foreman	Person identifying archaeological or heritage material	
• Report findings, site location and actions taken to **NPCU**. • Cease any works in immediate vicinity.	Foreman	
• Visit site and determine whether work can proceed without damage to findings. • Determine and mark exclusion boundary. • Site location and details to be added to project GIS for field confirmation by archaeologist	NPCU	
• Inspect site and confirm addition to project GIS. • Advise the NMK and request written permission to remove findings from work area • Recover, packaging and labelling of findings for transfer to NMK	Archaeologist	

Mitigation/Monitoring Action	Responsibility	Schedule
Should human remains be found, the following actions will be required: • Apply the chance find procedure as described above. • Schedule a field inspection with an archaeologist to confirm that remains are human. • Advise and liaise with the NMK and Police • Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory or reburied in consultation with the concerned community members.	Archaeologist NMK Police Community elders	

Annex E: Generic Environmental and Social Management Plan (ESMP) – Stand Alone Report

The report should be in English and must be clear and concise. The reports will be in a format acceptable to the World Bank, and SDF. The ESMP report will be expected to include (but not limited to) the following, which are also indicative of the depth of the scope:

- **Executive Summary**: Concisely discuss significant findings and recommended actions
- **Introduction**: This shall include a concise description of the proposed subproject background, project objectives, scope, and objectives of ESMP
- **Description of the Project Activities**: The consultant shall give the proposed project an introduction covering a short description of the project area, project activities (where possible during construction, operations, and maintenance) — including the project execution methodology and technology to be used for the project.
- **Policy, Legal and Administrative/Institutional Framework**: This shall include a detailed description of World Bank Group ESF and the National laws and regulations environment the project will operate. The level of compliance with the applicable laws and regulations shall be clearly stated.
- **Environmental and Social Baseline conditions:** The Consultant is required to collect, and present baseline information on the existing physical, biological, and social cultural environment of, within and around the project sites/area of influence.
- **Environmental and Social Impacts identification and assessment including cumulative impact assessment**; the consultant shall identify and summarize all anticipated significant positive and adverse environmental SDF and social impacts, because of interaction between the proposed project and environment that are likely to bring changes in the baseline environmental conditions.
- **Impact Mitigation Measures**: The consultant shall come up with proposals of feasible and cost-effective mitigation measures, taking into consideration designs and equipment descriptions used for the negative impacts that could result from construction activities.
- **Environmental and Social Management Plan**:
    - The Consultant shall develop a comprehensive environmental and social management plan comprising of a programme of assessing and managing the impacts during site preparation, construction, operation, and decommissioning phases.
    - This will provide time frames and implementation mechanisms, reporting responsibilities, description and technical details of monitoring measures, assessment of the institutional needs, staffing requirements and cost outlay for implementation. The plan should show how management and mitigation methods are phased with project implementation.
    - The plan shall also include measures to manage occupational health and safety risks and to ensure safety in the working environment for the employees and the communities adjacent to the project sites and project affected people.
- **Institutional Arrangements, Change of Management, Capacity Development and Training**: The consultant is expected to review the institutional arrangements, responsibilities, and procedures within SDF to effectively carry out implementation of environmental project components and mitigation measures and recommend appropriate measures to address capacity gaps identified.
- **Conclusions and Recommendations**.
- **References**: All sources of information shall be clearly documented with clear names and proper locations under references.
- **Appendices**: Design Concepts, record of the public consultations, ToR for the ESMP etc.

Annex F: Generic ESIA TOR for a Subproject

Introduction and context

This section will be completed at the appropriate time and will provide the necessary information with respect to the context and methodological approaches to be undertaken.

Objectives of the study

This section will (i) outline the objectives and particular activities of the planned activity; and (ii) indicate which activities are likely to have environmental and social impacts that will require appropriate mitigation (Adapted to specific activities).

Terms of Reference

1. To undertake an Environmental and Social Impact Assessment (ESIA) for proposed project to meet the requirements of the WBG Environmental and Social standards (ESSs) and Environmental Health and Safety Guidelines (EHSGs) and the Kenya legal requirements;
2. To provide relevant environment and social baseline conditions on the proposed project area,
3. Review the relevant WBG's ESSs triggered for the project, the national legal requirements and guidelines that the project will be implemented;
4. Assess and predict the potential site specific environmental and social impacts of the project during site preparation, construction and operation phase;
5. Develop proposed feasible and cost-effective mitigation measures for the potential adverse environmental and social impacts as well as safety risk associated with the proposed project site activities;
6. Assess safeguards capacity of SDF and recommend appropriate measures to address gaps through capacity building during implementation of the project; and
7. Develop Environmental and Social management and monitoring plans and prepare appropriate budget for Environmental, Social, Health and Safety mitigation measures for the project.

ESIA Report Outline

The ESIA report will be expected to include (but not limited to) the following, which are also indicative of the depth of the scope:

1. **Executive Summary**. Concisely discuss significant findings and recommended actions;
2. **Introduction.** This shall include a concise description of the proposed project background, project objectives, scope and objectives of ESIA;
3. **Description of the Project Activities and identification of associated facilities if any.** The consultant shall give the proposed project an introduction covering a short description of the project area, project activities (where possible during construction, operations and maintenance) – including the project execution methodology and technology to be used for the project;
4. **Policy, Legal and Administrative/Institutional Framework**. This shall include a detailed description of World Bank Group's Environmental and Social standards (ESSs) triggered by the project and the National laws and regulations environment the project will operate. The level of compliance to the applicable laws and regulations shall be clearly stated;

5. **Environmental and Social Baseline Conditions.** The Consultant is required to collect, and present baseline information on the existing physical, biological and social cultural environment of, within and around the project sites/area of influence;
6. **Public/Stakeholder's Consultations:** Public consultation is an integral part of the environmental assessment process, as reflected in the requirements of the World Bank ESS 10 and relevant national legislation. The public consultations should include community meetings, interviews, questionnaires, or a combination of these depending on the stakeholders;
7. **Analysis of Alternatives;** Including a description of the analysis of alternative process aimed at combining technical-financial aspects with socio-environmental considerations for the section of the preferred options and avoiding significant **impacts;**
8. **Environmental and Social Impacts identification and assessment**. The consultant shall identify and summarize all anticipated significant positive and adverse environmental and social impacts, because of interaction between the proposed project and environment that are likely to bring changes in the baseline environmental conditions. Moreover, cumulative impacts should be assessed at this stage;
9. **Impact Mitigation Measures**. The consultant shall come up with proposals of feasible and cost-effective mitigation measures, taking into consideration designs and equipment descriptions used for the negative impacts that could result from construction activities;
10. **Environmental and Social Management Plan**
    a. The Consultant shall develop a comprehensive environmental and social management plan comprising of a programme of assessing and managing the impacts during site preparation, construction, and operation and decommissioning phases.
    b. This will provide time frames and implementation mechanisms, reporting responsibilities, description and technical details of monitoring measures, assessment of the institutional needs, staffing requirements and cost outlay for implementation. The plan should show how management and mitigation methods are phased with project implementation.
    c. The plan shall also include measures to manage occupational health and safety risks and to ensure safety in the working environment for the employees and the communities adjacent to the project sites and project affected people.
    d. ESMP monitoring.
    e. Costs of ESMP implementation and monitoring.
11. **Institutional Arrangements, Capacity Development and Training.** The consultant is expected to review the institutional arrangements, responsibilities, and procedures within ICT Authority to effectively carry out implementation of environmental project components and mitigation measures and recommend appropriate measures to address capacity gaps identified.
12. **Conclusions and Recommendations**;
13. **References**. Documents, whether published or not, that were used to prepare the studies and outputs; list of related reports; and
14. **Appendices**. E.g., Design Concepts, record of the public consultations, ToR for the ESIA, etc.

Qualification of the Consultant

The Consultant will ensure that there will be a sociologist working with him/her in undertaking the ESIA. (Bachelor's Degree in Sociology or related field from recognized university and 5-10 years post-graduation experience and at least three (3) experience in large scale infrastructure project. The sociologist should be conversant with the WBG's ESSs).

The Consultant will have the following minimum qualifications:

- MSc. Degree in Environmental Sciences or a BSc. Environmental Engineering from a recognized University
- NEMA Registered Lead EIA Expert or equivalent
- Minimum overall experience of 10 years, with at least 5 years' experience on similar projects in Sub-Saharan Africa
- OHS expertise
- Participation in an ESIA for natural resource management and environmental conservation project.

ESIA Deliverables and Reporting

The ESMP will be prepared in English. The assignment shall be carried out and completed within sixty (60 days) from the contract signing to NEMA licensing.

Table 0-2 ESIA Deliverables

Report	Description	Submittal date	Copies	
			Hard	Soft
Report 1:	Acceptable inception report including; clear description of understanding the assignment, methodology to be used and work plan	5 days after contract effective date.	2	2
Report 2:	Submission of Draft ESIA Report	30 days after contract effective date.	2	2
Report 3:	Submission of acceptable final ESIA Report to NEMA	40 days after contract effective date	8	1

Annex G: Guidance for Preparation of Waste Management Plans (WMPs)

Section 19 of the Sustainable Waste Management Act (SWMA) provides guidance on the preparation of WMPs by non-county actors. The guidance is elaborated below:

WMP DURATION

Each WMP shall be for a duration of three years.

WMP MONITORING REPORT AND CONTENTS

This monitoring report shall be prepared annually and submitted to NEMA.

The contents of a WMP monitoring report shall be:

a. the actual quantities of waste generated by KEWASIP;
b. the waste management methods applied by KEWASIP; and
c. any other information that NEMA may require.

SPECIFIC GUIDANCE ON PREPARATION OF WMPS

KEWASIP shall:

a. collect, segregate and dispose of or cause to be disposed of the waste in accordance with this Act;
b. shall segregate waste by separating hazardous waste from non-hazardous waste and dispose of the waste in a facility provided by the county government or the NEMA;
c. transfer the waste to a person who is licensed to transport and dispose of the waste in accordance with this Act;
d. clean up and restore the site it was using to its natural state;
e. prepare a waste management plan and integrate it in its strategies and plans; and
f. provide waste segregation receptacles at its premises and sites for organic, plastic and general dry waste.

Annex I: Stakeholder Consultation Outcomes

See separate Stakeholder Engagement Report.

Annex J: Stakeholder Consultation Participants

See separate Stakeholder Engagement Meeting Participants List.

Annex K: Stakeholder Consultation Photos

Photo 1 Stakeholder Consultation in Kwale County

Photo 2 Stakeholder Consultation at Kambu, Makueni County

STATE DEPARTMENT FOR FORESTRY (SDF)

KENYA WATERSHED SERVICES IMPROVEMENT PROJECT (KEWASIP)

(P178850)

DRAFT

LABOUR MANAGEMENT PROCEDURE (LMP)

MARCH 2025

TABLE OF CONTENTS

ACRONYMS

CBOs	Community-Based Organizations
CCoC	Contractor Code of Conduct
CPCU	County Project Coordination Unit
EHSGs	Environmental, Health and Safety Guidelines
ESCP	Environmental and Social Commitment Plan
ESF	Environment and Social Framework
ESIA	Environmental and Social Impact Assessment
ESIRT	Environmental and Social Incident Reporting Toolkit
ESSs	Environmental and Social Standards
GBV	Gender-Based Violence
GIIP	Good International Industry Practice
GOK	Government of Kenya
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
ICERD	Convention on the Elimination of All Forms of Racial Discrimination, 1965
ICoC	Individual Code of Conduct
ILO	International Labour Organisation
IPs	Indigenous People
KEFRI	Kenya Forestry Research Institute
KEWASIP	Kenya Watershed Services Improvement Project
KFS	Kenya Forest Service
LMP	Labor Management Procedures
MCDAs	Ministries, Counties, Departments, and Agencies
NPCU	National Project Coordination Unit
OHS	Occupational Health and Safety
PAD	Project Appraisal Document
PDO	Project Development Objective
PSC	Project Steering Committee
PWDs	People with Disabilities
SEA/SH	Sexual Exploitation and Abuse/ Sexual Harassment
SEP	Stakeholder Engagement Plan
SLWM	Sustainable Land and Water Management
VMGs	Vulnerable and Marginalized Groups

1 INTRODUCTION

1.1 Overview

This Labor Management Procedures (LMP) has been developed to identify and manage risks associated with labor and working conditions under the Kenya Watershed Services Improvement Project (KEWASIP, the Project). The LMP identifies labor requirements in line with applicable laws, standards and sets out the procedures for addressing labor conditions and risks associated with the KEWASIP in line with the World Bank Environmental and Social Standard 2 (ESS2), Government of Kenya (GOK) legal frameworks, and Good International Industry Practice (GIIP).

1.2 Purpose and Objectives of the LMP

The purpose of this LMP is to facilitate the identification of different types of workers that are likely to be involved in the KEWASIP and set out the ways in which those workers will be managed in accordance with the requirements of ESS2, GIIP and the GOK labor laws.

The LMP will also provide a methodical and coherent approach to dealing with the labor-related issues, impacts and risks likely to emanate from the implementation of this Project whilst facilitating the identification of diverse types of Project workers likely to be involved in the Project.

Consistent with ESS2, this LMP seeks to:

- Promote safety and health at work;
- Promote the fair treatment, non-discrimination and equal opportunity of Project workers;
- Protect Project workers, including vulnerable workers such as women, persons with disabilities (PWDs), Indigenous People (IPs), children (of working age, in accordance with this ESS);
- Prevent the use of all forms of forced labor and child labor;
- Support the principles of freedom of association and collective bargaining of Project workers; as necessary, in a manner consistent with respective national law; and
- Provide Project workers with accessible means to raise workplace concerns.

1.3 KEWASIP Description

1.3.1 Project Development Objective (PDO)

To expand the area under sustainable watershed and landscape management for livelihoods and conservation in the project areas.

PDO Level Indicators

PDO level indicators are:

- **Outcome: Improved Watershed Management**
    - PDO1: Hectares of terrestrial and aquatic areas under enhanced conservation and management (WB SC)
        - PDO 1a: Private and Community lands with SLM applied and under improvement management; and
        - PDO 1b: Rehabilitation of degraded gazetted forests.
    - PDO 2: Net Greenhouse Gas (GHG) emissions per year (WB SC).
- **Outcome: Livelihoods**
    - PDO 3: Beneficiaries with enhanced resilience to climate risk (of which female) (WB SC)
        - PDO 3a: Beneficiaries adopting SLM (of which female); and

- ♣ PDO 3b: Beneficiaries with livelihood support (of which female).

1.3.2 Project Beneficiaries

The KEWASIP beneficiaries will be classified as direct or indirect beneficiaries depending on where they live (i.e., inside or adjacent to project areas) and how they are affected by project interventions and activities (e.g., training, reduced risks, livelihoods, spillover effects, etc.). Beneficiaries will be further classified with the aim of measuring the Project's gender and Vulnerable and Marginalized Groups (VMGs) inclusion results.

1.3.3 Implementation Arrangements

The KEWASIP will adopt a three-tiered approach representing implementation at national, county, and community levels as shown in the organigram below:

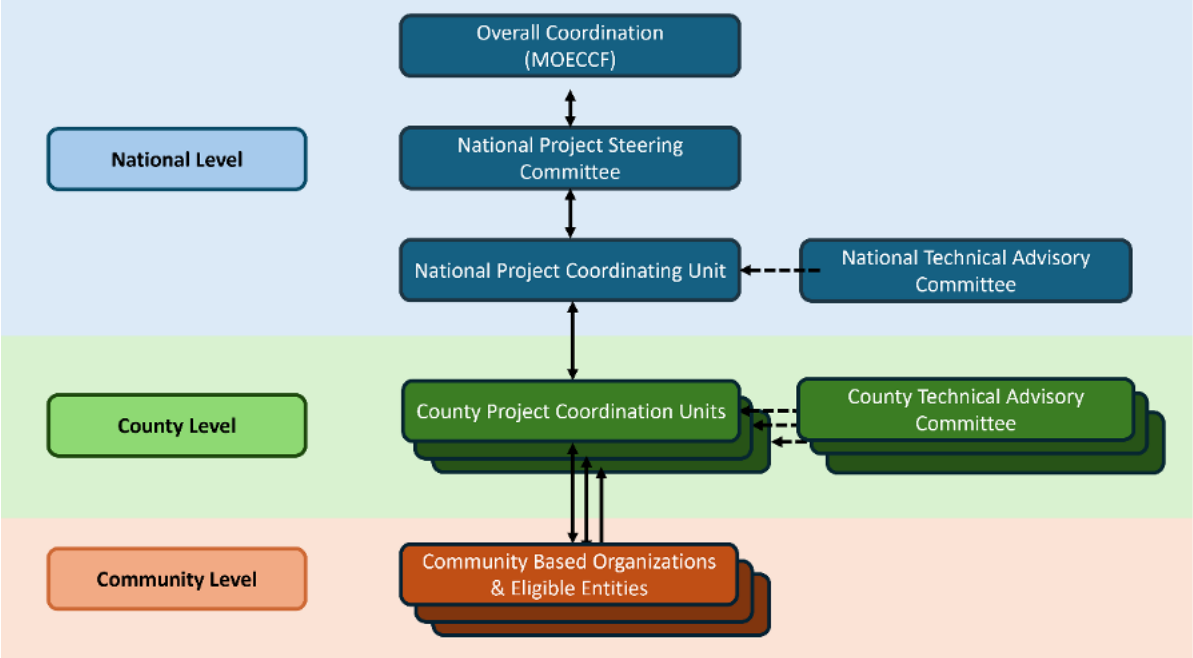


Figure 1-1 The KEWASIP Implementation Arrangements

1.3.4 Project Components, Subcomponents and Main Activities

Table 1 Project Components, Subcomponents and Main Activities

Component	Subcomponent	Main Activities
Component 1: Policy, legal and regulatory frameworks	Sub-Component 1A: Strengthening watershed management institutions and governance	Cascade and harmonize of the conflicting county policies and legislation on management of watersheds and landscapes in pilot counties (facilitating functioning of specific Value Chains)
		Develop / review of national key policies legislation strategies and standards and enhance management of watershed landscapes and ecosystems
		Development of Matching grant manual
		Develop, Review and Update Management Plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.) for the targeted watersheds
	Sub-Component 1B: Development and Implementation of Integrated Watershed Monitoring System	Develop and roll-out a monitoring and data sharing framework
		ICT and Monitoring Infrastructure improvement
		Capacity building of the county focal persons (CFCs and county teams) and implementing institutions to be ToTs for the integrated monitoring platform and new adopted technologies
		Strengthen institutional and technical capacities for implementation of the (KEWASIP) Project at county and community levels
		Establish knowledge hubs (serve as training centre and monitoring centres-linkage with Maarifa Centre and Equipment for County Model Knowledge Management Offices-Restoration focus)
		Train communities on seed collection, tree nursery establishment and management by KEFRI
		Training of Farmer Field Schools facilitators in the project counties on aspects of Tree nursery, agroforestry, SLM etc. by KFS

Component	Subcomponent	Main Activities
	Sub-Component 1C: Sustainable financing mechanisms and investments for watersheds and landscapes management	Finalization of the National PES framework
		Design and develop the PES including the governance and institutional structures (1Carbon Credit and 1 Water Fund) for select priority project area
		Undertake feasibility studies to inform the design of the PES Schemes
		Provide seed fund to operationalize the payment of ecosystem services (Carbon Credit or Water Funds) including undertaking of project registration and certification processes)
		Establish public private partnership in PES
		Award and recognize identified best practices
		Provide small grants to local community groups to scale up their nature-based enterprises
Component 2: Green Horizons: Sustainable Landscape and Watershed Revitalization.	Sub-Component 2A. Sustainable Landscape and Watershed Management in Private and Community Lands	Review of the existing plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, fire management plans, etc.) in the selected watersheds and put them in an integrated county level watershed management plan for the targeted sub-watersheds in the county.
		Establish county level panels of experts assisting community groups in formulation of proposals and providing TA support during implementation and larger scale county investments
		Establishing county level matching grant committees
		Facilitating Participatory Integrated Community Development (PICD) process at ward level/ sub-watershed levels
		Matching grant support to community groups for conservation, rehabilitation, SLM, CSA and livelihood support (including complementing extension (FFS) support).
		Where needed, group management capacity support (financial, record keeping, etc. Training)
		Erosion protection investments at erosion hotspots that need direct action

Component	Subcomponent	Main Activities
		Establishment of Water Storage Infrastructure (water pans) identified in the plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.)
		Sensitize communities for wildlife compatible land use
		Restore vegetation cover and water pans in wildlife corridors
		Map, document and monitor public/private and community lands under Prosopis juliflora.
		Train, awareness creation and demonstrate technologies for the control, management and utilization of Prosopis juliflora
		Undertake/upscale ecosystem specific interventions for control and management of Prosopis juliflora
	Sub-Component 2B. Restoration of gazetted forests	Collect and distribute quality tree seeds for rehabilitation and restocking of forests and other landscapes.
		Procure equipment to enhance seed testing and research e.g. germination chambers
		Produce seedlings appropriate for different agroecological zones e.g. bamboo and Melia volkensi.
		Undertake mapping of intervention areas in the selected watersheds (Public Forests, National Parks etc.)
		Undertake expansion of production capacity of existing KFS tree nurseries in the selected counties
		Undertake planting of seedlings to rehabilitate degraded ecosystems
		Undertake rehabilitation of degraded natural forest through protection (temporary enclosures) for natural regeneration
		Develop systems and procure equipment for control and management of tree pests and diseases

Component	Subcomponent	Main Activities
		Develop systems and procure equipment for disaster surveillance, preparedness and response mechanism e.g. fire
		Conduct studies on ecological impact of invasive species on forest regeneration and biodiversity e.g. Prosopis juliflora and lantana, etc.
		Manage and reclaim land covered with invasive species in gazetted forest e.g. Prosopis juliflora and lantana, etc.
		Undertake/upscale ecosystem specific interventions for control and management of invasive species e.g. Prosopis juliflora and lantana

2 OVERVIEW OF LABOR USE ON THE PROJECT

2.1 Number of Project Workers

The total number of workers to be employed on the project is estimated at 20,000. The workers will be in the categories of direct workers, contracted workers, primary supply workers and community workers.

2.2 Project Workers Categorization

The project will have the following categories of workers:

- **Direct Workers**[1] **–** The Project will engage the following types of workers as "direct workers":
  - **NPCU:** SDF has established an NPCU to oversee the Project implementation. The NPCU has a Project Coordinator who oversees the overall success of Project activities. The NPCU will consist of staff with cross-cutting qualifications (such as procurement officers, project accountants, safeguards officers (e.g., Environmental and Social, gender, etc.), and M&E specialists, with additional staff with the right skill set being assigned as needed;
  - **Civil Servants**: The project will involve numerous GOK employees, including directors and staff of various Ministries, Counties, Departments, and Agencies (MCDAs); and
  - **Consultants**: national and/or international consultants, who will be hired on part-time basis. The consultants will mainly be involved in the execution of technical tasks/studies across the different Project components.
- **Contracted Workers**[2] – Contracted workers will be employed or engaged by third parties, such as contractors, subcontractors, and service providers/consultants required for project implementation including in provision of technical assistance, and construction of soil and water conservation infrastructure and renovation and retrofitting of knowledge hubs. Migrant workers may also be contracted by the Project.
- **Primary supply workers**[3] – The Project will use primary supply workers in the implementation of subproject activities across all components. Contracted firms and agencies will be required to deliver the various supplies e.g. ICT equipment, stone, cement, sand, solar panels, wire mesh, tree seedlings, etc.
- **Community workers** – The Project will use community workers. They will provide voluntary labor as an in-kind contribution to the subprojects to ensure ownership and sustainability.

2.3 Estimated Number of Workers Per Category

Table 2 Worker Category, Description, Estimated Numbers and Timing

Category	Description	Estimated Number	Mode of engagement	Timing
Direct workers	NPCU Staff	Over 15 officers: Project Coordinators, Assistant Coordinators, ESHS officers, FM officers, legal officers, Procurement officers, Gender officers, M&E officers, GRM officers, etc.	Fulltime	All Project phases
	Civil servants from MCDAs	Over 100 GOK employees	Fulltime	All Project phases

	Consultants	A pool of 50 consultants to conduct various technical studies.	Part-time	All Project phases
Contracted workers	Civil works Contractor or sub-contractor employees	At least 500 involved	Temporary	Construction and operation phase
	Unskilled labourers from the community within the project sites.	At least 5,000 involved	Temporary	Construction phase
	Security workers	At least 50 guarding project sites	Temporary	All Project phases
Primary supply workers	Workers for suppliers of goods and services to the project	100-150 workers employed by the KEWASIP suppliers	Temporary	All Project phases
Community workers	Voluntary community labour	At least 10,000 workers	Temporary	All project phases

This LMP will apply to all Project workers including full-time, part-time, migrant, temporary and seasonal. Although international consultants may be recruited to offer specific services, their conditions of engagement will be as contained in their contracts and TORs. Community workers, however, will not have contracts but will be identified by the opinion leaders'/elders/ in consultation with community member. Nonetheless, they will be provided with clear terms of work (time of work, amount to be paid, and means of payment) to avoid potential exploitation.

3 ASSESSMENT OF KEY POTENTIAL LABOR RISKS

3.1 Overview

The safety of workers is an important consideration when hiring and deploying workers. Potential risks related to labour and working conditions, such as work-related discrimination, gender-based violence /sexual exploitation and abuse, sexual harassment (GBV/SEA/SH), and occupational safety and health (OHS) risks will be assessed and addressed by the NPCU and CPCUs using recruitment guidelines, procedures, and appropriate OHS measures, relevant provisions of the Employment Act, 2007, public service regulations and Human Resource (HR) manual. Training is essential in this area, as is the development of techniques and procedures which guarantee, to the greatest extent possible, the safety of workers exposed to dangerous situations. The process involves:

- Identifying hazards and conducting a risk evaluation for health and safety at work;
- Determine what protection measures are to be taken and, if necessary, what kind of Personal protective equipment (PPE) is to be used;

- Maintain a register of incidents/accidents at work. These shall include near misses, first aid incidents and incidents which have led to a period of incapacity for work of longer than three working days;
- Draw up reports on accidents at work suffered by the project workers; and
- The requirement to secure insurance for all risks that can be covered.

3.2 Potential Labor Risks and Mitigation

Table 3 Component Key Labour Risks and Mitigation

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
Component 1: Policy, legal and regulatory frameworks	Sub-Component 1A: Strengthening watershed management institutions and governance	Cascade and harmonize of the conflicting county policies and legislation on management of watersheds and landscapes in pilot counties (facilitating functioning of specific Value Chains)	• SEA/SH/GBV for vulnerable workers • Discrimination and exclusion of vulnerable groups	· NPCU, CPCUs, and KFS should ensure that all sub-project activities are carried out in accordance with the guiding legal frameworks prohibiting any form of discrimination and/or harassment (directly/indirectly) against an employee to guarantee equal opportunity and non-discrimination among workers employed/engaged under all employment categories; · If migrant workers are employed, PCU should implement appropriate measures to prevent any discriminatory treatment towards them following the GBV action plan. · All workers will sign a code of conduct (CoC; · SEA/SH training for NPCU staff, TA consultant staff will continue throughout project implementation; · SEA/SH mitigation measures will be incorporated into bidding documents; · Stakeholders' consultations will properly inform communities and stakeholders of the project on SEA/SH risks; • The project grievance redress mechanism should provide multiple channels to initiate complaints, including specific procedures for SEA/SH related complaints including confidential reporting with safe and ethical documentation of SEA/SH; and • The project should maintain SEA/SH staff for NPCU, Supervision Consultants and Contractors.
		Develop / review of national key policies legislation strategies and standards and enhance management of watershed landscapes and ecosystems		
		Development of Matching grant manual		
		Develop, Review and Update Management Plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.) for the targeted watersheds		

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
	Sub-Component 1B: Development and Implementation of Integrated Watershed Monitoring System	Develop and roll-out a monitoring and data sharing framework	Private data breaches including sharing data to unintended persons	• Compliance with the provisions of the Data Protection Act, 2019 which protects personal data of individuals. • Publicization of the provisions of the Act and role of the Office of Data Protection Commissioner in handling complaints.
		ICT and Monitoring Infrastructure improvement	Lone and isolated workers	Standard Operating Procedures (SOPs) should be developed and implemented to ensure all PPE and safety measures are in place before the worker starts work. SOPs should establish, at a minimum, verbal contact with the worker at least once every hour, and ensure the worker has a capability for summoning emergency aid.
		Capacity building of the county focal persons (CFCs and county teams) and implementing institutions to be ToTs for the integrated monitoring platform and new adopted technologies		
		Strengthen institutional and technical capacities for implementation of the (KEWASIP) Project at county and community levels		
		Establish knowledge hubs (serve as training centre and monitoring centres-linkage with Maarifa Centre and Equipment for County Model Knowledge	Occupational safety and health risks (OHS): • General facility design and operation • Over-exertion • Slips and falls • Work at heights	***General facility design and operation*** *Integrity of Workplace Structures* · Surfaces, structures, and installations shall be easy to clean and maintain, and not allow for accumulation of hazardous compounds.

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
		Management Offices-Restoration focus)	• Struck by objects • Moving Machinery • Poor air quality/dust.	· Buildings shall be structurally safe, provide appropriate protection against the climate, and have acceptable light and noise conditions. · Fire resistant, noise-absorbing materials shall be used for cladding on ceilings and walls. · Floors should be level, even, and non-skid. · Heavy oscillating, rotating or alternating equipment should be in dedicated buildings or structurally isolated sections. *Severe Weather and Facility Shutdown* · Workplace structures shall be designed and constructed to withstand the expected elements for the region and have an area designated for safe refuge, if appropriate. · Standard Operating Procedures (SOPs) will be developed for the project and will include an emergency response plan, evacuation plan to be developed and implemented by PCUs and contractors. Drills to practice the procedure and plan should also be undertaken annually. *Workspace and Exit* · The space provided for each worker, and in total, should be adequate for safe execution of all activities, including transport and interim storage of materials and products. · Passages to emergency exits to always remain unobstructed. Exits will be clearly marked to be visible in total darkness. Provide a sufficient number and capacity of emergency exits for safe and orderly evacuation of the greatest number of

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				people present at any time and ensure a minimum of two exits from any work area. · Ensure inclusion in infrastructure design, facilities shall be designed and built considering the needs of disabled persons. *Fire Precautions* · Ensure workplace design prevents fires through implementation of applicable fire codes to industrial settings. Other essential measures include: · Equipping facilities with fire detectors, alarm systems, and fire-fighting equipment. The equipment will be serviced regularly, maintained in good working order and readily accessible. It should be adequate for the dimensions and use of the premises, equipment installed, physical and chemical properties of substances present, and the maximum number of people present. · Provision of manual firefighting equipment that is easily accessible and simple to use. · Install fire and emergency alarm systems that are both audible and visible. *Lavatories and Showers* · Adequate lavatory facilities (toilets and washing areas) provided for the number of people expected to work in the facility and allowances made for segregated facilities, or for indicating whether the toilet facility is “In Use” or “Vacant”. Toilet facilities should also be provided with adequate supplies of running water, soap, and hand drying devices.

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				· Where workers may be exposed to poisonous substances by ingestion and skin contact facilities for showering and changing into and out of street and work clothes will be provided. Standard operation procedures for laboratory testing and waste management plan will be developed and implemented. *Potable Water Supply* · Adequate supplies of potable drinking water will be provided from a fountain with an upward jet or with a sanitary means of collecting the water for the purposes of drinking. · Water supplied to areas of food preparation or for the purpose of personal hygiene (washing or bathing) shall meet drinking water quality standards. *Clean Eating Area* Where there is potential for exposure to poisonous substances by ingestion, suitable arrangements are to be made for the provision of clean eating areas where workers are not exposed to the hazardous or noxious substances. *Lighting* · Workplaces shall be well lit with natural light and be supplemented with sufficient artificial illumination to promote workers' safety and health and enable safe equipment operation. Supplemental 'task lighting' may be required

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				where specific visual acuity requirements will be met. · Emergency lighting of adequate intensity shall be installed and automatically activated upon failure of the principal artificial light source to ensure safe shut-down, evacuation, etc. *Safe Access* · Passageways for pedestrians and vehicles within and outside buildings shall be segregated and provide for easy, safe, and appropriate access. · Equipment and installations requiring servicing, inspection, and/or cleaning shall have unobstructed, unrestricted, and ready access. · Hand, knee and foot railings will be installed on stairs, fixed ladders, platforms, permanent and interim floor openings, loading bays, ramps, etc. · Openings will be sealed by gates or removable chains. · Covers will be installed to protect against falling items. · Ensure adequate measures to prevent unauthorized access to dangerous areas are in place and implemented. *First Aid* · Ensure qualified first aid can be always provided. Appropriately equipped first-aid stations will be established and made accessible throughout the place of work. · Where the scale of work or the type of activity being carried out so requires, dedicated and

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				appropriately equipped first- aid room(s) will be provided. First aid stations and rooms will be equipped with gloves, gowns, and masks for protection against direct contact with blood and other body fluids. · Remote sites will have documented emergency procedures for dealing with cases of trauma or serious illness up to the point at which patient care can be transferred to an appropriate medical facility. *Work Environment Temperature* The temperature in the work, rest room and other welfare facilities will, during service hours, be maintained at a level appropriate for the purpose of the facility. ***Over-exertion*** · Training of workers in lifting and materials handling techniques in construction and decommissioning projects, including the placement of weight limits above which mechanical assists or two-person lifts are necessary. · Planning work site layout to minimize the need for manual transfer of heavy loads. · Selecting tools and designing workstations that reduce force requirements and holding times, and which promote improved postures, including, where applicable, user adjustable workstations. · Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				Slips and falls · Implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths · Cleaning up excessive waste debris and liquid spills regularly · Locating electrical cords and ropes in common areas and marked corridors · Use of slip retardant footwear ***Work at heights*** · Training and use of temporary fall prevention devices, such as rails or other barriers able to support a weight of 90 kilograms, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface · Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support 2,300 kilograms (also described in this section in Working at Heights above), as well as fall rescue procedures to deal with workers whose fall has been successfully arrested. The tie in point of the fall arresting system should also be able to support 2,300 kilograms · Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				zones, as well as securing, marking, and labeling covers for openings in floors, roofs, or walking surfaces. *Struck by objects* · Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels · Conducting sawing, cutting, grinding, sanding, chipping or chiseling with proper guards and anchoring as applicable · Maintaining clear traffic ways to avoid driving of heavy equipment over loose scrap · Use of temporary fall protection measures in scaffolds and out edges of elevated work surfaces, such as handrails and toe boards to prevent materials from being dislodged · Wearing appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes ***Moving Machinery*** · Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic using one-way traffic routes, establishment of speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic · Ensuring the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				equipment operators before approaching the operating vehicle · Ensuring moving equipment is outfitted with audible back-up alarms · Using inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations. ***Dust*** • Dust suppression techniques should be implemented, such as applying water or non-toxic chemicals to minimize dust from vehicle movements • PPE, such as dusk masks, should be used where dust levels are excessive.
		Train communities on seed collection, tree nursery establishment and management by KEFRI	Exclusion	Work with a SEP and IPP for inclusion of IPs, minorities and PWDs.
		Training of Farmer Field Schools facilitators in the project counties on aspects of Tree nursery, agroforestry, SLM etc. by KFS		
	Sub-Component 1C: Sustainable	Finalization of the National PES framework	Potential Labour Risks same as those under Subcomponent 1A	See mitigation measures under Subcomponent 1A

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
	financing mechanisms and investments for watersheds and landscapes management	Design and develop the PES including the governance and institutional structures (1Carbon Credit and 1 Water Fund) for select priority project area		
		Undertake feasibility studies to inform the design of the PES Schemes		
		Provide seed fund to operationalize the payment of ecosystem services (Carbon Credit or Water Funds) including undertaking of project registration and certification processes)		
		Establish public private partnership in PES		
		Award and recognize identified best practices		
		Provide small grants to local community groups to scale up their nature-based enterprises		

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
Component 2: Green Horizons: Sustainable Landscape and Watershed Revitalization.	Sub-Component 2A. Sustainable Landscape and Watershed Management in Private and Community Lands	Review of the existing plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, fire management plans, etc.) in the selected watersheds and put them in an integrated county level watershed management plan for the targeted sub-watersheds in the county. Establish county level panels of experts assisting community groups in formulation of proposals and providing TA support during implementation and larger scale county investments Establishing county level matching grant committees Facilitating Participatory Integrated Community Development (PICD) process at ward level/ sub-watershed levels Matching grant support to community groups for conservation, rehabilitation, SLM, CSA	• Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) and Gender-Based Violence (GBV) • Child and forced labor • Labor disputes over terms and conditions of employment • Discrimination and exclusion of vulnerable groups • Non-compliance of employers to terms and conditions of employment • Labor influx related risks • Occupational health and safety risks. • Other labour related risks: o Criminal offences; o Terrorism; o Cattle rustling / Inter-tribal or communal violence which could pose a threat to project personnel; o Industrial Action leading to strike or disruption of work, social conflict, civil unrest; o Breakdown of relationships with Community groups and Committees; o Reaction of community to an incident or accident	***Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) and Gender-Based Violence (GBV)*** · NPCU should ensure that all subproject activities are carried out in accordance with the guiding legal frameworks prohibiting any form of discrimination and/or harassment (directly/indirectly) against an employee to guarantee equal opportunity and non-discrimination among workers employed/engaged under all employment categories; · Contractors and subcontractors must support equal opportunities for women and men, with a focus on equal criteria for selection, compensation, and promotion and equal application of these criteria; put in place measures to prevent harassment of project workers, including sexual harassment in the workplace; · If migrant workers are employed, NPCU should implement appropriate measures to prevent any discriminatory treatment towards them following the GBV action plan. · Contractors' workforce on all sites including schools will be lean, trained and well supervised minimizing the SEA/SH risks for the project; · All supervision consultants and contractor's workers will include full time social and gender experts and community liaison officers; · All workers will sign a code of conduct; · SEA/SH training for NPCU and CPCU staff, supervision consultants' staff and the contractor's

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
		and livelihood support (including complementing extension (FFS) support). Where needed, group management capacity support (financial, record keeping, etc. Training) Erosion protection investments at erosion hotspots that need direct action Establishment of Water Storage Infrastructure (water pans) identified in the plans (SCMPs, PFMPs, WMPs, RMPs, Protected Area Plans, Conservancies Plans, etc.) Sensitize communities for wildlife compatible land use Restore vegetation cover and water pans in wildlife corridors Map, document and monitor public/private and community lands under Prosopis juliflora.	involving project personnel or asset; o Threat of armed attack; o Theft/ Larceny.	workers will continue throughout project implementation; · SEA/SH mitigation measures will be incorporated into the Environmental and Social Management Plans (ESMPs); · Stakeholders' consultations will properly inform communities and stakeholders of the project on SEA/SH risks; · The project grievance redress mechanism should provide multiple channels to initiate complaints, including specific procedures for SEA/SH related complaints including confidential reporting with safe and ethical documentation of SEA/SH; and · The project should maintain SEA/SH staff for NPCU, Supervision Consultants and Contractors. Implement security management plan (SMP) ***Child and forced labor*** · All vacancy advertisements will clearly prescribe that child labor is not permitted and persons to be employed must meet the minimum age per labour laws (Employment Act, 2007, and Child Rights Act, 2012); · Sensitize beneficiaries/contractors on child labour policy and on negative impacts of child labor; · Certification of laborers' age (using National Identification Card, Passport, Birth Certificate or affidavit of birth in employment of workers); · Ensure that contractors, primary suppliers have and implement a Child Labor Policy to deter

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
		Train, awareness creation and demonstrate technologies for the control, management and utilization of Prosopis juliflora		employment and abuse of children in the project. Include consequences of breaching the conditions, including the possible termination of the contract. · Engage with labour inspectors/ ministry of labour to ensure effective enforcement national labour legislation, provide advice and information to help meet legal requirements including compliance with the labour laws; · Enhanced monitoring of implementation and compliance · See *Section 6 Policies and Procedures* for handling any cases of child or forced labour. ***Labor disputes over terms and conditions of employment*** The NPCU will implement this LMP which outlines how project personnel will be managed in conformity with national legal requirements, ESS2, ESS4, and other applicable WB ESF standards. The procedures specify how the labor laws will be applied to various project worker categories, how the PIU will expect third parties to manage their workforces, and how employees will be given a formal channel through which to voice complaints about their working conditions and contract terms. ***Discrimination and exclusion of vulnerable groups*** · Hiring of project workers shall be based on the principle of equal opportunity and fair treatment; · No discrimination with respect to any aspects of the employment relationship, such as recruitment
		Undertake/upscale ecosystem specific interventions for control and management of Prosopis juliflora		
	Sub-Component 2B. Restoration of gazetted forests	Collect and distribute quality tree seeds for rehabilitation and restocking of forests and other landscapes.		
		Procure equipment to enhance seed testing and research e.g. germination chambers		
		Produce seedlings appropriate for different agroecological zones e.g. bamboo and Melia volkensi.		
		Undertake mapping of intervention areas in the selected watersheds (Public Forests, National Parks etc.)		

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
		Undertake expansion of production capacity of existing KFS tree nurseries in the selected counties		and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices; · The Individual CoC containing provisions on discrimination to be signed by all workers aimed at preventing and addressing harassment, intimidation and/or exploitation, including sexual exploitation and harassment (see *template in Annex A*); Reasonable sanctions for breach of Individual CoC and related contractual obligations need to be included; and · Contractors shall provide appropriate sanitation facilities at the workplace and appropriate PPEs for women and persons with disability ***Non-compliance of employers to terms and conditions of employment*** · Provide project workers with information and documentation that is clear and understandable regarding their terms and conditions of employment; for illiterate workers simplified language will be used and the officer in-charge will read the terms and conditions to them and request them to specify if they require further clarification. This will be repeated at least twice (during induction and contract period) to ensure clarity.
		Undertake planting of seedlings to rehabilitate degraded ecosystems		
		Undertake rehabilitation of degraded natural forest through protection (temporary enclosures) for natural regeneration		
		Develop systems and procure equipment for control and management of tree pests and diseases		
		Develop systems and procure equipment for disaster surveillance, preparedness and response mechanism e.g. fire		
		Conduct studies on ecological impact of invasive species on forest regeneration and biodiversity e.g. Prosopis juliflora and lantana, etc.		

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
		Manage and reclaim land covered with invasive species in gazetted forest e.g. Prosopis juliflora and lantana, etc. Undertake/upscale ecosystem specific interventions for control and management of invasive species e.g. Prosopis juliflora and lantana		Moreover, all important advice will be provided to all workers, as necessary. · The information and documentation shall include any applicable collective agreements, including their rights related to hours of work, wages; overtime, compensation, and benefits, as well as those arising from the requirements of ESS2. · This information and documentation shall be provided at the beginning of the working relationship and when any material changes to the terms or conditions of employment occur. · The project shall also have GRMs for project workers (direct workers and contracted workers) to promptly address their workplace grievances and concerns. • All workers will be provided with written contracts. ***Labor influx related risks*** · Communication on risks of infection with HIV/AIDS shall be conducted through locally appropriate means – targeting workers, learners, and communities at least once during recruitment and thereafter once every month for staff and quarterly for communities to be conducted by Occupational Health and Safety (OHS) staff of the contractor under supervision of the PIU; · To reduce labour influx, the NPCU will require all contractors to employ unskilled and semi-skilled workers at the local level and through the local administrators.

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				· NPCU will ensure that implementation of *Individual Code of Conduct (CoC)* to be signed by project direct workers and all those contracted; and · Workers will be required to use appropriate PPEs (such as helmets, gloves and masks). ***OHS risks*** • Reference to Environmental, Health, and Safety (EHS) Guidelines is with general and industry-specific examples of Good International Industry Practice (GIIP) • Involve workers, who often have the best understanding of the conditions that create hazards and insights into how they can be controlled. • Hazards needing controls will be listed in order of priority and eliminate the hazard by removing the activity from the work process. Examples include substitution with less hazardous work, controlling the hazard at its source through use of engineering controls. • Minimizing the hazard through design of safe work systems and administrative or institutional control measures e.g. job rotation, training safe work procedures, lock-out and tag-out, workplace monitoring, limiting exposure or work duration, etc. • Providing appropriate personal protective equipment (PPE) in conjunction with training on OHS, and use

Component	Subcomponent	Main Activities	Key Potential Labour Risk	Mitigation Measures
				• Where project sites are located within the vulnerable groups area meeting ESS7 inclusion of all vulnerable people who have the relevant skills to provide labour. Sensitization will be conducted in a culturally appropriate manner and in language understandable by the local communities will be used. • Sensitize women, youth and PwD of available opportunities and ensure that project work environment is made safe for their access. • Ensure easy access to the grievance redress mechanism which is tailor made to suit the local needs.

4 BRIEF OVERVIEW OF LABOR LEGISLATION

4.1 Terms and Conditions

Kenya has a very elaborate legal framework on matters of labor and working conditions. The **Constitution of Kenya provides** several relevant clauses including *Article 2* which recognizes ratified treaties as part of the laws of Kenya. *Article 41* (on *Labor Relations*) addresses the entitlements and guarantees afforded to workers, employers and the unions, and exercisable by them within Kenya's employment regime. These entitlements are anchored on key human rights and freedoms including the right to human dignity in *Article 28*; freedom from all forms of slavery, servitude and forced labor in *Article 30*; and the right of everyone to have their privacy respected as provided for in *Article 31*. *Article 27*on non-discrimination provides for equality and prohibits discrimination on various grounds including race, sex, pregnancy, marital status, health status, ethnic or social origin, color, age, disability, religion, conscience, belief, culture, dress, language or birth.

The **Employment Act, 2007**, is Kenya's codifying legislative enactment on the laws governing employment. It addresses itself to regulating the tripartite relationship that exists between the employers, employees and the government including the State's mediator-role in safeguarding the entitlements of both parties. The *Act,* which has been amended several times, defines the fundamental rights of employees, and provides basic conditions of employment for employees, including the regulation of employment of children. As such, this Act most closely aligns with essential imperatives that are evident in World Bank ESS2. The Act has a single subsidiary legislation titled the *Employment* (*General*) *Rules, 2014,* that largely expounds on the terms and conditions of work - aside from other procedural aspects; with an entire schedule outlining the minimum rights bestowed upon employees, and another dedicated to the requisite elements of the *Policy Statement on Sexual Harassment.* The **Employment Act, 2007***,* addresses the employer-employee power-dynamic, focusing on the employer-employee engagement from the insular perspective of a direct contractual arrangement between the two parties. The assumption is that all persons who fit the descriptions of 'employer' and 'employee' are governed by this law including those implementing development projects.

The law has different approaches to defining the categories of employees, such as: by nature, and length of the employee engagements. The categories include casual employees (who are not engaged for a longer period than *24 hours* at a time), part-time, full-time employees, piece work (where the focus is the amount of work performed irrespective of the time occupied in its performance) and employees with probationary contracts (which address the formalities and length of the probationary period). In addition, the Act provides for the minimum terms and conditions of employment of an employee and grounds upon which a contract may be nullified. This is intended to discourage any arrangements that seek to undermine statutory standards. It is notable that the national laws are aligned to the requirements of ESS2.

Applicable international instruments in Kenya include International Convention on the Elimination of All Forms of Racial Discrimination, 1965 (ICERD); Convention on the Rights of the Child, 1990, (CRC); Convention on the Protection of the Rights of all Migrant Workers and Members of their Families, 1990 (ICRMW); Convention on the Rights of Persons with Disabilities; (CRPD) and Convention on the Elimination of All Forms of Discrimination against Women, 1979 (CEDAW).

The instruments of the International Labor Organization (ILO) applicable in Kenya include:

- Freedom of Association and Protection of the Right to Organize (ILO Convention 87);
- The Right to Organize and Collective Bargaining (ILO Convention 98);

- Forced Labor (ILO Convention 29);
- The Abolition of Forced Labor (ILO Convention 105);
- Minimum Age (of Employment) (ILO Convention 138); and
- Discrimination (Employment and Occupation) (ILO Convention 111).

4.2 Occupational Health and Safety

The **Occupational Safety and Health Act** (OSHA)[4] governs workplace safety and health. The law provides for *"the safety, health and welfare of workers and all persons lawfully present at workplaces and establishes the National Council for Occupational Safety and Health"*. This law is broadly concerned with potential hazards to persons in the workplace. These concerns would likely remain the same if there's only one individual likely to be affected; and thus, the standards set under the Act are largely focused upon the environmental risks to people at the workplace. Part VI (on Health-General Provisions), *Part VII (on Machinery Safety), Part VIII (on Safety-General Provisions), Part IX (on Chemical Safety), Part XI (on Health, Safety and Welfare – Special Provisions) and Part XII (on Special Applications)* provide for different occupational safety and health scenarios (in detail), with the intent of allowing for the management of the intended and unintended safety and health consequences that may be wrought by potential hazards.

The **Work Injury Benefits Act**[5] (WIBA) also addresses workplace health and safety and has been amended several times. It provides compensation to employees for work-related injuries and diseases contracted in the course of their employment. The Act provides for the compensation of 'injured' employees as well as their dependents, who may be adversely affected by the work injuries. Part III (on the Right to Compensation) addresses the entitlements and guarantees afforded in respect of compensation.

Project implementation processes will adhere to the relevant OHS legislation requirements in Kenya, including the relevant requirements of interested parties that have been identified in the ESMF and SEP. A check for legal compliance shall be undertaken to ensure that this project is compliant with the legal and other requirements, including:

- The National Occupational Safety and Health Policy, 2012;
- Occupational Safety and Health Act, 2007;
- Work Injury Benefits Act, 2007;
- HIV/AIDS Prevention and Control Act, 2006;
- WBG ESF; and
- WBG General EHS Guidelines.

The NPCU will also refer to applicable international conventions, and directives for addressing health and safety issues.This includes:

- *ILO Occupational Safety and Health Convention, 1981 (No. 155);*
- *ILO Occupational Health Services Convention, 1985 (No. 161);*
- *ILO Safety and Health in Construction Convention, 1988 (No. 167);*
- *WHO International Health Regulations, 2005;*
- *WHO Emergency Response Framework,* 2017; and
- *EU OSH Framework Directive (Directive 89/391).*

Table 4-1 provides a summary of the key regulations in Kenya and their relevance to this project.

Table 4 Regulatory Framework

#	Legislation	Provision	Relevance/Measures
1.	Public Health Act (Cap 242) revised 2012	Part III of the Public Health Act provides for the protection of human health through prevention and guarding against introduction of infectious diseases into Kenya from outside, to promote public health and prevention, limitation or suppression of infectious, communicable or preventable disease within Kenya. The Public Health - Prevention, Control and Suppression of Covid-19 Rules, 2020 provide additional regulatory requirements to this part.	The project activities may expose the workers to diseases, such as HIV/AIDS, etc. The NPCU and CPCUs will develop protocols to educate the staff on risks of infection and the control measures. It will also make provisions for support for workers who get infected while on duty.
2.	Work Injury Benefits Act, 2007	This Act provides for compensation to employees for work related injuries and diseases contracted in the course of their employment and for connected purposes	NPCU and CPCUs shall comply with part II of this Act about obligations of the employer including compensation for temporary, total or partial disablement, treatment as well as provision of first aid services to workers.
3.	Occupational Safety and Health Act, 2007	This is an Act of Parliament to provide for the safety, health and welfare of all workers and all persons lawfully present at workplaces. It applies to all workplaces where any person is at work, whether temporarily or permanently	All safety and health measures will be put in place to ensure workers are not exposed to safety and health risks during both project planning and operational phases.
4.	HIV/AIDS Prevention and Control Act, 2006	Part 11 Section 7 requires HIV/AIDS education in workplaces; specifically, provision of basic information and instruction on HIV/AIDS prevention and control	The NPCU and CPCUs will create awareness to the employees on issues related to HIV/AIDS. It will produce posters/flyers to be shared with all employees and pasted at workplaces.

#	Legislation	Provision	Relevance/Measures
5.	Gender-based violence and SEA/SH	· Abuse by workers, normalization of GBV stigma led to non-reporting, poverty forces women/girls to engage in transactional sex. · There is lack of access to services to address SEA/SH, stigma, corruption. · Several Acts exist that provide protection against GBV/ SEA/SH including: o Sexual Offences Act, 2006 o Penal Code o HIV/AIDS Prevention and Control Act, 2000 o Protection Against Domestic Violence Act, 2015 o Prohibition of Genital Mutilation Act, 2011 o National Gender and Equality Act, 2011	The project activities may expose workers to sexual harassment at the workplace and other forms of GBV. The NPCU and CPCUs will ensure that: · All workers sign the CoC. · All workers are trained on GBV/SEA/SH. · All workers are informed about the workplace GRM and the Project GRM.
7.	Employment Act, 20007	The Act covers the minimum wage, the right to leave days and rest time, and the right to work. Contracts, and sanctions against GBV at work	The project will have workers that should enjoy the minimum wage and written contracts. The project will comply with the Act.
8.	Labour Relations Act, 2007	The Act covers both workers (trade unions) and employer organizations. Provides for registration, regulation, management and democratization of these organizations, promotes sound labour relations through the protection and promotion of freedom of association, encourages effective collective bargaining and promotion of orderly and expeditious dispute settlement, conducive to social justice and economic development.	Project workers will be free to join workers organizations and engage in collective bargaining.

4.3 Labour Inspectorate

Kenya's Ministry of Labour and Social Protection (MLSP) oversees a dual system of inspection covering general labour inspection (Labour Department) and occupational safety and health [Directorate of Occupational Safety and Health Services (DOSHS)]. The DOSHS is responsible for enforcing two pieces of legislation: (i) the OSHA, 2007; and (ii) the WIBA, 2007. The monitoring and enforcement of the Employment Act, 2007, and the Industrial Relations Act, 2007, is the responsibility of the Labour Department. The Employment Act applies to all employees employed by any employer under a contract of service and excludes the armed forces, police, prisons service, the National Youth Service and family undertakings. The OSHA applies to all workplaces where any person is at work, whether temporarily or permanently. All labour officers within the Ministry have the capacity of labour inspectors and to resolve labour disputes.

5 RESPONSIBLE STAFF

The NPCU will be responsible for the overall project management, coordination, and implementation of this LMP including compliance with World Bank ESSs. At the national level, the NCPU will work with MOLSP through the National Project Steering Committee (NPSC) to implement the LMP for The KEWASIP Components 1 and 3 in compliance with national laws.

County Project Coordination Units (CPCUs) will be responsible for implementing this LMP at the county and community level for subcomponent 2a activities in private and community lands while KFS will implement the LMP for subcomponent 2b activities in gazetted forests.

5.1 NPCU Role and Responsibility

The NPCU will be responsible for the following tasks:

a. Undertake the overall implementation of this LMP in coordination with the CPCUs and KFS;
b. Avail budget for implementation of the LMP at the county and community levels;
c. Engage and manage all project workers in accordance with this LMP and the applicable Procurement Documents;
d. Monitor project contractors and workers, except community workers, to ensure their activities are included in the LMP and the applicable Procurement Documents;
e. Monitor the potential risks of child labor, forced labor and serious safety issues in relation to primary suppliers;
f. Provide training to mitigate social risks including SEA/SH, OHS of project workers;
g. Ensure that the GRM for project workers is established and implemented and that project workers are informed;
h. Monitor the implementation of the worker CoC. Civil servants in the KEWASIP will not be subjected to the worker CoC. However, they are expected to comply with all ESS2 requirements, including the OHS, grievance mechanism, and will be trained on GBV/SEA/SH requirements; and
i. Report to the World Bank on labor and OHS performance and key risks and complaints. In case any serious OHS incident in connection with the project, the NPCU, should notify the World Bank within 48 hours of becoming aware of such incident. A fatality is automatically classified as a serious incident, as are incidents of forced or child labor, abuses of community members by project workers (including GBV incidents), violent community protests, or kidnappings. NPCU should ensure that the incident report is in line with the Bank's Environmental and Social Incident Reporting Toolkit (ESIRT). The Bank should then process the incident report in

accordance with the ESIRT. Moreover, a fatality should be reported to DOSHS and the World Bank within 24 hours of occurrence.

5.2 Other Roles and Responsibilities

Table 5-1 presents a summary of other key LMP commitments and the project staff/entity responsible for the various key responsibility areas.

Table 5 Commitments and Responsible Persons

#	Officers Responsible	Key Responsibilities
1.	Project Coordinator	• Prepare contracts for direct workers and contractors that address relevant environmental, social, health and safety (ESHS) risks; • Oversee the CPCUs on their role's compliance to LMP in relation to consultants and contractors hired to support project related activities; Assess the risk of serious safety issues by primary suppliers and as needed require them to develop procedures to address these risks, throughout the project cycle; • Take lead in assessing impacts and risks related to the KEWASIP activities and thereof recommending mitigation measures.
2.	Environmental & Social Safeguards Officers	• Training all direct workers and contractors on the requirements of this LMP; • Prepare Code of conduct (CoC) for various categories of workers in the project; • Take lead in assessing impacts and risks related to the KEWASIP activities and provide strategic solutions to ESHS risks; • Prepare and monitor implementation a SEA/SH/GBV action plan; • Monitor and report on compliance to all the guidelines as provided in this LMP; • Ensure adequate and appropriate stakeholder consultation (ESS10); • Supervision of implementation of the OHS plans by contractors; • Monitor all LMP aspects and prepare reports for the World Bank; • Supervise workers' adherence to the LMP; • Prepare, review, approve the various OHS measures and plans; • Maintain records of recruitment and employment of contracted workers (including sub-contractors); • Require primary supplier(s) to identify and address risks of child labor, forced labor and serious safety issues and undertake due diligence to ensure this is done; • Develop and implement the GRM for contracted workers, including ensuring that grievances received from the contracted workers are resolved promptly, and report the status of grievances including grievances related to SEA/SH and resolutions regularly to the NPCU and World Bank. Also, the NPCU should ensure that a GRM is outlined in contractor C-ESMP; • Ensure all contractor and subcontractor workers understand and sign the CoC prior to the commencement of works and supervise compliance with the CoC; • Ensure the abbreviated CoC (one-pager) is displayed in all project supported facilities; and • Report to the NPCU on labor and ESHS performance.

3.	CPCU Environmental and Social Risks Officers	• Assess the risk of serious safety issues at the county and community levels; • Develop protocols for the workplace and for individual staff including disease prevention; • Coordinate with NEMA and MLSP on all OHS related issues; • Monitor, document and report on all OHS matters at the county level; • Support the development of a GRM structure for the workplaces; • Be the GRM focal point for the project; • Monitor, document and report on GRM effectiveness; • Report any serious OHS incident in connection with the project to the NPCU within 24 hours of becoming aware of such incident.
4.	Labour officers and OHS officers from MLSP	• Registration and renewal of workplaces. All subproject sites will be registered as workplaces • Workplace inspection and audits • Examination and testing of plants (machinery) to guarantee that they are in a good working condition. • Accident investigation and WIBA processing.
5.	Contractors	• Prepare the C-ESMP and undertake the overall implementation of OSH in compliance with the C-ESMP, ESS2. • Engage and manage employees in accordance with labour laws and ESS2 standards. • Monitor the potential risks of child labor, forced labor and serious safety issues in relation to primary suppliers. • Sensitize own staff on OSH and SEAH/SH risk mitigation measures and sanctions for violating the CoC. • Ensure that workers are aware and understand the Project workers GRM and how they can report their grievances. • Ensure own workers sign the CoC and monitor compliance. • Report to the NPCU on labor and OHS performance and key risks and complaints.

Table 5-2 presents a summary of the project staff/entity responsible for various key responsibility areas.

Table 6 Summary of the Project Staff/Entity Responsible for Various Key Responsibility Areas

Responsibility area	**Direct and contracted workers**	**Primary supply workers**	**Community Workers**
Hiring and managing individual project workers	NPCU will oversee the work of consultants hired for project activities.	Contractors will be responsible for these workers but will be managed according to this LMP.	Community leaders CBOs CPCUs
OHS	NPCU, Contractor All workers (long-term and temporary) will follow OHS measures	The NPCU will assess the risk levels/safety issues of primary suppliers and as needed require them to develop procedures to address these risks.	CPCUs will assess the risk levels/safety issues of community workers and as needed require them to develop procedures to address these risks. NPCU to provide oversight.

Child labor and forced labor	Contractors NPCU to ensure contracts do not allow child and forced labor and age verification procedures are maintained.	Primary supplier to adhere to child labor requirements. NPCU to review	No children under the age of 14 will be involved in project activities. Older children's engagement in the project should not be harmful to their health and development.
Training	NPCU/ Contractors	Contractors are responsible	CBOs and CPCUs to conduct trainings as toolbox talk.
Code of conduct	NPCU, Contractor The contract to commit workers to comply with a code of conduct through signing.		CoC to be shared as part of toolbox talk.
Grievance mechanism	NPCU/Contractors		CPCUs and CBOs
Monitoring and reporting	NPCU/Contractors/CPCUs to monitor and report World Bank	NPCU to monitor compliance. NPCU to report to World Bank.	CPCUs to monitor and report

6 POLICIES AND PROCEDURES

6.1 Procedures to Develop and Implement LMP Policies

A summary of indicative procedures to develop and implement the LMP policies is provided below:

6.1.1 Occupational Health and Safety (OHS)

Based on the relevant provisions of the OSHA, 2007, there is a need to provide for the safety, health and welfare of workers and all persons lawfully present at workplaces. Sound OHS risk management: Secures safety and health for people legally in all workplaces by minimization of exposure of workers to hazards (gases, fumes and vapours, energies, dangerous machinery/equipment, temperatures, and biological agents) at their workplaces; Promotes reporting of work-place accidents, dangerous occurrences and ill health with a view to finding out their causes and preventing of similar occurrences in future; Promotes creation of a safety culture at workplaces through education and training in OHS.

To meet ESS2 and the World Bank EHSGs, the SDF will manage the Project in such a way to ensure that all Project workers are properly protected against possible OHS risks. The NPCU and CPCU E&S teams assisted by the county DOSHS officers will ensure that OHS risks associated with project activities are assessed, and that appropriate mitigation measures are developed in site-specific OHS Plans as part of ESIA studies. Key steps in the development of site specific OHS plans include: (i) identify potential project and task-specific hazards to the workers; (ii) Determine the safety requirements; (iii) formulate measures to address the hazards identified in order of priority which is to be based on assessed risk; (iv) Anticipate and avail resources to deal with emergencies; (v) Develop a training plan and train all workers on relevant OHS risks and mitigation measures; and (vi) develop a communication and records management system to ensure maintenance of training records and documentation and reporting of occupational accidents and incidents.

Risk assessment procedure and steps to be followed for a risk assessment exercise are: (i) identification of the hazards; (ii) identify the people who might be harmed and how; (iii) Evaluate the risk and decide on precautions; (iv) Record the significant findings and implement them; and (v) Review and update if necessary.

6.1.2 Child Labor

The project has a stated minimum age requirement of 18 years of age or older for project workers. All contracts must include clauses requiring compliance with the minimum age requirements, including penalties for non-compliance in accordance with the applicable legislation, to prevent the hiring of workers who are underage. The PCUs are obligated to keep an age-verified labor registration of all employed individuals. However, community workers are exempted from this minimum age requirement as children above 14 years may be involved in project activities at the community level. Children's participation in these activities helps them learn valuable skills and contribute to the regeneration of local ecosystems, which has a positive impact on their livelihoods. Such participation is important for children and builds their self-esteem. Furthermore, to prevent and mitigate child labour in the KEWASIP, awareness creation and sensitization will be undertaken on the distinction between child labour and child work including a clear elaboration on implication of child labour on the part of the beneficiaries found to have subjected children to forced labour.

6.1.3 Labor Influx

The contract for the project will include that the contractors must prioritize hiring unskilled workers from the subproject area and adjacent towns to reduce labor influx. Prior to the start of employment, all contracted workers will be asked to sign the CoC, which contains a clause to address the risk of GBV/SEA/SH (see *Annex A* on the Guideline on Individual CoC).

6.1.4 Labor Disputes over Terms and Conditions of Employment

To avoid labor disputes, fair terms and conditions about written agreements with clear terms and conditions, as opposed to verbal agreements will be applied for project workers. The project will also have a GRM for all project workers to promptly address their workplace grievances. Further, the project will respect the workers' rights of labor unions and freedom of association, as set out in the Employment Act, 2007.

6.1.5 Discrimination and Exclusion of Vulnerable Groups

The employment of project workers will be based on the principle of equal opportunity and fair treatment, and there will be no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, terms of employment (including wages and benefits), termination and access to training.

6.1.6 GBV and SEA/SH

Given the implementation context, GBV/SEA/SH risk is likely due to unequal power relations between males and females. Thus, all project workers shall sign the code of conduct (CoC) outlining expected standards of behavior in this regard and attend an awareness session on the same including the consequences of such actions. The NPCU will identify and recruit a qualified trainer/consultant to offer training in GBV/SEASH.

6.1.7 Security Risks

Some of the counties could experience security issues and so the NPCU and CPCU will therefore implement the Security Management Plans separately prepared for the KEWASIP. The security workers or those providing security [private and public (KFS rangers, National Police Service (NPS),

and Kenya Defense Forces (KDF)] to be involved in the project activities will be sensitized and trained on GBV/SEA/SH requirements and human rights-based approach to security.

6.1.8 Terms and Conditions of Employment

Project workers will be provided with information and documentation that is clear and understandable regarding their terms and conditions of employment. **The Employment Act, 2007** broadly addresses other issues including the minimum, statutory requirement of 18 years and above for any employment arrangement in *Part III* on Employment Relationship. By law, the employee is entitled to pertinent employment information and documentation pursuant to *Section 14* on Reasonably Accessible Document or Collective Agreement. *Part IV* of the Act addresses itself on the Protection of Wages seeks to outline the minimum standards required of all salary policies. The law has expressly restricted the employer's ability to interfere with how the employees dispose of their earnings. *Part V* focuses on the Rights and Duties in Employment and outlines the employees' entitlements and the employers' responsibilities. Indeed, the provisions of this Part expressly "constitute basic minimum terms and conditions of the contract of service".

Hours of work are lawfully the employer's prerogative; however, there must be a weekly rest day(s). The Act also covers matters of leave for employees. *Part VI* of the Act addresses the Termination and Dismissal matters and outlines how employers and employees may terminate their contractual arrangements lawfully. The party seeking to terminate the employment contract may make a payment in lieu of notice or the employer may simply waiver the employee's obligation to make payment in lieu of notice. Where the contractual arrangement ends based on alleged employee wrongdoing; then there ought to be due process for the employee to defend his/her case and challenge the allegations. The employer is obligated to show justifiable cause for dismissal and the proof thereof. If the cause is sufficiently grievous to meet the threshold for summary dismissal, the employer may exercise the option to terminate the employee summarily following due process. The Act further obligates employers to make timely payments of separation and severance- all accrued salary/wages, allowances and benefits, pension and pension contributions and any other employee entitlements will be paid on or before termination of the working relationship.

Various provisions that will inform management of all the KEWASIP project workers include:

Contracted Workers

The Employment Act and associated public service regulations are the guiding legislation on employment terms and conditions for contracted workers. The PCUs shall therefore follow the provisions related to labor engagements and management.

Minimum Wages

The official minimum wage will be governed by the provisions of the Salaries and Remuneration Commission (SRC) where the minimum monthly gazetted wage of all contracted workers is Kshs 15,201.65 and every effort should be made to ensure that contractors follow the guidelines as provided by the ministry of labour on minimum wages and ensure that contractors do not underpay and overwork their workers especially those on temporary and causal terms.

Hours of Work

The normal hours of work on a project shall not exceed 8 hours a day. Hours worked more than the normal hours shall be entitled to relevant allowances like overtime allowances and safe travel facilitator.

Rest per Week

Every worker shall be entitled to one rest day per week. Workers shall also be entitled to rest on public holidays recognized as such by the Republic of Kenya.

Annual Leave

According to *section 28* of the Kenyan employment Act clause 7, 8, and 9 Workers (apart from consultants and temporary workers) shall be entitled to 21 days' leave with pay for every year of continuous service. An entitlement to leave with pay shall normally be acquired after a full year of continuous service.

Maternity and Paternity Leaves

According to *section 29* of the constitution of Kenya, female workers are entitled to fully paid three months' maternity leave while male workers get 14 days paternity leave. Additionally, maternity or paternity leave does not take away the employees' entitlement to annual leave according to section

Deductions from Remuneration

No deductions other than those prescribed in labor laws shall be made hereunder or any other law or collective labor agreement shall be made from a worker's remuneration, except for repayment of advances received from the employer and evidenced in writing. The employer shall not demand or accept from workers any cash payments or presents of any kind in return for admitting them to employment or for any other reasons connected with the terms and conditions of employment.

Death Benefit

In case of death of a worker during their contract of employment, the employer shall pay to their remuneration as death benefits in line with the provisions of the relevant laws and any other as guided by WBG ESS2.

Medical Treatment of Injured and Sick Workers

Contract workers shall at a minimum be expected to be enrolled on WIBA-compliant insurance by the contractors. Appointed contractors will be required to maintain valid WIBA compliant insurance cover throughout their contract duration, and insurance for third-party liability. All other workers will continue to benefit from medical insurance as arranged by their respective employers.

Direct workers who are mainly civil servants and temporary workers have a contributory Social Health Insurance Fund (SHIF).

Monitoring and Reporting

The NPCU is required to provide a monthly report on the progress of the policies and processes. The NPCU will keep a close eye on the project's labor and OHS performance and provide a quarterly report to the World Bank. However, in the case of accidents or incidents, the NPCU is required to notify the World Bank within 48 hours. In response to mishaps or accidents connected to the project, corrective measures must be taken. For creating and implementing additional remedial actions, the NPCU, or, as appropriate, a consultant, may perform a root cause analysis. KFS, CPCUs, and CBOs, on the other hand, should inform the NPCU and DOSHS of accidents or incidents connected to the project within 24 hours of their occurrence.

6.2 Contractor's Responsibilities

Civil works contractors will be expected to develop policies and practices that adhere to this document in accordance with the contracts and Contractor Environmental and Social Management Plan (C-ESMP) that includes OHS. Summarily, they will identify potential workplace hazards, provide protective measures, train employees, maintain training records, document and report occupational accidents and incidents, develop emergency preparedness procedures, and provide remedies for workplace injuries and fatalities. Contractors and supervising firms will submit monthly reports to the World Bank upon request as annexes to the reports to be submitted under the NPCU. However, any fatalities must be reported within 24 hours. Additionally, contractors will be required to identify focal points and communication channels (for example, WhatsApp, SMS and email) within the company to address workers' concerns on an ongoing basis and ensure that such channels are adequately resourced (for example, 24-hour staffing of the emergency response call line). Workers shall not be victimized in any way for reporting a grievance.

6.3 Whistleblowing and Protection Against Retaliation

The Project will provide protection against retaliation for all workers who become whistleblowers. Whistleblowers are Project workers who report, in good faith, suspected wrongdoing to the PCUs and may be subject to retaliatory action as a result. A whistleblowing policy rooted in the following underlying approach will be developed by the NPCU at the Project effectiveness:

- Project workers have an obligation to report wrongdoing;
- the Project has a duty to protect whistleblowers against retaliation;
- the Project has a duty to address wrongdoing by instituting remedies and taking disciplinary action as appropriate; and
- retaliation constitutes misconduct.

Primary supply workers are also encouraged to report any suspicious wrongdoing to the PCUs.

The identity of a whistleblower that comes forward for advice regarding the reporting of suspected wrongdoing is protected. Confidentiality will only be waived with their express consent.

7 CONTRACTOR MANAGEMENT

The NPCU will make reasonable efforts to ascertain that contractors who engage contracted workers are legitimate and reliable entities and have in place labor management procedures applicable to the project that will allow them to operate in accordance with the requirements of ESS2. As such, each contractor engaged by the Project to provide services will be expected to adopt the protective measures outlined in this LMP. The contracts drawn by the NPCU will include provisions, measures, and procedures to be put in place by the contractors to manage and monitor relevant OHS issues. Measures required of Contractors will include as part of the bidding/tendering process, specific requirements for certain types of contractors, and specific selection criteria (e.g., certifications, previous experience, etc.); Specific procedures relating to the workplace and the conduct of the work; and specific procedures and measures dealing with specific risks.

The NPCU will ensure that the contractors comply with the ESHS specifications of their respective contracts, including GBV/SEA/SH aspects through periodic audits, inspections, and/or spot checks of project locations or work sites and/or of labor management records and reports compiled by third parties. Contractor labor management records and reports may include: (a) a representative sample of employment contracts or arrangements between third parties and contracted workers; (b) records relating to grievances received and their resolution; (c) reports relating to safety inspections, including fatalities and incidents and implementation of corrective actions; (d) records relating to incidents of

non-compliance with national law; and (e) records of training provided for contracted workers to explain labor and working conditions and OHS for the project.

8 PRIMARY SUPPLY WORKERS

To mitigate/manage the risk of forced and child labour, human rights abuse, health and safety concerns among primary supply workers, the NPCU through procurement documents will require: (i) forced and/or forced labour declarations; (ii) qualification requirements, and (iii) mandatory prior review/No-objection by the Bank. Effective screening and due diligence at selection of primary suppliers will be undertaken to identify and detect potential risks related to labour and human rights abuse including child labor, forced labor and major safety concerns. The NPCU will not approve the purchase of supplies from primary suppliers associated with such abuses or non-compliance with labour laws. All purchase orders and contracts by the project will have specific provisions for child protection, non-involvement in forced labor and worker safety. Metrics for evaluation of compliance with the requirements of the ESS2 will be developed by the NPCU environmental and social specialists and used during selection of suppliers and contracting under the project. Monitoring of compliance will be done through regular review/assessment of project documentation (specific reports from contractors) as well as project site visits. In the event of non-compliance, the PCUs, will invoke contractual provisions in the supplier contract to manage and provide corrective measures as required.

9 COMMUNITY WORKERS

The project will use community workers who will be engaged by the beneficiaries (e.g., CBOs, CPCUs, KFS, etc.) for Component 2 activities (Activities in private and community lands, and gazetted forests). Community workers will provide labor voluntarily/in-kind contribution, but they will be facilitated for e.g. communication, transport, drinks, etc. Additionally, a daily stipend of Kenya shillings 752/- (or KSh 15,201 – Kenya's minimum wage) is proposed for the community workers working from 8am-5pm with breaks in between. The stipend shall be paid in cash at the end of each workday.

Community workers documentation will include signed forms on voluntary participation; working conditions particularly OHS; and no disadvantage to those who are not able to participate (e.g. elderly, PWDs, women, etc.). The PCUs will capture the potential risks for engagement of community labour. The project will endeavor to ensure that there are no negative effects or impacts:

- The NPCU will formulate mechanisms to address child labour, forced labour, hazardous work, the roles and responsibilities for monitoring of community workers, and the grievance mechanism in the LMP, amongst various communities. Labour officers will also provide guidance to the county teams to ensure that any community work is undertaken according to the labour laws in Kenya;
- Potential security risks will also be identified, analyzed and the necessary measures taken to reduce chances of occurrence and mitigation of negative impacts; and
- The issues to be addressed during community consultations and elections of community workers who will voluntarily work guided by the chief, CBOs, CPCUs and KFS staff include:
    - Compliance with applicable laws, rules, and regulations;
    - Compliance with applicable health and safety requirements (including wearing prescribed personal protective equipment (PPE), preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment;
    - The use of illegal substances (such as alcohol and narcotics during working hours);

- Non-discrimination (e.g. based on family status, ethnicity, race, gender, religion, language, marital status, birth, age, disability, or political conviction);
- Interactions with community members (e.g. to convey an attitude of respect and non-discrimination);
- Sexual harassment (e.g. to prohibit use of language or behavior, towards women or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate);
- Violence or exploitation (e.g. the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading or exploitative behavior);
- Protection of children (including prohibitions against abuse, defilement, or otherwise unacceptable behavior with children, limiting interactions with children, and ensuring their safety in project areas);
- Sanitation requirements (e.g., to ensure workers use specified sanitary facilities provided by their employer and not open areas);
- Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favors, are not provided to any person with whom there is a financial, family, or personal connection);
- Respecting reasonable work instructions (including regarding environmental and social norms);
- Protection and proper use of property (e.g., to prohibit theft, carelessness or waste);
- Duty to report violations of this Code; and
- No retaliation against workers who report violations of the Code, if that report is made in good faith.

10 GRIEVANCE REDRESS MECHANISM (GRM)

10.1 General Principles

Workplace grievances commonly involve interest in employment opportunities, labor wage rates, payment delays, disagreements about working conditions, and health and safety problems in the workplace. Even though SEA/SH/GBV is an occurrence at workplaces, it isn't always reported for fear of victimization. As required by ESS2, a unique grievance procedure will be designed for project workers. Grievances should be handled in a culturally sensitive manner (for ESS7 communities), objectively, quickly, and with consideration for the needs and concerns of the offended employees. The system will also cater for anonymous complaints. When submitting complaints or concerns, individuals may ask that their identity remain anonymous; this request should be honored. Workers will be adequately sensitized on the GRM during recruitment to enhance awareness and enable effective use.

10.2 Workers GRM

There will be a Workers Grievance Redress Mechanism (wGRM) for project workers as per the process outlined below. This considers culturally appropriate ways of handling the concerns of direct and contracted workers. Processes for documenting complaints and concerns have been specified, including time commitments to resolve issues. Workers will be informed about the relevant Worker GRM upon their recruitment and their right to redress, confidentiality and protection against any reprisals from the employer will be stated in the contract.

10.2.1 Direct Workers

These will mainly be government employees at the NPCU, KFS and CPCUs. The staff will utilize the current grievance system set up by the public service to address workers' grievances.[6] Each unit engaging direct workers (NPCU, CPCUs and KFS) will hold periodic team meetings to discuss any general workplace concerns. The grievances raised by workers will be recorded and requisite actions taken. The summary of grievances will be reported to the World Bank as part of regular project reporting.

For individual grievances, the Public Service Commission (PSC) provides for a process that guides how these are addressed, thus: "PSC of Kenya advocates settling of a grievance as quickly as possible to its point of origin and encourages staff and their superiors/managers to resolve grievances informally." However, the following three (3) stages are set to address the situations where this is not possible: (a) A Grievance Form (PSC GF) has been designed for ease of application of the procedure. An officer who has any grievance or complaint should raise it with his/her Head of Department in writing by completing the Grievance Form (attached in *Annex C*); The Head of the Department will give an answer as soon as possible and within a maximum of seven (7) working days; (b) If the matter is unresolved at stage II the aggrieved officer can appeal in writing to the Senior Deputy Secretary, Administration. The Senior Deputy Secretary Administration will at his/her discretion arrange a personal interview with the aggrieved officer and will give a written reply to the latter within fourteen (14) working days; and (c) It is expected that most of the cases will be solved at Stage II but in exceptional circumstances where this is not possible and the matter remains unresolved, the aggrieved officer may present it in writing to the Secretary, Public Service Commission who will handle the matter and give a written reply within a further fourteen (14) working days.

National appeal process. The labor laws provide for the national appeals process that could be utilized by any aggrieved staff if they consider the process established by the project to be ineffective and/or unfair. The grievance mechanism will therefore not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.

10.2.2 Contracted Workers

Among other things, the contractors as well as sub-contractors' workers' grievance mechanism will include formal channels for submission and receipt of grievances, such as comment/complaint form, suggestion boxes, email, toll free telephone hotline, face to face communication; Stipulated timeframes to respond to grievances; Register and procedures to record and track the timely resolution of grievances; Responsible focal person to receive, record and track resolution of grievances, and to communicate with workers who submit grievances.

The CPCUs, KFS, CBOs or subproject site supervision/Manager/ Consultant will monitor to ensure proper recording and resolution of grievances and report a summary monthly. The contractor/sub-contractor will assign a focal person to oversee and implement the GRM, overseen by the site project engineer. The workers' grievance mechanism will be described in staff induction training, which will be provided to all project workers, and proper explanation done orally on what the CoC contains before the Worker's CoC is signed. The contractor will be required to prove that each employee has been inducted and signed that they have been inducted in the GRM procedure.

Furthermore, as part of contractor's human resources policies, there should be a separate procedure for workers to report cases of GBV/SEA/SH and procedures to address these kinds of cases as prescribed in the SEAH/GBV action plan.

The mechanism will be based on the following principles:

- The process will be transparent and allow workers to express their concerns and file grievances;
- There will be no discrimination against those who express grievances;
- Grievances will be treated confidentially, except anonymous ones;
- Anonymous grievances will be treated equally as other grievances, whose origin is known;
- Workers will be informed of how their grievances are resolved;
- Resolution of anonymous grievances will be announced to the wider workforce;
- Workers will be encouraged to escalate unresolved grievances to the KFS, CPCUs and NPCU, as relevant; and
- Management will treat grievances seriously and take timely and appropriate action in response.

Information about the existence of the grievance mechanism will be readily available to all project workers (direct and contracted) through notice boards, the presence of "suggestion/complaint boxes", and other means as needed.

10.2.3 Community Workers

Community workers will channel their grievances through the Project GRM (pGRM) detailed in the SEP. The pGRM will operate at three levels: National Level; Managed by the NPCU overseeing serious or unresolved grievances; County Level Administered by CPCUs – responsible for coordination and resolution of medium-level grievances; and Community level: Community-based grievance focal points for quick resolution of day-to-day issues raised by PAPs.

The pGRM will provide an appeals process if the complainant is not satisfied with the proposed resolution of the complaint. Once all possible means to resolve the complaint have been proposed and if the complainant is still not satisfied, then they should be advised of their right to legal recourse.

10.3 World Bank Grievance Redress System (GRS)

Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank's GRS (when not satisfied with the project-level GRM since the goal is to solve the grievance at the lowest (most local) level before going on to higher levels of appeal/grievance management, if the issue is not resolved). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, because of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit, *http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service*. For information on how to submit complaints to the World Bank Inspection Panel, please visit, *www.inspectionpanel.org*.

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12 APPENDICES

12.1 Appendix I: Notarized Individual Code of Conduct (KEWASIP Sample)

I, _____, acknowledge that it is important adhering to the KEWASIP Project environmental, social, health and safety (ESHS) standards, requirements, and preventing sexual exploitation and abuse and sexual harassment (SEA/SH), and violence against children (VAC).

KWASIP considers that failure to follow ESHS standards, or to commit acts of GBV/SEA/SH or VAC — be it on the work site, the work site surroundings, or the surrounding communities—constitute acts of gross misconduct and are therefore grounds for sanctions, penalties, or potential termination of employment. Prosecution of those who commit GBV/SEA/SH or VAC by law enforcement authorities may be pursued if appropriate, and only upon informed survivor consent, or in the case of a minor, with appropriate caregiver consent.

I agree that while working on the Project I will:

Regarding Occupational Health and Safety

- Comply with legislation and other applicable requirements relating to occupational health and safety risks.
- Attend occupational health and safety trainings as requested by employer or the Project.
- Identify the potential risks associated with each activity and workstation.
- Make recommendations regarding safety and health issues affecting employees
- Wear prescribed and appropriate personal protective equipment (PPE) all times on Project site.
- Prevent avoidable accidents and report conditions or practices that pose a safety hazard or threaten the environment.
- Report any violations of this code of conduct to workers' representative, HR, or grievance redress committee. No employee who reports a violation of this code of conduct in good faith will be punished in any way.

Regarding Sexual Exploitation and Abuse and Sexual Harassment

- Attend and actively partake in training courses related to GBV/ SEA/SH and VAC as requested by the Project.
- Treat women, children (persons under the age of 18), and men with respect regardless of race, color, language, religion, political or other affiliation, nationality, ethnicity, or social origin, property, disability, birth or nationality, sexual orientation, gender identity, or other status.
- Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not engage in sexual exploitation, which is defined as any actual or attempted abuse of position of vulnerability, differential power, or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially, or politically from the sexual exploitation of another.
- Not engage in sexual abuse, which is defined as the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions.
- Not engage in sexual harassment, which is defined as any unwelcome sexual advance, request for sexual favor, verbal or physical conduct or gesture of a sexual nature, or any other behavior of a sexual nature that might reasonably be expected or be perceived to cause offense or

humiliation to another, when such conduct interferes with work, is made a condition of employment, or creates an intimidating, hostile or offensive work environment.

- Not participate in sexual contact or activity with children—including grooming or contact through digital media (community members married to minors, even if legally done, will not be hired). Mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
- Not have sexual interactions with members of the host communities (NB: an exception applies to a locally hired worker already married to an adult member of the community). This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.
- Consider reporting through the Grievance Mechanism or to my manager any suspected or actual GBV/SEA/SH or VAC by a fellow worker, whether employed by my company or not, or any breaches of this Code of Conduct.

Regarding children under the age of 18:

- Wherever possible, ensure that another adult is present when working in proximity to children.
- Not invite unaccompanied children unrelated to my family into my home unless they are at immediate risk of injury or in physical danger.
- Not use any computers, mobile phones, video, and digital cameras or any other medium to exploit or harass children or to access child pornography (see also "Use of children's images for work related purposes" below).
- Refrain from physical punishment or discipline of children.
- Refrain from hiring children below the minimum age of 15, for domestic or other labor which places them at significant risk of injury, as specified by the national law
- Comply with all relevant local legislation, including labor laws in relation to child labor and World Bank's E&S standards on child labor and minimum age.
- Take appropriate caution when photographing or filming children (see details below).

Sanctions

I understand that if I breach this Individual Code of Conduct, the KEWASIP will take disciplinary action which could include:

- Informal warning.
- Formal warning.
- Additional Training.
- Loss of up to one week's salary.
- Suspension of employment (without payment of salary/contract fees), for a minimum period of 1 month up to a maximum of 6 months.
- Termination of employment.
- Reporting to the police if warranted.

I understand that it is my responsibility to ensure that the environmental, social, health and safety standards are met. I will adhere to the occupational health and safety management requirements and avoid actions or behaviors that could be construed as GBV/SEA/SH or VAC. Any such actions will be a

breach of this Individual Code of Conduct. I do hereby acknowledge that I have read the foregoing Individual Code of Conduct, do agree to comply with the standards contained therein and understand my roles and responsibilities to prevent and respond to OHS, GBV/SEA/SH and VAC issues.

I understand that any action inconsistent with this Individual Code of Conduct or failure to act mandated by this Individual Code of Conduct may result in disciplinary action and may affect my ongoing employment.

Signature: _____

Printed Name: _____

Title: _____

Date: _____

12.2 Appendix II: Incident Investigation Form

OHS Incident Investigation Form

Classification of Accident (Indicative, Serious, Severe) .....

Description of the accident:.....

……

Date and Time of Accident: ……..

Location of the accident: ……..

Source of accident alert: ……

Investigation

Date and Time of Investigation:

Names and Status of Investigating Team

Name..... Position.....Sign.....

Name.....Position.....Sign.....
Name.....Position.....Sign.....

Complete accident investigation questionnaire and attach copies to Incident Investigation Form.

Findings of Investigation Team

Team's description of events leading up to the accident

Team's Description of the accident itself

Team’s view on the causes of the accident

Recommendation to reduce potential accident (immediate fix)

Date.....No.....Section.....

1. Root causes.....
2. Preventive Action taken.....
3. Further Recommendation Preventive actions.....

Project coordinator:

Comments and Actions to be taken or recommended to higher authority:

Signature..... Date.....

12.3 Appendix III: Public Service Commission (PSC) Grievance Form

PUBLIC SERVICE COMMISSION GRIEVANCE PROCEDURE

GRIEVANCE FORM – PSC GF

Officer's Full Name	**P/No.**	**Designation & Grade**
Department		**Section**
Office Tel. No. ……..	**Official E-mail Address:**	**Mobile Telephone No.**
Stage I		
Grievance Statement/Issues (Use attachments if necessary): Submitted to: Name:…….. Head/Officer in Charge ……Dept/Section …… Date …….		
Date Received:		

Response/Action taken:

Respondent's Name …… Designation……..

Signature: …… Date ……..

Employee's response

[ ] I conclude my grievance and am returning the form to the Human Resource Office .

[ ] I request that my grievance be taken to the next stage.

Signature ……. Date ……

Stage II

Submitted to:……..

Name: …… Senior Deputy Secretary (Administration) Date: ……

Date Received: ……

Response/Action taken:…….

Respondent's Name …… Designation …….

Signature: …… Date ……

Employee's Response

[ ] I have documented my grievance and am returning the form to the Human Resource Office

[ ] I request that my grievance be taken to the next stage

Stage III

Submitted to the Secretary PSCK

12.4 Appendix IV: Contractor's Code of Conduct (CCoC)

Implementing Environmental, Social Health and Safety (ESHS) and Occupational Health and Safety (OHS) Standards

Preventing Gender-Based Violence (GBV) and Violence against Children (VAC)

(Name of contractor) acknowledges that adhering to environmental and social health and safety (ESHS) standards, following the project's occupational health and safety (OHS) requirements, and preventing gender-based violence (GBV) and violence against children (VAC) is important. All forms of GBV or VAC are unacceptable, be it on the work site, the work site surroundings, at worker's camps, or the surrounding communities. The company considers that failure to follow ESHS and OHS standards or to partake in GBV or VAC activities constitutes gross misconduct and is grounds for sanctions, penalties or potential termination of employment. Prosecution of those who commit GBV or VAC may be pursued if appropriate.

(Name of contractor) agrees that while working on the project, every employee will:

- Attend and actively partake in training courses related to ESHS, OHS, HIV/AIDS, GBV and VAC as requested by the employer.
- Always wear personal protective equipment (PPE) in the correct prescribed manner when at the work site or in project-related activities.
- Take all practical steps to implement the organization's environmental and social management plan (CESMP).
- Implement the OHS Management Plan.
- Adhere to a zero-alcohol policy during work activities, and refrain from the use of illegal substances always.
- Consent to a police background check.
- Treat women, children (persons under 18), and men with respect regardless of race, color, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.
- Not use language or behavior towards women, children or men that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate.
- Not participate in sexual contact or activity with children—including grooming or contact through digital media. A mistaken belief regarding the age of a child is not a defense. Consent from the child is also not a defense or excuse.
- Not engage in sexual harassment—for instance, making unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature, including subtle acts of such behavior, e.g., looking somebody up and down; kissing, howling or smacking sounds; hanging around somebody; whistling and catcalls; giving personal gifts; making comments about somebody's sex life; etc.
- Not engage in sexual favors—for instance, making promises or favorable treatment dependent on sexual acts—or other forms of humiliating, degrading or exploitative behavior.
- Unless there is full consent[7] by all parties involved, every worker shall not have sexual interactions with members of the surrounding communities. This includes relationships involving the withholding or promise of actual provision of benefit (monetary or non-monetary) to community members in exchange for sex—such sexual activity is considered "non-consensual" within the scope of this Code.
- Consider reporting through the GRM (Grievance Redress Mechanism) or to the manager any suspected or actual GBV or VAC by a fellow worker, whether employed by my employer or not, or any breaches of this Code of Conduct.

Quality of products and services

(Name of the contractor) expects that products and services provided by each sub-contractor will be of the highest quality and will be fairly and reasonably priced so that ***(Name of the contractor)*** customers are served with the best value. In addition to any specific requirements in the agreement with ***(Name of the contractor)***, products and services will meet or exceed applicable government standards, including environmental and safety standards.

Health and Safety

(Name of the contractor) provides safe, injury-free working conditions and a healthy work environment. Compliance with this commitment is a condition of any sub-Contractor engagement with ***(Name of the contractor)***. Workplace safety Each Sub-Contractor is responsible for ensuring that its Representatives complete all necessary safety training and per formwork in conformance with all applicable safety rules, laws, standards and procedures

and for complying with and enforcing any additional ***(Name of the contractor)*** safety policies and procedures communicated to Sub-Contractor. Reporting injuries, damage and unsafe conditions in addition to any other legal reporting requirements, ***(Name of the contractor)*** and each Contractor must immediately report any occupational injuries, unsafe conditions or practices and damage to property occurring because of the ***(Name of the contractor)/Sub-Contractor*** or its Representative's activities to any deserved entity.

Alcohol and drug use

(Name of the contractor)'s commitment to providing a healthy and safe working environment is compromised by the consumption of alcohol and illegal drugs. While performing work for ***(Name of the contractor)***, Employees, Subcontractors and Representatives must not consume, use or be impaired by alcohol or illegal drugs or be under the influence of prescription drugs that impair a person's ability to perform work safely and efficiently.

Workplace violence

Acts or threats of physical violence, intimidation and harassment will not be tolerated. Engaging in violence or threatening or intimidating behavior may result in termination of the contract with ***(Name of the contractor)*** or removal of the Representative from ***(Name of the contractor)*** property, as deemed appropriate by ***(Name of the contractor)***.

The Environment

State Department for Forestry (SDF) is committed to conducting its business in an environmentally responsible manner. ***(Name of Contractor)*** and Representatives will comply with all applicable environmental laws and regulations and operate in a way that minimize the negative environmental impact of the products and services.

Ethics

(Name of Contractor) must operate within the highest standards of ethical conduct when dealing with project stakeholders. ***(Name of Contractor)*** will ensure that its actions, and those of its Representatives, comply with the letter and spirit of this Code.

Anti-corruption

(Name of Contractor) and Representatives are committed to zero tolerance against corruption and shall not engage in any form of bribery, extortion, embezzlement or other corrupt practices.

Fair competition

When conducting works ***(Name of Contractor)*** and Representatives shall uphold fair standards in recruiting and competition.

Confidentiality

Confidential information includes information that is not known by the public and that may be harmful to the organization, its employees or its customers if disclosed***. (Name of the Contractor)*** is committed to safeguarding and protecting its own confidential information and the personal information of its customers and employees. Sub-Contractor must maintain the confidentiality of information entrusted to it in accordance with its agreements with (***Name of the Company***) and applicable law. The obligation to protect (***Name of the Company***)'s confidential information continues even after the business relationship with (***Name of the Company***) ends.

Updates to Code and Disclaimer

(Name of the Contractor) reserves the right to amend and modify this Contractor Code of Conduct at its discretion. The provisions of the Code are not intended to change any obligations set forth in the Contractor's agreement with SDF and in the event of any conflict, the terms in the agreement with SDF will prevail.

Annex E: OHS Inspection Checklist

SN	Item	Yes	No	N/A	Comments/Observations
1	***Health and Safety Management***				
1.1	Is there an OHS policy in place and communicated to all workers?				
1.2	Are all workers provided with written contracts detailing OHS requirements?				
1.3	Are risk assessments conducted and updated regularly for all activities?				
1.4	Is an Emergency Response Plan (ERP) available and communicated to all workers?				
1.5	Is there an OHS supervisor appointed for each site?				
2	***Personal Protective Equipment (PPE)***				
2.1	Are workers provided with appropriate PPE (helmets, gloves, masks, safety shoes, etc.) for their tasks?				
2.2	Is the use of PPE enforced and monitored by the contractor?				
2.3	Is PPE in good condition and replaced when damaged or worn out?				

2.4	Are workers trained on the correct use of PPE?				
3	***Workplace Safety***				
3.1	Are warning signs and safety instructions visible in high-risk areas?				
3.2	Are first aid kits available and adequately stocked at the worksite?				
3.3	Is a trained first aider present at the site during working hours?				
3.4	Are emergency exits and escape routes clearly marked and unobstructed?				
3.5	Are fire extinguishers accessible, in good condition, and inspected regularly?				
3.6	Are hazardous materials (e.g., chemicals, fuels) stored safely and labelled correctly?				
3.7	Is there adequate lighting in all work areas, including night shifts if applicable?				
4	***Equipment and Machinery***				
4.1	Are all machines and equipment inspected and maintained regularly?				
4.2	Are moving parts of machinery guarded to prevent contact with workers?				
4.3	Are workers trained in the safe operation of equipment and machinery?				
4.4	Are all electrical installations checked and maintained by qualified personnel?				
5	***Worksite Conditions***				
5.1	Is the worksite clean, free from obstructions, and free of waste materials?				
5.2	Is potable drinking water available to all workers?				
5.3	Are sanitary facilities (toilets, washrooms) clean, well-maintained, and adequate in number?				

5.4	Is there proper waste disposal management in place at the site?				
5.5	Are safe practices for working at heights followed (e.g., use of harnesses, guardrails)?				
6	***Training and Communication***				
6.1	Are toolbox talks conducted regularly to discuss OHS topics and site-specific risks?				
6.2	Have all workers received OHS induction and job-specific safety training?				
6.3	Are OHS policies and procedures communicated in a language understood by all workers?				
6.4	Is there a record of all training sessions, including attendance sheets?				
7	***Grievance Mechanism and Incident Reporting***				
7.1	Is a workers' grievance mechanism in place and accessible to all workers?				
7.2	Are incidents and near-misses recorded, reported, and investigated promptly?				
7.3	Is there a process for workers to report unsafe conditions without fear of reprisal?				
7.4	Are corrective actions taken to address identified OHS issues and documented?				

[1] A *"direct worker"* is a worker with whom the Borrower has a directly contracted employment relationship and specific control over the work, working conditions, and treatment of the project worker. The worker is employed or engaged by the Borrower, paid directly by the Borrower, and subject to the Borrower's day-to-day instruction and control.

[2] A *"contracted worker"* is a worker employed or engaged by a third party to perform work or provide services related to the core functions of the project, where the third party exercises control over the work, working conditions, and treatment of the project worker.

[3] A *"primary supply worker"* is a worker employed or engaged by a primary supplier, providing goods and materials to the project, over whom a primary supplier exercises control for the work, working conditions, and treatment of the person.

[4] OSH Act No 15 of 2007
[5] WIBA Act No 13 of 2007
[6] Public Service Commission, 2016
[7] Consent is the informed choice underlying an individual's free and voluntary intention, acceptance or agreement to do something. No consent can be found when such acceptance or agreement is obtained using threats, force or other forms of coercion, abduction, fraud, deception, or misrepresentation. Following the United Nations Convention on the Rights of the Child, the World Bank considers that consent cannot be given by children under 18, even if the country's national legislation into which the Code of Conduct is introduced has a lower age. Mistaken belief regarding the child's age and consent from the child is not a defense.

STATE DEPARTMENT FOR FORESTRY (SDF)

KENYA WATERSHED SERVICES IMPROVEMENT PROJECT (KEWASIP)

(P178850)

DRAFT

SECURITY MANAGEMENT PLAN (SMP)

MARCH 2025

TABLE OF CONTENTS

ABBREVIATIONS & ACRONYMS

CPCU	County Project Coordination Unit
EHS	Environmental, Health and Safety
ESS	Environmental and Social Standard
GBV	Gender Based Violence
GIIP	Good International Industry Practice
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
IAU	Internal Affairs Unit
KDF	Kenya Defense Forces
KFS	Kenya Forest Service
LMP	Labour Management Procedure
MoECCF	Ministry of Environment, Climate Change and Forestry
NPCU	National Project Coordination Unit
NPS	National Police Service
OCS	Officer Commanding Station
OHS	Occupational Health and Safety
PAPs	Project Affected Persons
SDF	State Department for Forestry
SEAH	Sexual Exploitation, Abuse and Harassment
SMC	Security Management Committee
SRA	Security Risk Assessment
WBG	World Bank Group

1 INTRODUCTION

1.1 Objective of the Security Management Plan (SMP)

The objective of this Security Management Plan (SMP) is to protect against and mitigate risks of a security (as well as a human rights) nature that could threaten project workers, communities, facilities, and ability to operate, as well as reputation of Kenya Watershed Services Improvement Project (KEWASIP, the Project) and its operations. The plan describes how security will be organized to face identified threats and how reassessment and reorganization in response to emerging security situations will be undertaken. The systems outlined in the plan will be maintained throughout the lifetime of the project.

1.2 Security Approach

All Project coordinators within the Project Coordinating Units (PCUs) will ensure that security procedures and criteria are fully designed and updated, and the means fully available to ensure security for project operations. The understanding that good security and respect for the human rights of employees and communities are fully compatible, as reflected in security forces' behavior, communication, use of force, etc. will underpin the Project's security.

Since many security risks flow out of both inherent local social issues, such as ethnic tensions, and unrecognized issues between the project and local communities, the PCUs and beneficiaries will collaborate with both national and local security infrastructure in identifying and dealing with external security threats. Moreover, key stakeholders from local communities will also be consulted in assessing security risks and in considering how to mitigate and manage those risks. Depending on the threat level, security arrangements may be transparent, to the extent possible and appropriate, and may be included in disclosure to and consultation with the local communities.

The use of private security personnel is preferred to secure e.g. sub-project offices, stores, etc. Kenya Forest Service (KFS) and Kenya Wildlife Service (KWS) will play a full-time role as they patrol project areas as normal routine activity. Local public security [National Police Service (NPS) and Kenya Defense Forces (KDF)] may be engaged on ad hoc basis depending on high level security threats.

2 POLICIES, STANDARDS AND GOOD INTERNATIONAL INDUSTRY PRACTICE

This security management plan is anchored on World Bank Environmental and Social Standard 4 (ESS4) that covers Community Health and Safety (CHS) on sub section (b) Personnel Security in line with the World Bank Good Practice Note on Assessing and Managing Risks and Impacts of the Use of Security and the Guidelines for Implementation of the UN Basic Principles on the Use of Force and Firearms by law Enforcement Officials.

The standard role of public security will be to maintain the rule of law, including safeguarding human rights and deterring acts that threaten the project personnel and facilities. The public security forces to be deployed shall be competent, appropriate and proportional to the threat. Government of Kenya shall abide by the World Bank Good Practice Note on Assessing and Managing Risks and Impacts of the Use of Security to comply with the commitments on human rights extended throughout the KEWASIP activities and bolstered by its compliance with:

(a) World Bank Group (WBG) Environmental and Social Standards (ESSs) and Environmental, Health and Safety Guidelines (EHSGs) and Guidance Notes:
    a. World Bank Group (WBG) Environmental and Social Standard 1 (ESS1) on assessment and management of environmental and social risks and impacts – Clause 28 (b) "the environmental and social assessment, informed by the scoping of the issues, will consider all relevant environmental and social risks and impacts of the project,

including: …. threats to human security through the escalation of personal, communal or inter-state conflict, crime or violence ...";

b. WBG Environmental and Social Standard 4 (ESS4) on Community Health and Safety sub-section (B) on Personnel Security;

c. WBG General Environmental, Health and Safety (EHS) Guidelines;

d. Good Practice Note on Assessing and Managing Risks and Impacts of the Use of Security Personnel, 2018;

(b) Voluntary Principles on Security and Human Rights Toolkit, Version 3, 2008 - the KEWASIP, as appropriate, should 'support efforts by governments, civil society and multilateral institutions to provide human rights training and education for public security deployed to the project;

(c) UN Code of Conduct for Law Enforcement Officials – all law enforcement officials in the KEWASIP to sign a code of conduct to respect and protect human dignity and maintain and uphold the human rights of all persons;

(d) Basic Principles on the Use of Force and Firearms by Law Enforcement Officials, 2016 – Law enforcement officials in the KEWASIP shall not use firearms against persons except in self-defense or defense of others against the imminent threat of death or serious injury, to prevent the perpetration of a particularly serious crime involving grave threat to life, to arrest a person presenting such a danger and resisting their authority, or to prevent his or her escape, and only when less extreme means are insufficient to achieve these objectives. In any event, intentional lethal use of firearms may only be made when strictly unavoidable to protect life;

(e) The Universal Declaration of Human Rights, 1948 – the KEWASIP should ensure no fundamental human rights are violated in the implementation of project activities;

(f) National laws

a. The Penal Code, 2016 – covers a range of offences e.g., theft, larceny, vandalism, etc. Which are anticipated by this plan;

b. Prevention of Terrorism Act, 2012 – some KEWASIP project activities will be implemented in project areas prone to terrorism activities e.g. Garissa, etc.;

c. Counter-Trafficking in Persons Act, 2010 – in addition to the Constitution and Employment Act, this Act will be key in mitigating aspects of forced labour in the project;

d. Independent Policing Oversight Act, 2011 – provides for civilian oversight of police. Any excessive use of force by police in the project should be reported to IPOA for redress;

e. National Police Service Act, 2014 – guides police activities. Ad hoc engagement of police in the project should be done in accordance with this Act; and

f. Private Security Regulation Act, 2016 – regulates private security industry and their collaboration with national security.

3 OVERVIEW OF THE SECURITY SITUATION

3.1 Security Risk Categories

Different security risks exist in Kenya and may impact the Project, whether new or changing. The risks must be communicated without delay through the relevant designated officers at national, county and community levels and be recorded as identified security risks in the security log. The security risks can be categorized into:

1. **Internal Risks** may include but are not limited to illegal, unethical, or inappropriate behavior of project personnel or those directly affiliated with it, such as employee theft, workplace violence, and labor unrest, potentially associated with sabotage. Other risks include the risks

emanating from security personnel and associated arrangements e.g. brutality towards project workers and local community members from KFS and KWS rangers as they perform their duties and NPS officers when engage for higher security threats; and

2. **External Risks** caused by the actions of people outside the project who seek to take advantage of opportunities presented by the implementation of the project, such as common criminal activity; disruption of the project for economic, political, or social objectives; and other deliberate actions that have a negative impact on the effective, efficient, and safe operation of the project. In extreme cases, these could include terrorism, vandalism, banditry, inter/intra community conflicts, armed insurgency, coups, or war.

The main security risks in Kenya include:

1. Criminal offences;
2. Terrorism;
3. Law enforcement officers' brutality towards project workers and local community members;
4. Cattle rustling/inter-tribal or communal violence which could pose a threat to project personnel;
5. Industrial action leading to strike or disruption of work, social conflict, civil unrest;
6. Reaction of community to an incident or accident involving project personnel or asset;
7. Threat of armed attack;
8. Theft/ Larceny;
9. Kidnapping;
10. SEAH/GBV;
11. Vandalism; and
12. Occupational health and safety (OHS) risks for security personnel at construction sites.

3.2 Security Risk Assessment (SRA)

3.2.1 SRA Overview

As there is no accepted industry-wide standard for Risk Assessments, the exact format and methodology are open to challenge. Therefore, the KEWASIP must have a written formal process to maintain the credibility of the process. The Risk Assessment process has many variations. Essentially, any useful KEWASIP Risk Assessment is one that catalogs all known threats and evaluates their likelihood to occur and their potential impacts. Contingencies can then be planned to contain or protect against the consequences. Risk managers often use this basic methodology to assess a range of safety, environmental and even operation risks to a project.38

Two supporting procedures for Risk Assessments that are not always included in the basic security Risk Assessment (RA) process are the Threat Register and Mission Essential Vulnerability Assessment (MEVA). These tools are useful in verifying and validating the basic assumptions that underpin all RAs. The Threat Register enumerates all realistic threats. It should include threats to the local community caused by the KEWASIP operations, as well as threats to the site from the local community (mirror imaging).39

38 VPSHR toolkit *https://www.miga.org/sites/default/files/archive/Documents/VPSHR_Toolkit_v3.pdf*

39 Ibid.

Threat Register

The Threat Register is a catalog list of potential threats to the project. It describes each activity and defines the parameters for later analysis. The Register defines and categorizes threats, but does not consider cause, probability or severity of impact on the project's people, assets, continued operations or reputation. The Threat Register answers the question, "Did you consider possibilities X, Y and Z?"

The Threat Register will develop over time as new threats emerge, other threats merge, and some threats even disappear. Below table shows a Threat Register for the KEWASIP.

Table 3 Sample Threat Register for KEWASIP

Threat/Hazard	Application Mode	Duration	Extent of effects: Static or dynamic	Mitigating or Exacerbating circumstances
Criminal Offenses (fixed location) Breakdown of law and order, local police unable or unwilling to restore calm.	Criminal gangs Rogue project workers or community members	Minutes	For small scale thefts of light equipment, fuel and personal effects, the effect may be quick. However, where aggressions are involved, damage may be long-lasting, if project equipment is stolen.	Standard physical security design should be the minimum mitigation measure.
Terrorism (fixed location) Breakdown of law and order, local police unable or unwilling to restore calm.	Use of weapons and explosives to destroy project investments or disrupt project activities. Terror gangs e.g. Al Shabab, etc.	Minutes to hours, even weeks and months depending on intent.	If the goal is to destroy physical assets, the initial effects are quick. But damage may be long lasting if the perpetrators intend to disrupt operations, take hostages or cause injury or death.	External assistance complicated by remote nature of the local site location, limited road infrastructure and air strips, few resources (Communications, electricity and fuel supplies), limited government public security forces in the area.
Civil unrest (fixed location) Breakdown of law and order, local police unable or unwilling to restore calm	Aggrieved community members that threaten project sites Striking project workers	Hours to days or even weeks	Restricted access to project sites. Travel only by air Radio communication at risk Destruction of project equipment	External assistance complicated by remote nature of local site location, limited road infrastructure and air strips, few resources (Communications, electricity and fuel supplies), limited government public security forces in the area.
Cattle rustling (fixed location) Local police unable or unwilling to track stolen cattle.	Organized criminal gangs Panicky community members that threaten project sites Cultural practice	Hours to days or even weeks	Restricted access to project sites Destruction of project physical assets Light arms borne by rustlers or locals could pose a security threat to project workers and project implementation.	External assistance complicated by remote nature of site, limited road infrastructure and air strips, few resources (Communications, electricity and fuel supplies), limited government public security forces in the area.

Threat/Hazard	Application Mode	Duration	Extent of effects: Static or dynamic	Mitigating or Exacerbating circumstances
Armed attacks and kidnappings (in locations where community workers will be engaged)	Attacked due to carrying large sums of money to pay community workers	Minutes to hours	The effect may be quick. However, where aggressions are involved, damage may be long-lasting, if wages are stolen.	use cashless transactions as much as possible. Where risks may be high, the armed security teams may be called upon to provide escort to the destinations.
Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) (Fixed locations where law enforcement is minimal)	Influx of workers and increase in wages, power imbalances	Minutes	Due to involved aggressions, the damage will be long-term and psychological trauma.	all stakeholders especially the girls and women will be sensitised on how to avoid such incidences and the correct steps to take and channels to use to report in case they face the are affected. The project GRM will also have a dedicated channel to handle SEAH incidents. Project and contractor staff will be required to sign and adhere to appropriate codes of conduct. Progress on execution and adherence will be reported on regularly.

3.2.2 SRA Matrix

An impact and likelihood risk matrix has been adopted to determine the security risk level.

Table 0-1 shows the three security risk levels (Low, Medium, and High) and how they are determined based on likelihood and consequences/sensitivity. Likelihood and consequence values range from 1 to 4 as follows; very low = 1, low = 2, medium = 3, or high = 4. Security risk level is determined by multiplying the sensitivity and likelihood values for each identified risk.

Table 0-1 Security Risk Level Determination Matrix

Risk Level		**Consequence**			
		C1	C2	C3	C4
Likelihood	L1	1 Low	2 Low	3 Low	4 Medium
	L2	2 Low	4 Medium	6 Medium	8 Medium
	L3	3 Low	6 Medium	9 High	12 High
	L4	4 Medium	8 Medium	12 High	16 High

Table 0-2 Security Risk Level Findings, Mitigation and Contingent Actions

Risk description	Risk Category			Responsibility	Mitigation	Contingent action	Useful resources
	L	C	R				
Criminal offences Theft/Larceny	L2	C1	M	PCU Contractor	• Use of physical security personnel e.g., unarmed guards, etc. • Staff crime security awareness • Permanently etching on equipment (spray paint and initials on a piece of equipment does not qualify as being "positively" identified) • Installation CCTV and Alarm Systems: either standalone or integrated combined with wireless communication to an off-site • Establish formal and consistent reporting and communications mechanisms with public security forces and other stakeholders • Adequate lighting • Perimeter fencing especially material storage areas.	• Escalate to the Kenya Police • Undertake joint risk assessment process including representatives of public security forces in use • Maintain close contact with representatives of public security forces at different levels	VPSHR toolkit *https://www.miga.org/sites/default/files/archive/Documents/VPSHR_Toolkit_v3.pdf*
Terrorism	L4	C4	H	PCU Contractor	• Enhance inter/intra agency cooperation within the project area. • Meet once every two months with the security apparatus at the sub-county and county level • Assess the security situation and make changes to the security management plan • Ensure travelling project staff have NPS escort	Conduct effective risk analysis assessments, and SWOT analyses and Force-Field Analyses related to gaps and needs assessments.	VPSHR toolkit *https://www.miga.org/sites/default/files/archive/Documents/VPSHR_Toolkit_v3.pdf*

Risk description	Risk Category			Responsibility	Mitigation	Contingent action	Useful resources
	L	C	R				
					• Engage with and empower border communities as key contributors in border security and management, • Implement Border Community Policing programs, • Implement information exchange programs and mechanisms[1].		
Cattle rustling	L1	C1	M	PCU Contractor	• Initiate peace building process among the affected communities • Use traditional institutions in creating peace, security, law and order in community policing and conflict management. • Carry out civic education by use of the local CSOs. • Offer vocational and technical skills to the youths and or initiate income generating project to engage youths.	• Strengthening of surveillance within the County boundaries and develop protocols for cross border use • Initiate "List of Shame" among the politicians and prominent pastoralists who incite youth to engage in cattle rustling	
Armed attack/ Kidnapping	L3	C4	H	PCU Contractor	• Use of physical security personnel • Conduct project staff crime security awareness. • Permanently etching on equipment (spray paint and initials on a piece of equipment does not qualify as being "positively" identified) • Installation CCTV and alarm systems: either standalone or integrated combined with wireless communication to an off-site • Establish formal and consistent reporting and communications mechanisms with	• Never fight back when apprehended with armed people. • Listen carefully to instructions and do as you are told (if instructions are difficult to hear, ask politely but firmly for them to be repeated), • Inform the victim's family timely manner. • Do not make any sudden movements that might startle the criminals or be interpreted	VPSHR toolkit *https://www.miga.org/sites/default/files/archive/Documents/VPSHR_Toolkit_v3.pdf*

Risk description	Risk Category			Responsibility	Mitigation	Contingent action	Useful resources
	L	C	R				
					public security forces and other stakeholders. • Adequate lighting • Perimeter fencing especially materials storage areas	as an attempt to resist or escape. • Do not hesitate if told to move and do so in a controlled manner. • Do not try to argue or make provocative comments. • Do not stare or make eye contact with the criminals.	
Industrial action	L1	C4	M	PCU Contractor	• Adhere to all provisions in the Project Labour Management Procedure (LMP) • Understand the nature of the dispute, the stated reasons, the underlying reasons and any "hidden agenda" • Adhere to provisions of the workers' grievance mechanism and publicize it among workers. • Compliance with national employment and labour laws especially contracting, working hour management and timely payment of wages.	• Use the alternative dispute resolution: Conciliation, mediation and or arbitration, • Identify the legal strategy to be pursued and associated consequences.	KEWASIP's LMP
Hostility	L1	C4	M	PCU Contractor	Adhere to all provisions in the Project Stakeholder Engagement Plan (SEP)	• Set some ground rules within the community groups, and • Revisit the group's purpose.	KEWASIP's SEP
SEA/GBV, and incident response	L1	C1	L	PCU Contractor	• Adhere to all provisions in the Project Grievance Redress Mechanism (GRM) • Abide by the requirements of SEA/GBV Action Plan for the project being prepared	Continuous SEA/GBV awareness creation the hired firm.	KEWASIP's GRM in SEP and LMP KEWASIP's SEA/GBV Action Plan

Risk description	Risk Category			Responsibility	Mitigation	Contingent action	Useful resources
	L	C	R				
					• Ensure Code of Conduct is executed by all parties as appropriate.		
OHS Risks for Construction Sites Security Personnel (Not rated)							
Slips, trips, and falls				PCU Contractor	• Conduct site assessments to identify dangers/hazards. • Conduct site-specific training to make security personnel familiar with the site. • Clear communication of expectations is important to injury prevention. • Conduct health and safety training • Barricade and/or use warning tape to mark off hazardous areas and prevent people and vehicles from going into those areas. • Regularly inspect sites for ground instability. • Inspect ladders before climbing. Never climb on a shaky ladder or a ladder with slippery rungs. • Conduct routine worksite safety inspections for hazards that can arise from changing conditions (weather, soil conditions, construction activity, and so on). • Work with site safety personnel to make sure that the environment is made as	Include OHS for security personnel requirement in all contracts with NPS, security companies and partner telcos.	WBG EHS Guidelines WBG ESF Online resources on security personnel OHS risks and management

Risk description	Risk Category			Responsibility	Mitigation	Contingent action	Useful resources
	L	C	R				
					safe as possible for the personnel who must patrol the site after hours.		
Assaults				PCU Contractor	• Equip security personnel with personal protective equipment (PPE), lone worker safety devices e.g., handheld satellite devices, etc., as well as accessible communication devices to increase their safety, particularly those working alone, during late hours. • Learn techniques for dealing with violent behavior.		
Contact with objects/animals				PCU Contractor	Use services of an expert dog trainer; verify that all the dogs are vaccinated and have mouth muzzles.		
Transportation accidents				PCU Contractor	• Ensure vehicles are properly maintained and regularly serviced. • Ensure vehicles are loaded safely and correctly, as overloading or improper loading can cause accidents. • Provide PPE e.g., gloves and safety glasses, etc., and enforce usage. • Ensure personnel handling materials are trained to handle them safely and that the materials are packaged and labeled correctly.		KEWASIP ESMP
Overexertion				PCU Contractor	• Clear communication of expectations is important to injury prevention e.g., Include lifting requirements in job descriptions. • Identify overexertion risks.		

Risk description	Risk Category			Responsibility	Mitigation	Contingent action	Useful resources
	L	C	R				
					• Provide lifting aids or use safe lifting techniques e.g., lift knees instead of lower back, etc. • Prohibit solo lifting of heavy loads. • Require frequent short breaks. • Encourage early reporting of overexertion injuries. • Conduct health and safety training		
Exposure to harmful substances or environment.				PCU Contractor	• Conduct regular checks and proper storage according to the temperature requirements of the chemical or substance. • Conduct health and safety training		

Situation Analysis Matrix for the security within some of the project counties is shown in

Table 0-3. This analysis is based on desk reviews.

Table 0-3 Situation Analysis Matrix for the security within some of the project counties

#	SECURITY THREATS PROJECT / COUNTIES	Criminal offences	Theft/ Larceny	Terrorism	Cattle rustling	Armed attack / Kidnapping	Industrial Action	Community Hostility	SEAH, and incident response
1.	Kitui	Medium	Medium	Medium	Low	Medium	Low	Low	Medium
2.	Makueni	Medium	Low	Low	Low	Medium	Low	Low	Medium
3.	Meru	Medium	Low	Low	Low	Medium	Low	Low	Medium
4.	Tana River	Medium	Low	Medium	Low	Medium	Low	Medium	Medium
5.	Kwale	Medium	Low	Medium	Low	Medium	Low	Medium	Medium
6.	Marsabit	Medium	Low	High	High	High	Low	Medium	Medium
7.	Garissa	Medium	Low	High	High	High	Low	Medium	Medium
8.	Isiolo	Medium	Low	Medium	High	High	Low	Medium	Medium
9.	Samburu	Medium	Low	Low	High	High	Low	Medium	Medium
10.	Baringo	Medium	Low	Low	High	High	Low	Medium	Medium
11.	Laikipia	Medium	Low	Low	Medium	Medium	Low	Medium	Medium
12.	Tharaka-Nithi	Medium	Low	Low	Low	Low	Low	Low	Medium

3.3 The KEWASIP SRAs

The SRAs will be commissioned for subprojects rated medium to high risk by either the PCUs or contractors. The rating used is shown in table above. The SRA findings will be used to develop site specific SMPs and feed into the method statements. Contractors shall submit their Contractor Security Management Plans (cSMPs) as part of method statements to PCUs for review and approval within twenty-two (22) working days after their contract effectiveness date. The cSMP shall be guided by this overarching Project SMP.

If the cSMP is Not Approved, the Contractor shall amend it within ten (10) Working Days of a notice of non-approval from the PCU and re-submit to the PCU for Approval. The Parties will use all reasonable endeavours to ensure that the approval process takes as little time as possible and, in any event, no longer than fifteen (15) Working Days from the date of its first submission to the PCU. If the PCU does not approve the cSMP following its resubmission, the matter will be resolved in accordance with the Dispute Resolution Procedure.

3.4 Sample Security Risks Summary

3.4.1 Social Conflicts and Civil Unrest

The main risk in the local communities who presume to have been aggrieved is that they can easily and quickly mobilize for a demonstration. Inadequate compensation, and environmental and social concerns can create this kind of scenario. The crowds usually include villagers. Most of the time, negotiations can resolve the situation but in some cases an escalation can occur, leading to violent actions.

Any indications of such a threat must be communicated through the project contractor security manager to the local police officers and complaints may be made to the officer-in-charge of a Police Station [Officer Commanding Station (OCS)] and be recorded in an occurrence book for future reference. The threat should in turn be communicated to the Sub- County Police Commander at the sub-County level and to the County Police Commander using the existing public security channels.

National, county, and local workers could also demonstrate, if there is a perceived discrimination and unfair working conditions in terms of wages, overtime, and welfare. It is NPCU's responsibility to ensure that working conditions for all workers/employees are in line with the national legal framework.

3.4.2 Criminal Offenses

The main risk remains small scale thefts of light equipment, fuel and personal effects which can involve aggressions. To mitigate this risk, materials storage and control, equipment, etc. will be according to the national laws and regulations, fencing off, hiring local security personnel, and relevant good international industry practice (GIIP), including the WBG EHS Guidelines.

3.4.3 Terrorism

There is the ever-imminent threat of terrorism from the lawless Al-Shabab from neighbouring Somalia in the northern counties that could pose a serious threat to the implementation of the KEWASIP's activities. As such, the project stakeholders will be on high alert to avoid incidences of infiltration of the terrorists into the project areas. The stakeholders will also be sensitised to report any situations that may indicate signs of an attack from the terrorist groups. Al-Shabaab militants are suspected to attack telecommunication masts in Mandera County to deter communication[2].

3.4.4 Cattle Rustling

Nomadic pastoralists in Northern Kenya are also known to be armed with light arms, these could pose a security risk to Project workers and the smooth implementation of the Project in the area, especially if incidents of cattle rustling occur. This occurrence could increase conflict between communities.

3.4.5 Armed Attacks and Kidnappings

The project stakeholders may be exposed to this risk where the project personnel will be expected to carry huge sums of money or valuable items. The stakeholders will be sensitised to use cashless transactions as much as possible. Where risks may be high, the armed security teams may be called upon to provide escort to the destinations.

3.4.6 SEAH

The risk of SEAH in the project activities/operations is expected to be medium and all stakeholders especially the girls and women will be sensitised on how to avoid such incidences and the correct steps to take and channels to use to report in case they face the are affected. The project GRM will also have a dedicated channel to handle SEAH incidents. Project and contractor staff will be required to sign and adhere to appropriate codes of conduct. Progress on execution and adherence will be reported on regularly.

3.5 Security Arrangements

3.5.1 Private Security

Contracted private unarmed security will provide basic site protection for project sites, provide preventive and defensive services, protecting project workers, facilities, equipment, and operations wherever they are located. Private security personnel have no law-enforcement authority and will not encroach on the duties, responsibilities, and prerogatives reserved for public security forces.

Contractors will be responsible for hiring and maintaining them until subprojects are handed over to KFS, KWS, and the community. In selecting private security providers, the project and contractors will perform proper due diligence that will include screening for institutional reputation, training standards, procedures for screening employees, and any history of allegations of human rights abuses or other criminal behavior. The unarmed security personnel can undertake basic security duties such as access control and perimeter security management; and if deemed necessary, the police may be engaged on a reactive basis. This approach will alleviate undue pressure on local policing resources and reduce the risks of engaging armed officers. The NPCU will assess risks posed by these security arrangements to persons within and outside the Project site.

Contracted private security firms shall evidence:

- Hiring in accordance with national labor laws;
- Giving preference in hiring to qualified local candidates where possible; and
- Promoting diverse hiring practices, including gender and indigenous inclusiveness.

To ensure proper performance, the project and its contractors will undertake audits, assist with training including on community relations, inquire into any credible allegations of abuse or wrongdoing, and monitor site performance on an ongoing basis.

3.5.2 Public Security

Public security involvement in the Project shall be engaged as below. Three public security cadres may be involved according to the threat level:

- **KFS and KWS Rangers** will be engaged full-time as per the guidance of their respective Acts. They are expected to patrol project areas as normal routine activity. The Acts confer any officer of the Service who is of or above the rank of Sergeant Forest Ranger shall have the same powers as a police officer under the Criminal Procedure Code and the National Police Service Act, 2011. The rangers shall protect the following:
    - Restored vegetation cover and water pans in wildlife corridors;
    - Planted seedlings in rehabilitated degraded ecosystems; and
    - Temporary enclosures for natural regeneration.

- **National Police Service (NPS)** – As necessary the police will be engaged on an ad hoc basis. They will be critical in handling most of security incidents emanating from project implementation activities e.g., Criminal offences, Theft/ Larceny, Terrorism, Vandalism, Cattle rustling, Armed attack/Kidnapping, Industrial Action, Community Hostility, SEAH, and incident response.
- **Kenya Defense Forces (KDF)** – Will only be engaged in cases where terrorism threats exist and in border counties e.g., Garissa, Marsabit, etc.

The involvement of the public security cadres at the interface of the Project and communities will be organized in a manner that human rights of workers and community members are always respected.

4 SECURITY RISK MANAGEMENT AND CONTROL

4.1 Physical Security

As indicated in *Section 3.2.1*, project contractors will be required to develop cSMPs. The cSMPs should capture the specific site potential risks and assess the specific physical security, internal and external security risks and shall be submitted to the NPCU for review and approval as part of the method statements.

4.1.1 Communications

Communications with employees and contractors will be critical to ensuring a safe work environment during construction activities. Selected employees' supervisors working on the site and contractor who is working at the subproject will be required to carry a two-way radio. Cell phone coverage may be limited in some project areas, so alternative forms of communication will be needed. The two-way radios supplied to employees and contractors will be capable of:

- Providing immediate emergency instruction to personnel; and
- Notifying proper personnel of a security incident.

NPCU will work closely with contractors and security consultant to develop a program to ensure proper communications during construction, including identification of procedures and equipment for summoning emergency assistance from local authorities.

4.1.2 Construction Security

To reduce security risks during construction, public access to the subproject sites will be limited. The contractor will be required to prepare a cSMP for the construction phase. Preparation of the final site security plan will begin immediately following selection of the contractor within mobilization period and the final plan will be provided to the NPCU and WBG.

4.1.3 Fencing and Gates

Fencing is the first layer of security for any contractor site, deep holes, machinery locations, quarry and borrow it sites, and other dangerous areas with standardized on above 2m fencing, using tension wire in lieu of bars, placing fence barbs up, and securing the bottom of the fencing below grade. Access points/gates are secured with heavy-duty approved padlock.

4.1.4 Exterior Lighting

Exterior lighting can be used in addition to fencing to emphasize and highlight perimeters, gate and guard post access points, entry points into buildings, and areas of interest.

4.2 Security Operating Procedures

4.2.1 Security Guards

The contractors will employ experienced security guards from the local community in collaboration with local administrators for technical help during the employment process. Guards may be stationed

at the contractor's camps/sites, if any and where project machinery is parked. Additionally, "patrol" guards may be assigned to conduct security checks of the contractor's properties. Furthermore, after giving the guards with specific training on potential security and other OHS risks at construction sites, and risk mitigation and emergency response measures, they will perform the following activities:

- **Boundary Security:** the security guard will maintain control of the camps/sites, storage areas and machineries', if any, boundary and protect people from accessing except authorized persons through erecting-control points; and
- **Access-Point Operations:** the security guards will check and screen anybody getting into the camps and facility sites, if any. If somebody armed firearms with the recognition of government and asked to get into the camp, the guard will ask the person to submit the firearm with his/her identification card to the guard and receive guest permission card to enter. Similarly, vehicles will be checked and screened in the same manner at the entrance gate.
- **Luggage search**: A search of personal luggage will be performed by the guards at the access control point to ensure no access of all the prohibited items into the project facilities like: - Alcoholic Beverages, Firearms, knives, and dangerous drugs are not smuggled onto project facilities.

4.2.2 Law Enforcement Support

Public security forces have responsibility for responding to and investigating all criminal activity. They also have the primary responsibility for controlling demonstrations or civil disorder. For incidents involving criminal violations or potentially violent confrontations or demonstrations, they are requested to respond to protect project workers and property. They will be called by respective PCUs and beneficiaries at the community level.

- **Security Patrols:** police in each county/sub-county will patrol the subproject sites to check and supervise the security situation of the sites as part of routine activity.
- **Materials Storage and Control**: where applicable, the project will institute controls over the transport, inventory, and maintenance of storage areas for raw materials, equipment, etc. Note that these are stored in accordance with appropriate national laws and regulations and relevant GIIP, including the World Bank Group Environmental, Health and Safety Guidelines.
- **Decision tree model**: the project security shall adopt a structured approach using the collaborative approach for all the armed security operatives in prioritizing the collection of relevant data during incident response. The structured tree model approach helps to define how questions are answered, allows the incident response team to respond consistently with predictable results. The structured approach also provides for definable, reproducible structures to be created facilitating controlled cost exposure during an incident response cycle.
- **Information and Communication:** information gathering organizing and dissemination will be handled by the cooperation work of local/ward, subcounty, county, regional and national level security officials. Ward level security official will have close relations with the contactor's security management official to categorize, handle, and control sensitive information. Then, ward level security officials will communicate with higher level security officials e.g., subcounty, county, regional, and national level, etc., to handle sensitive security issues immediately before it poses any damage on the human life and contractor's asset. Again, the project will detail procedures for categorizing, handling, and controlling sensitive information.

4.3 Managing Public Security personnel

4.3.1 Overview

Interaction with public security forces can be the most challenging aspect of security management for private companies such as contractors and/ or consultants as they do not have power to control their decisions or behaviour. This issue often arises when government security personnel are deployed to provide security services related to projects implemented by private companies, such as construction of key infrastructure developments. Public security may also be assigned to provide regular or temporary support to a local community where the project implementation takes place but not be involved in protecting the specific project on a regular basis. Public security forces involvement in site security emanates from PCUs/contractor requests due to a perceived increase in security threat level at subproject site.

4.3.2 The KEWASIP Public Security Engagement Principles

Public security engagement in the project, except for KFS and KFS, shall be as per measures in Section H – "Public Security" (page 18) of the Good Practice Note on Security:

- Execute a memorandum of understanding (MoU) or other agreement with public security, including commitment to the project's Code of Conduct (CoC) and outlining disciplinary action process.
- Provision and Composition of the Security Personnel: Clarify the reporting structure of the security detail and management contact points.
- Summarize the MoU or agreement for services and request a high-level contact point for security.
- Monitor security performance on an ongoing basis.
- Security Personnel Background Screening: The project will agree with public security how individuals assigned to the project will be properly vetted, including how any allegations of past abuses, inappropriate use of force, or other criminal activity and wrongdoing will be considered prior to allowing an individual to be assigned to the project.
- Security Personnel Equipment: Describe equipment to be provided to guards, including vehicles, radios, nonlethal weapons, and any firearms and ammunition.
- Security Use of Force: Agree with public security providers on the project's principles regarding use of force, to be sanctioned only when it is clearly for preventive and defensive purposes in proportion to the nature and extent of the threat. The MoU or other legal agreement should state that those who are armed must exhibit high levels of technical and professional proficiency and clearly understand the rules for the proportional use of force.
- Security Personnel Training: Provide opportunities for training or observing project training regarding the project Code of Conduct, health and safety requirements that relate to the project, and the public and worker grievance mechanisms. Outline how training completion records will be kept.
- Allegations of Misconduct: Agree on how investigations into any credible allegations of abuse or wrongdoing will be undertaken and how discipline for violations of the project Code of Conduct or other project requirements by security personnel will be handled.

4.3.3 Reporting Police Abuses

The reporting mechanisms include using of the emails: *incidents@kecirt.go.ke*, *info@dcicpu.co.ke*, *nps@nationalpolice.go.ke*, and the toll-free numbers: call 116, 112, 911, and 999.

In cases where it is reporting against the security teams (Police), the documented channels of receiving complaints at National Police Service Internal Affairs Unit (IAU) are:

1. Visiting the nearest police stations
2. Through letters P.O Box 1880 -00200 Nairobi

3. Through-email: *iau@nationalpolice.go.ke*
4. Social media – Twitter - @NPSOfficial-KE
5. Anonymous Reporting Information System (ARIS) USSD *683#, SMS 40683, Toll Free Line 0800721230, Mobile App ARIS, NPS, & Web Form *www.iau.go.ke*
6. Mobile +254 798474619
7. WhatsApp (Videos and Pictures) 0758729917, and
8. Through the media.

5 SECURITY SUPERVISION AND CONTROL

The NPCU bears the overall responsibility for security risks and risk mitigation. The NPCU takes final decisions on security-related issues in consultation with the responsible stakeholders like the CPCUs, contractors and community members. To manage the proposed KEWASIP security issues, all project stakeholders must know their role and responsibility and play pivotal role for the success of the project. Hence, Figure 6-1 shows organogram for the practical implementation of this SMP.

5.1 Security Management Committee (SMC)

SMC composed of KEWASIP's project coordinator, a security consultant recruited by NPCU, Project manager from contractor (on ad hoc basis), representative from MoECCF, representative from KFS representative from NPS and Ministry of Defense (for subprojects in border counties), will be established to follow up the security issues during project implementation.

Other security bodies listed Figure 5-1 will be communicated by the SMC and information will be exchanged for the successful security safeguarding of the project.

5.2 Security Management Chain of Command

The security management chain of command will follow both (i) top to bottom for the response and (ii) bottom to top for information sharing as indicated in the organogram in Figure 0-1. Therefore, the top management for the security management of KEWASIP will be the SMC, while the MoECCF will monitor the practical implementation of the SMP. Other stakeholders indicated in the organogram such as KDF and NPS will receive command from the SMC and then they will pass command to the regional level; the regional level respective security organ will pass the command to County levels and then to local security (ward level) bodies for keeping and protecting the workforce of the project.

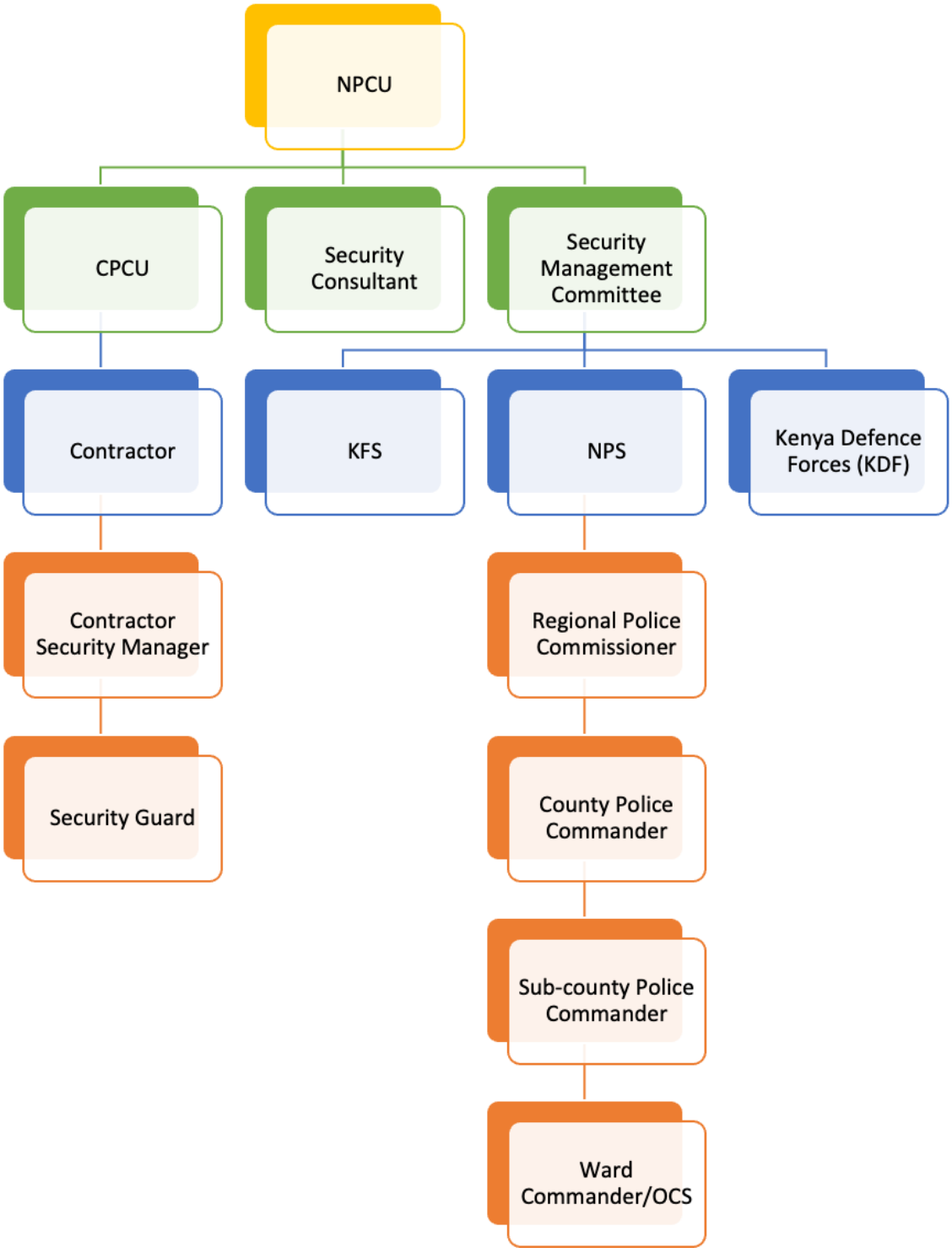
5.3 Responsibility for Conducting Security Risk Assessments

Security risk assessment (SRA) is important to identify potential risks and devise appropriate risk management plans. Therefore, it is the responsibility of the contractor to assess security risks at the subproject site and submit them to the NPCU for review and approval. Additionally, the NPCU will perform its own security risk evaluation as owners of the project.

5.4 Incident Reporting and Disclosure

It is the responsibility of the contractor to record and report monthly any incident to NPCU except for fatalities and other serious incidents causing bodily harm to workers and others connected to the Project which must be reported within 24 hours of occurrence. Similarly, the SMC will report weekly, monthly and quarterly to NPCU the security situation and status of the project. Furthermore, the security situation of the project will be disclosed as required to the local community and interested third party such as WBG. Fatalities will be reported to WBG within 24 hours of occurrence by the NPCU.

SMP Implementation Organogram



5.5 Community Engagement and Grievance Redress Mechanism (GRM)

5.5.1 Community Engagement

The project acknowledges that it may have an impact on communities and strives to mitigate risks. It will do this by providing:

- Requiring contracted security to have regulations for guard offsite behavior;
- Protocol for arrangements with public security;
- Shared information on security arrangements (as appropriate); and
- Grievance mechanism for community members to report issues.

5.5.2 Grievance Redress Mechanism (GRM)

The Project GRM outlined in KEWASIP's Stakeholder Engagement Plan (SEP) provides means of resolving, inter alia, grievances related to security in the project. These grievances include; security incidents, use-of-force incidents, and allegations of abuse, misconduct, SEA/SH or other wrongdoing by security personnel. In the event of these incidences, the following responsibilities and timelines for conducting inquiries on allegations and incidents, suffice:

- KEWASIP makes a commitment to expeditious inquiry into any allegations of abuse or wrongdoing within 14 days;
- Private security contractors may conduct their own inquiry of an incident or allegation, but the project can conduct an independent inquiry on any serious abuse allegation or use-of-force incident; and
- The inquiry findings will include a recommendation of any appropriate disciplinary action and policy or procedure changes that may be needed.

Project GRM Overview

The main objective of a GRM is to respond to concerns and grievances of project-affected parties related to the environmental and social (E&S) performance of the project as well as complaints on the security personnel/use of security forces in a timely, effective and efficient manner.

GM Levels

There are three levels in the GM:

1. **National Level** – managed by the NPCU, overseeing serious or unresolved grievances from county and community levels;
2. **County Level** – administered by CPCUs responsible for coordination and resolution of medium-level grievances (intergovernmental, interdepartmental, and those outstanding from the community level; and
3. **Community level** – dedicated Grievance Redress Committee (GRC) established for each subproject. The GRCs will capture, and track grievances received under the project at the community level, provide information on the way the GRC works, both in terms of procedure and deadlines to settle the raised complaint respecting to the project. GRC composition will vary depending on local situations and project affected persons (PAPs). The local administration will be responsible for establishing the GRCs while NPCU and CPCUs will play a facilitating role.

Grievance Submission Channels

Several channel will be used to submit grievances:

- In person at project sites/local administrator offices;
- Phone – Toll-free telephone hotline/Short Message Service (SMS) line;

- Email; or
- Grievance boxes set up at local KFS offices.

Grievance Redress Procedure

1. Grievance receipt and logging – Any complaint received is forwarded to the KEWASIP GM Coordinator, logged in the KEWASIP Complaints Management System within two (2) days and categorized according to the following complaint types: Environmental, Social and Operational issues; and
2. Verification, investigation, and action (within 10 days) – The investigation of the complaint is led by the Local Grievance focal points or the County grievance focal points or the National Grievance focal point, depending on the complexity and severity of the grievance. A proposed resolution is formulated by the Local, County or National Grievance focal points in consultation with relevant project staff, local authorities, and community representatives if necessary, depending on the nature of complaint;

Information, Education, and Communication (IEC) Materials

Dedicated communication materials (e.g., GM pamphlets, posters, etc.) will be created to help local communities familiarize themselves with the grievance redress channels and procedures. A GM guideline will also be produced for subprojects that ensures opportunities for the affected community to settle and solve their complaints and grievances amicably.

Responsibility

NPCU's environmental and social safeguards specialists will implement the GM to ensure that it is responsive to any concerns and complaints particularly from affected stakeholders and communities. Again, the GRM will ensure that the Contractor and other implementers of the project are responsive to any concerns and complaints, particularly from affected stakeholders and communities regarding security personnel. The steps indicated in the SEP GRM, the timeline, grievance registering and lodging, monitoring and reporting system will be applicable for security personnel.

5.5.3 Special Procedures to Address Issues Related to GBV/SEAH

For the GM to effectively address the grievances on security personnel related to sexual exploitation and other forms of gender-based violence, the project in general and the subproject level GRC must set proactive mechanism functional throughout the project cycle. In this regard, the NPS Children and Women Desks at the County level will be the focal person on issues related with sexual exploitation and other forms of gender-based violence. The GBV assessment report for the project shows that an effective GM with multiple, confidential and safe channels to initiate a complaint, investigate and redress cases that are safe, confidential, non-segmental and effective is required to be established. Strengthen GRC with training, hiring GBV expert on ad hoc basis, and support to ensure safe and confidential reporting, investigation, and remedial action to mitigate cases of GBV/SEA are mandatory.

6 BASIC PRINCIPLES ON THE USE OF FORCE AND FIREARMS BY LAW ENFORCEMENT OFFICIALS

The project has adopted the basic principles from the guidelines for implementation of the UN basic principles on the use of force and firearms by law enforcement officials to promote the proper role of law enforcement officials will consider and must be respected by project implementers within the framework of Kenya national legislation and practice and shall be brought to the attention of law enforcement officials as well as other project persons. The adopted principles include:

1. NPCU and appointed law enforcement agency (KFS, NPS, and KFS) shall adopt and implement rules and regulations on the use of force and firearms against persons by law enforcement officials;

2. NPCU and the law enforcement agency shall develop a range of means as broad as possible and equip law enforcement officials with various types of weapons and ammunition that would allow for a differentiated use of force and firearms;
3. The use and deployment of non-lethal incapacitating weapons shall be carefully evaluated to minimize the risk of endangering uninvolved persons;
4. Law enforcement officials, in carrying out their duty, shall, as far as possible, apply non-violent means before resorting to the use of force and firearms. They may use force and firearms only if other means remain ineffective or without any promise of achieving the intended result;
5. Whenever the lawful use of force and firearms is unavoidable, law enforcement officials shall:
    a. Exercise restraint in such use and act in proportion to the seriousness of the offence and the legitimate objective to be achieved;
    b. Minimize damage and injury, and respect and preserve human life;
    c. Ensure that assistance and medical aid are rendered to any injured or affected persons at the earliest possible moment; and
    d. Ensure that relatives or close friends of the injured or affected person are notified at the earliest possible moment.
6. Where injury or death is caused using force and firearms by law enforcement officials, they shall report the incident promptly to their superiors. A detailed report shall be sent promptly to the Internal Affairs Unit for responsible administrative review and judicial control;
7. NPCU shall ensure that arbitrary or abusive use of force and firearms by law enforcement officials is punished as a criminal offence in line with NPS IAU and the Independent Policing Oversight Authority (IPOA);
8. Exceptional circumstances such as internal political instability or any other public emergency may not be invoked to justify any departure from these basic principles;
9. The law enforcement agency shall ensure that all law enforcement officials are selected by proper screening procedures, have appropriate moral, psychological and physical qualities for the effective exercise of their functions and receive continuous professional training; and
10. NPCU and the law enforcement agency(ies) shall undertake the policing of unlawful assemblies, policing persons in custody or detention in line with the provision of the UN basic principles on the use of force and firearms by law enforcement officials, 2016.

7 BUDGET AND RESOURCES FOR SMP IMPLEMENTATION

Table 0-5 below presents budget source and estimated cost for the implementation of SMP. Detailed costs will be included when the contractors prepare their site-specific SMPs. The requirement to prepare the site-specific plans will also be reflected in the contract/bidding documents.

Table 0-5 Implementation Budget for the Security Management Plan

No.	Security Management Issue	Detailed Tasks	Budget Source	Estimated Cost
1.	Provision of Physical Security	• Two-way radio communication between selected employees and the Contractor • Cost for preparation of SMP by the Contractor. • Provision of Fencing using tension wire in lieu of bars and gates and monitoring 24/7 by CCTV or Security guards at the camp sites, machinery locations quarry and borrow sites. • Provision of Exterior lighting to emphasize and highlight perimeters, gate and Guard Post access points, entry points into buildings, and areas of interest.	Contractor	The cost will be prepared when contractors prepare their site specific SMPs.
2.	Security Operations	Employment of experienced security guards from the local community.	Contractor	Contractor is responsible for payment of the monthly salary of security guards/security agencies and per diems for local security officials for their technical assistance
3.	Law Enforcement Support	Local police in each county are assigned to patrol the subproject sites whenever necessary. Besides, the Contractor can request additional forces to be assigned conditionally.	NPS and Contractor	The budget for the local police forces will be handled by the NPS (No separate budget is required). However, if the local police are assigned upon the request of the Contractor, he/she shall cover the expenses including daily per diems for the security personnel.
		Hazardous Materials Storage and Control	NPS and Contractor	The Contractor is responsible for paying a per diem for the local police who guard and supervise the utilization of the hazardous materials.
		Management of Large-scale events such as criminal activity, demonstrations, civil disorder and/ or border conflicts which is not specifically associated with the project.	GOK Security Apparatus (Kenya Defense Forces and NPS) in collaboration with the security guards of the Contractor	GOK is responsible for covering any costs related to securing the subproject areas.
		Human Right Abuse and Gender based violence (GBV) management.	NPS	GOK, under each law enforcement level are responsible for covering any costs related to enforcing the law.

4.	Capacity Building for law enforcement personnel and workers.	• Capacity building for security Personnel deployed and workers on what one should do in case of gunshots, grenades, kidnapping, assault, etc. • Health and safety training.	Contractor	The cost will be prepared when contractors prepare their cSMPs.

[1] Good Practices in the Area of Border Security and Management in the Context of Counterterrorism and Stemming the Flow of "Foreign Terrorist Fighters"
[2] See *https://nation.africa/kenya/counties/mandera/suspected-shabaab-telecommunications-mast-3255916*