Enhancing Community Resilience and Local Governance Project Phase II (ECRP II)

GENERIC ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (G-ESMP)

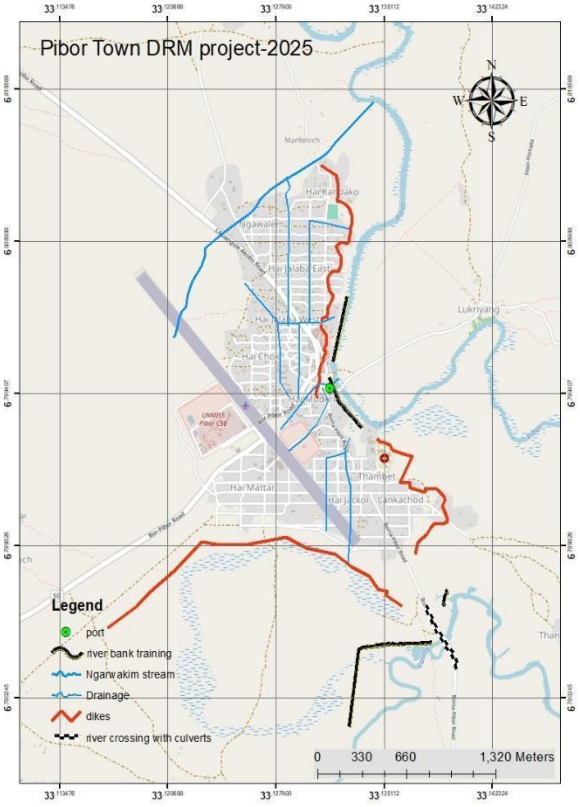
FOR

Disaster Risk Management Infrastructure in Pibor, Greater Pibor Administrative Area (GPAA)

(Construction and Rehabilitation of Dikes and Drainage System with culverts in Pibor Town)

UPDATED G-ESMP REPORT

PIBOR DIKE AND DRAINAGE



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TYPE OF PROJECT: Community Disaster Risk Management Infrastructure sub-projects

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IOM CONTRIBUTOR(S)	▪ *GADA Brian [Environment and Social Specialist]* ▪ *WODEBO Desta Yoseph [DRM Program Officer)]*
IOM INDEPENDENT REVIEWERS	▪ *BARTOLONI Alexander [IOM Project Coordinator]*
PROJECT MANAGEMENT UNIT REVIEWERS	▪ *Samuel Manyok, Senior Social Safeguards Specialist* ▪ *Eluzai John Matata, Senior Environmental Safeguards Specialist* ▪ *Makuach John, Environmental and Social Safeguards Officer*
G-ESMP RECOMMENDED BY	▪ *Guyson Adikoba, PMU Project Manager*
WORLD BANK REVIEW AND NO OBJECTION BY	▪ *Lukas Loeschner, Task Team Leader, World Bank* ▪ *Droma Bank, Urban Development Specialist Co-TTL* ▪ *Dereje Agonafir, Environmental Safeguards Specialist* ▪ *Charity Nyombe, Social Development Specialist* ▪ *Yengi Emmanuel, Environmental Safeguards Specialist*

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EXECUTIVE SUMMARY

This Generic Environmental and Social Management Plan (G-ESMP) has been prepared for the Disaster Risk Management infrastructure in Pibor Town, Greater Pibor Administrative Area (GPAA), South Sudan, implemented under the Enhancing Community Resilience and Local Governance Project – Phase II (ECRP II), financed by the World Bank and implemented by the International Organization for Migration (IOM) on behalf of the Government of South Sudan. After noting the similar aspects and impacts of the proposed subprojects, this G-ESMP is developed in accordance with the project Environmental and Social Management Framework (ESMF), the Environmental and Social Commitment Plan (ESCP), and the World Bank Environmental and Social Framework (ESF), and is aligned with relevant national laws and regulations of South Sudan.

Pibor Town has experienced recurrent, prolonged, and severe flooding since 2019, resulting in widespread damage to housing, health and education facilities, markets, roads, drainage infrastructure, and the airstrip, as well as repeated displacement of populations and loss of livelihoods. Flooding has also constrained humanitarian and government access during rainy seasons, exacerbated food insecurity, increased public health risks, and heightened protection concerns, including gender-based violence (GBV). The Disaster Risk Management infrastructure is therefore designed as urgent resilience-building interventions to reduce flood risk, protect lives and assets, restore safe access, and strengthen local disaster risk management capacity.

In line with ESS1, the proposed subprojects were screened and categorized as moderate environmental and social risk, reflecting their limited spatial footprint, site-specific impacts, and the availability of well-established mitigation measures. This G-ESMP provides a comprehensive, risk-based framework to identify potential environmental and social risks and impacts across the pre-construction, construction, operation and maintenance, and decommissioning phases, and to define proportional mitigation, monitoring, institutional responsibilities, and reporting arrangements.

The scope of works covered by this G-ESMP includes the construction and upgrading of approximately 7.3 km of earth dikes in strategic low-lying areas of Pibor Town; the rehabilitation and extension of approximately 6.7 km of drainage channels, including culverts and wing walls; minor raising of selected road embankments to restore natural flow paths; landscaping and localized flood protection works near markets and port areas. Geotechnical investigations, particularly focused on local Black Cotton Soils (Vertisols), underpin the engineering design and inform long-term stability and maintenance requirements.

Environmental baseline conditions indicate a low-lying floodplain environment dominated by herbaceous vegetation and wetlands, with heavy clay soils and limited natural drainage capacity. The project footprint is largely within the built-up areas of Pibor Town and does not traverse critical habitats or protected areas. Socio-economic conditions are characterized by a predominantly Murle agro-pastoralist population, seasonal mobility, limited road access during rains, and constrained basic services. As of recent assessments, an estimated 203,000 people—approximately 89 percent of the GPAA population—have

humanitarian needs, underscoring the vulnerability context within which the project is implemented.

Consistent with ESS10, extensive and meaningful stakeholder engagement was undertaken between March 2025 and March 2026 at state, GPAA, Payam, Boma, and community levels. Engagement methods included community meetings, focus group discussions, and key informant interviews, with proactive inclusion of women, youth, elderly persons, people with disabilities, and displaced populations. Stakeholders expressed strong support for the proposed interventions, highlighting expected benefits such as flood protection, improved access, and employment opportunities, while raising concerns related to dust, construction safety, land use, GBV risks, and long-term maintenance. These concerns have been systematically incorporated into the engineering design and G-ESMP mitigation measures. Engagement and disclosure will continue throughout implementation.

The assessment identifies significant positive impacts, including short-term local employment and income generation, enhanced protection of lives and critical public infrastructure, improved food security and livestock health, reduced displacement, and strengthened community resilience to climate-related hazards. Potential adverse environmental and social risks include dust and noise emissions, soil erosion and sedimentation, localized water contamination, temporary vegetation disturbance, occupational health and safety hazards, community safety risks related to traffic and open excavations, labour and working-conditions risks, and heightened GBV/SEA risks due to labour influx and vulnerability contexts.

In line with the mitigation hierarchy and ESS2, ESS3, ESS4, ESS6, ESS8, and ESS10, the G-ESMP defines detailed, implementable measures, including: dust suppression and noise control; erosion and sediment management; spill prevention and waste management following the waste hierarchy; strict occupational health and safety procedures with training and personal protective equipment; traffic and site safety management; Codes of Conduct for all workers; GBV risk mitigation and survivor-centred referral pathways; controlled sourcing and rehabilitation of borrow pits; and a Chance Finds Procedure to manage any unexpected cultural heritage discoveries. Involuntary resettlement is avoided in accordance with ESS5, with subprojects limited to public land or voluntarily allocated land for public interest purposes.

A project-level Grievance Redress Mechanism (GRM), consistent with ESS10, is established to manage complaints related to environmental impacts, labour and working conditions, land access, community safety, and SEA/SH. Multiple access channels—including community focal points, help desks, suggestion boxes, and hotlines—ensure accessibility, confidentiality, and timely resolution, with clear escalation pathways.

The Environmental and Social Management and Monitoring Plan (ESMMP) sets out mitigation actions, monitoring indicators, responsibilities, and reporting requirements across all project phases. Monitoring includes routine site inspections, community feedback, incident reporting (including 24-hour notification of serious incidents), and regular reporting to the Project Management Unit and the World Bank. An indicative G-ESMP budget of approximately USD 70,000 has been allocated for mitigation measures, monitoring and audits, and training and awareness activities.

Emergency preparedness and response procedures are incorporated in line with ESS4, covering fire incidents, flooding and dike breaches, hazardous material spills, and multi-casualty events, emphasizing rapid communication, coordination with authorities, evacuation planning, and regular drills. Capacity-building and training activities for contractors, workers, local authorities, and communities are integral to G-ESMP implementation and long-term sustainability, particularly for operation and maintenance of flood protection infrastructure.

In conclusion, this G-ESMP demonstrates that the Disaster Risk Management infrastructure in Pibor Town is technically, environmentally, and socially sound and consistent with the World Bank ESF, provided that the prescribed mitigation, monitoring, stakeholder engagement, and institutional measures are fully implemented. The expected benefits in terms of flood risk reduction, protection of lives and assets, and strengthened resilience substantially outweigh the identified and manageable risks, supporting sustainable development outcomes for the Greater Pibor Administrative Area.

ACRONYMS AND ABBREVIATIONS

BDCs:- Boma Development Committees 14
CERC:- Contingency Emergency Response Component 15
CRS:- Coordinate Reference System 33
E&S:- Environmental and Social 15
ECRP I:- Enhancing Community Resilience and Local Governance Project Phase I 15
ECRP II:- Enhancing Community Resilience and Local Governance Project Phase II 14
ESMF:- Environmental and Social Management Framework 15
G-ESMP:- Generic Environmental and Social Management Plan 15
ESS:- Environmental and Social Safeguarding 29
FM:- Financial Management 15
GoSS:- Government of South Sudan 30
GPS:- Global Positioning System 33
IOM:- International Organization for Migration 14
KML: Keyhole Markup Language 33
LGB:- Local Government Board 14
M&E:- Monitoring and Evaluation 15
MoFP:- Ministry of Finance and Planning 15
O&M:- Operation and Maintenance 14
PDCs:- Payam Development Committees 14
PDO:- Project Development Objective 14
PHCC:- Public Health Care Centre 20
PHCU:- Public Health Care Unit 20
PMU:- Project Management Unit 15
TPM:- Third-Party Monitoring 15
WB:- World Bank 32
WHO:- World Health Organisation 32

CHAPTER I

BACKGROUND AND INTRODUCTION

Enhancing Community Resilience and Local Governance Project Phase II (ECRP II)

The Enhancing Community Resilience and Local Governance Project Phase II (ECRP II) is funded by the World Bank and managed by the Ministry of Finance and Planning and the Local Government Board (LGB), with the International Organization for Migration (IOM) as the project's implementing partner in 12 counties while the government implements emergency flood response in four other counties through contracted international NGOs The project seeks to strengthen the capacity of local governance and community-level institutions and to build infrastructure to address gaps in basic services in 16 counties across six states and two administrative areas in South Sudan. Since implementation began, THE PROJECT has engaged selected communities in participatory planning processes at the Greater Pibor Administrative Area, Payam, and Boma levels. These processes mobilize and empower communities to convey their needs, analyse challenges they are facing, propose adaptive solutions to those challenges, and vocalize their preferences to promote and shape community development. ECRP II works to operationalize South Sudan's Local Government Act by supporting the functioning of Boma Development Committees (BDCs) and Payam Development Committees (PDCs) as sustainable drivers of community development. The overall Project Development Objective (PDO) is to improve access to services, strengthen flood resilience, and enhance institutional capacity for local service delivery and integrated disaster risk management at the national and sub-national levels.

The project consists of the following components:

Component 1: Infrastructure and Services for Community Resilience

The component supports eligible investments in community-level infrastructure and services and physical investments for flood risk reduction.

Subcomponent 1.1: Community Infrastructure and Services.

This subcomponent supports eligible investments in community-level infrastructure and services in selected vulnerable areas, including additional support for refugee hosting counties, through a participatory planning process.

Subcomponent 1.2: Flood Risk Reduction Investments:

This subcomponent will finance physical infrastructure for flood risk reduction and related technical assessments including feasibility studies, detailed engineering designs, and safeguards assessments. The appropriate solutions and physical investments for flood risk reduction will be determined based on

detailed studies considering the flood hazard, exposure of people, and assets, as well as the vulnerabilities of at-risk communities in the target counties. The proposed Disaster Risk Management infrastructure in Greater Pibor Administrative Area and other flood affected counties are implemented under this subcomponent.

Subcomponent 1.3: Operations and Maintenance (O&M**)**.
The ECRP-II envisions implementing a variety of O&M approaches based on the type of infrastructure, the socioeconomic character of project communities, and the demographic features of locations.

Component 2. Institution Strengthening
The component supports the participatory planning process for the identification of sub-projects to be financed under Component 1, monitoring of the construction of sub-projects, as well as capacity building of relevant national and local institutions.

Subcomponent 2.1. Community Institution Strengthening.
This subcomponent will build on the activities undertaken under Enhancing Community Resilience and Local Governance Project Phase I (ECRP I), albeit recalibrated based on lessons learned.

Subcomponent 2.2. Greater Pibor Administrative Area Government Strengthening.
This subcomponent will support Greater Pibor Administrative Area governments to fulfil their responsibilities for local service delivery and disaster risk management.

Subcomponent 2.3 National and State Government Strengthening.
This sub-component will support the capacity building of the Project Management Unit (PMU), the Ministry of Finance and Planning (MoFP), and the LGB (based on an assessment of their technical competencies) in the areas of Financial Management (FM), procurement, project planning, Monitoring and Evaluation (M&E), O&M planning and execution community engagement methods, and Environmental and Social (E&S) standards.

Component 3: Emergency flood response:
This component will provide emergency flood response activities in selected flood-affected vulnerable areas including areas experiencing a large inflow of displaced population in Northern Bahr el Ghazal (NBeG) and Warrap States. The component will support the rehabilitation of damaged community infrastructure and services or the construction of new infrastructure to reduce flood risks based on an open-menu approach. These include water supply and sanitation facilities, footpaths and community roads, dykes for flood protection, and health and education facilities, as well as Haffirs, among others. All community infrastructure will be built based on the 'build back better' principle and will be resilient to future disasters and climate events.

Component 4: Project Management and Learning

This component will support (a) project management including technical planning, Financial Management, procurement, E&S risk management, and communications; (b) project monitoring which includes a geo-enabled monitoring system and beneficiary feedback/grievance redress mechanism (GRM) which will be accessible by refugees, IDPs and host communities; (c) impact evaluation; (d) continuous conflict analysis; (e) just-in-time studies, as needs arise; (f) financing for a Third-Party Monitoring (TPM) agent; and (g) PMU operating costs.

Component 5: Contingency Emergency Response

A Contingency Emergency Response Component (CERC), initially without a budget allocation, will allow for the rapid reallocation of project funds in the event of natural or man-made crises and major disease outbreaks of public health importance during the implementation of the project, following the World Bank Investment Project Financing (IPF) Policy, paragraphs 12 (Projects in Situations of Urgent Need of Assistance or Capacity Constraints). Implementation modality and eligible activities to be financed under the CERC will be described in a separate CERC Project Implementation Manual.

Project Design Principles

The project design is premised on the following key principles:

Principle 1: Engagement in early recovery and advancing the humanitarian-development nexus to address service needs and strengthen institutions for resilient and sustainable development.

Principle 2: Coordination and leveraging ongoing and planned government/partner investments through working in synergy with other complementary development initiatives, led by the government or other partners to maximize on project investment.

Principle 3: Investment in conflict-sensitivity approaches to ensure the project promotes inter-communal cohesion, including engagement in thematic and geographically themed studies two to four times per year, and assessing the interaction between sub-projects interventions and different conflict and social dynamics.

Principle 4: Focus on sustainability and community-centric development approaches, including promoting climate-resilient designs and building infrastructure that are appropriate for end users to withstand, respond to, and recover rapidly from the negative consequences of climate hazards. Furthermore, designs and building infrastructure consider the use of locally available materials, parts, and labour in dike construction and maintenance.

Principle 5: Ensure appropriate evidence-based O&M approaches are deployed in project communities taking demographic, socio-economic, and sub-projects type factors into consideration.

Principle 7: Inclusion of marginalized groups by being deliberate about gender, age, disability, and displacement status representation across all areas of project activities, for example, through the active participation of women in BDCs and PDCs, as well as youth and others in ongoing project activity.

Principle 8: Reduce South Sudan's vulnerability to flooding and climate-related disasters by addressing the root causes of climate change through the provision of physical infrastructure (levees, embankments,

stormwater drainage, and green infrastructure solutions) to protect communities from floods and improve government technical capacities for flood and disaster risk management.

DISASTER RISK MANAGEMENT INFRASTRUCTURE FOR GREATER PIBOR ADMINISTRATIVE AREA (Dike *upgrading & Drainage System Construction Works)*

In compliance with the project's Environmental and Social Management Framework (ESMF), all proposed sub-projects should be subjected to the environmental and social screening process to assess and determine their environmental and social risks and the corresponding risk management strategy to be adopted. The proposed sub-projects have been subjected to ES Screening and assessment leading to their subsequent classification as subprojects with potential ***moderate*** ES risks. As such, in a bid to provide for the sound management of environmental and social risks, this Environmental and Social Management Plan has been developed to guide the management of identified environmental and social risks during the implementation of the proposed sub-projects.

While the project intervention includes the airstrip upgrade, this G-ESMP is specifically for the dike construction and drainage rehabilitation. This clustering of G-ESMPs (Dike and Drainage G-ESMP, Airstrip and Access Road G-ESMP) was discussed and agreed with the PMU and World Bank during the ISM in May 2026 in line with the initial G-ESMP review comments from the World Bank review. The justification of the combined G-ESMP for the Dike and drainage is that the activities have a lot in common and are being implemented in the same microenvironment. In line with this approach, the Dike and the Drainage activities will have separate impact identification, analysis, evaluation and management plan tables to ensure there is clarity in implementation and monitoring of related impacts. With this packaging, the G-ESMP scope is conventional and not generic.

The identified significant impacts are site specific and are limited in scope and can be readily addressed through mitigation measures outlined in this Environmental and Social Management Plan (G-ESMP).

This G-ESMP is therefore prepared to set out mitigation, monitoring, and institutional measures to be taken during implementation to avoid adverse environmental and social impacts, offset them, or reduce them to acceptable levels whilst enhancing the positive impacts.

CHAPTER 2

Sub-Project's location

The proposed Sub-projects will focus on the (a) Construction/upgrading of new dikes in Pibor Town (about 7.3KM) that will protect existing government and community infrastructure (b) construction of a drainage channel which is about 6.7 KM to facilitate the drainage of rainwater naturally. Pibor Greater Pibor Administrative Area is one of two counties that form the Greater Pibor Administrative Area (GPAA). It borders Jonglei State to the north and west, Eastern Equatoria State to the south and Ethiopia to the east. The dikes that will be constructed in Pibor town are not enclosed dikes because the terrain in Pibor has some high-level ground which is sufficient to protect the town. Thus, the dikes will be constructed in low level areas to ensure that these weak points are strengthened.

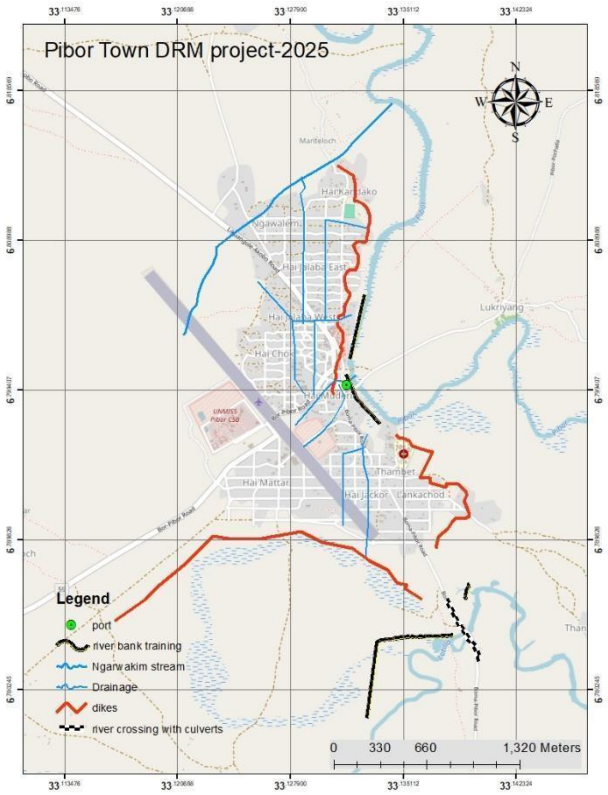


Figure 1. Location of targeted DRM infrastructure in Pibor town

Typical Situation in Pibor Town

Pibor Payam hosts the area's headquarters in Pibor Town. The extensive flooding since 2019 has had a significant impact on government and community infrastructure, including Pibor Town, and limited access to services. Market access continued to be limited, both physically and financially, due to flooding and

insecurity, which has also affected access to income-generating activities. In the rainy season, movement around Pibor Greater Pibor Administrative Area is limited due to poor road conditions and Pibor Town is sometimes dependent on imports via plane from Juba for some goods (REACH 2021). The Greater Pibor Administrative Area is prone to recurrent flooding, which has periodically affected community infrastructure, including WASH facilities, Health, Schools and other social services infrastructure. The figures 2 A and 2 B below show the makeshift river crossing point and some of the infrastructure that was submerged in water in Pibor Town.

Figure 2.A: Lotilla makeshift River crossing point (temporarily backfilled river crossing points that connect two counties), B: Aerial view of section of Pibor town flooded

General Overview of the Proposed Sub-Projects

Finalization of 2025 Dike Upgrading Works

Flood protection works initiated in 2025 will be finalized and strengthened in 2026 to address residual flood risks identified during high-water events.

Technical assessments indicate that certain dike sections remain at risk of overtopping, particularly where crest levels are inconsistent or where erosion has reduced effective height.

Scope of Works:

- Completion and strengthening of partially executed dike segments;
- Crest level adjustment where required to reduce overtopping risk;
- Repair of erosion-affected sections;
- Compaction and surface finishing to improve durability;
- Integration with adjacent drainage structures to prevent localized ponding.

These works are explicitly designed as continuation and risk-reduction measures, not new alignments.

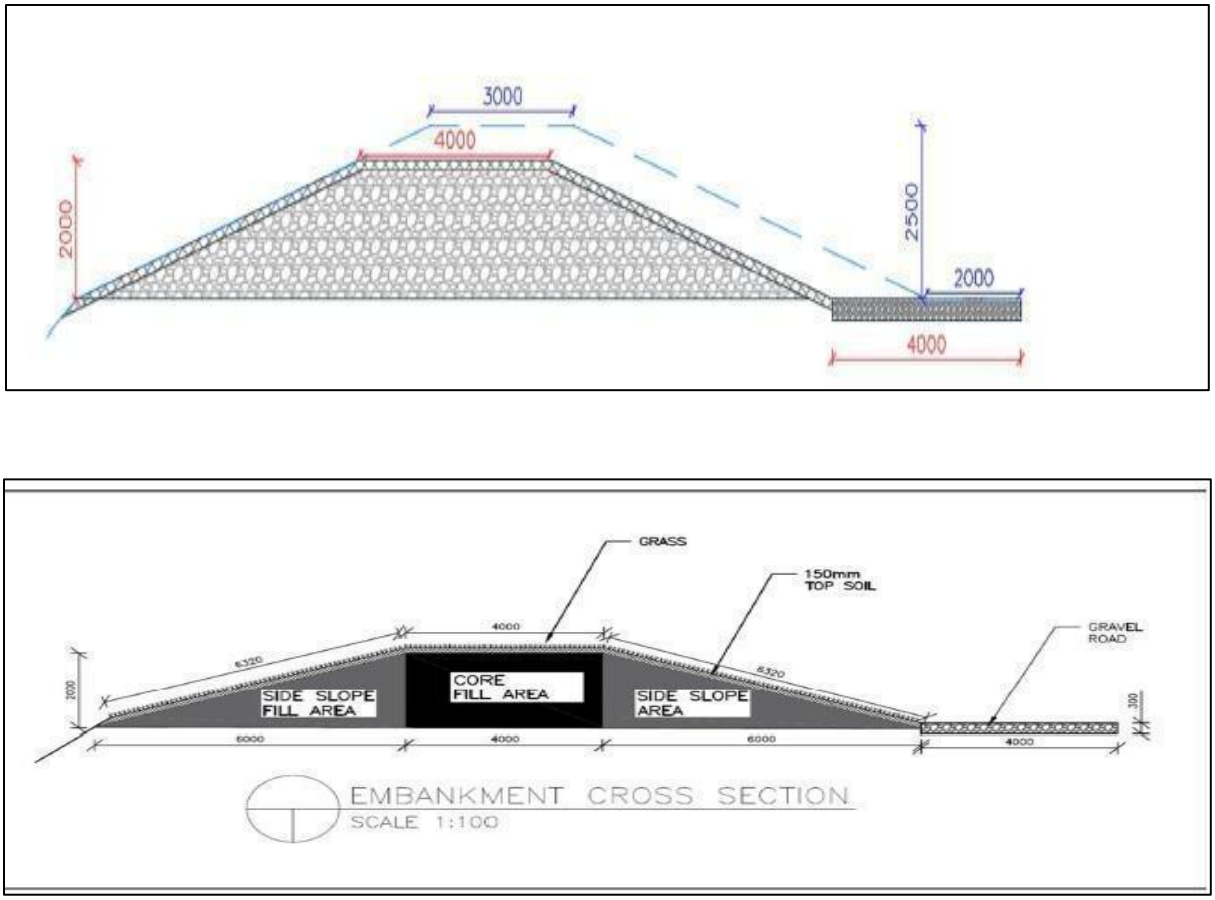


Figure 5. Dike footprint

Pibor Town Drainage System Improvement and Minor Road Embankment Rise

This sub-project addresses stormwater driven flooding within Pibor Town by improving drainage conveyance and selectively raising road embankments that currently obstruct natural flow paths.

Drainage improvements will be implemented in combination with minor key road embankment rises, ensuring that surface water is effectively conveyed toward designated outfalls without causing backflow or overtopping.

Key Components:

- Rehabilitation and extension of open drainage channels;
- Raising of selected road embankments to align with culvert invert levels;
- Improvement of storm-water flow continuity across road crossings;
- Integration of drainage works with existing and upgraded culverts.

The total indicative length of roads requiring minor embankment rise is expected to be approximately 5–10 km, subject to final confirmation by technical assessments led by GWR. These locations and lengths will be clearly identified and mapped within the G-ESMP.

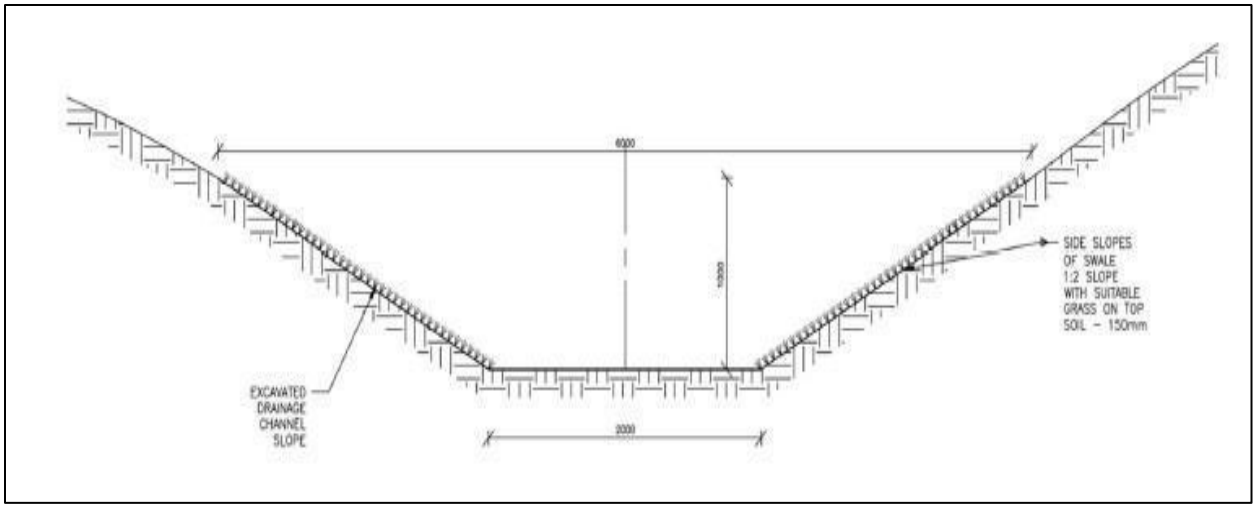


Figure 6. New drainage channel cross section

Culvert Wing Wall Construction (Reinforced and Non-Reinforced)

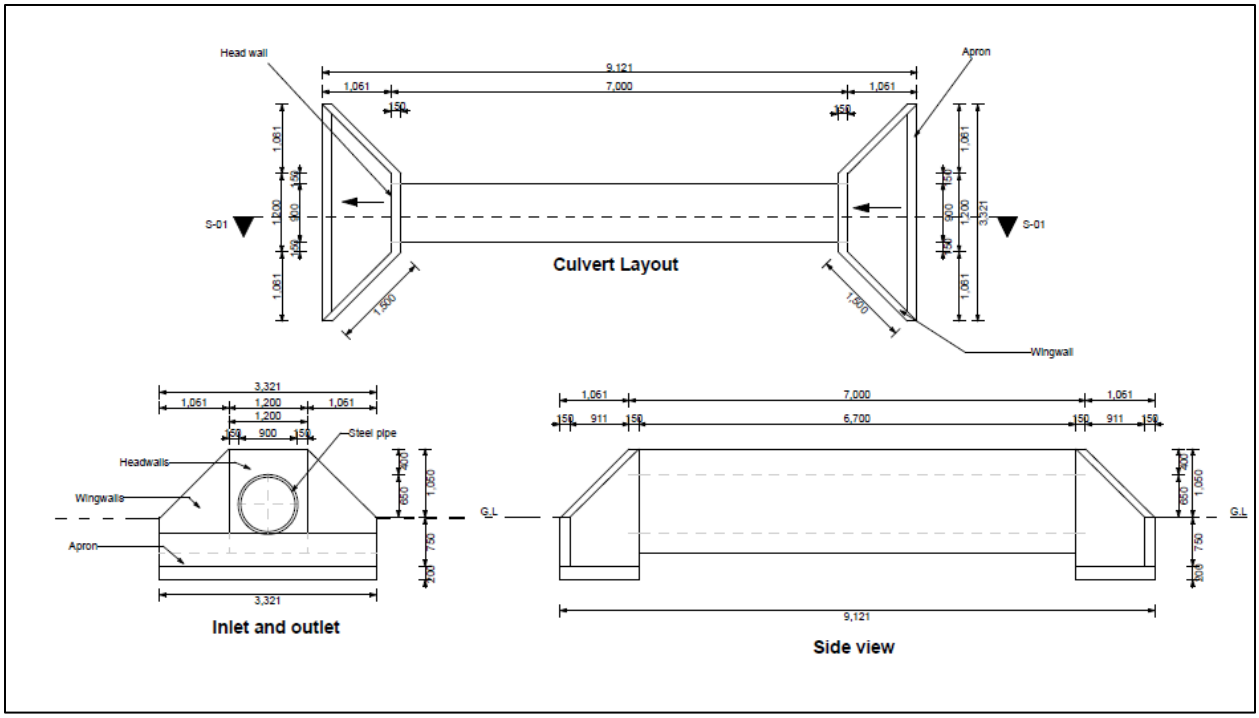
Several culverts within Pibor Town currently lack adequate end protection, increasing vulnerability to erosion, undermining, and structural failure during high-flow events.

This sub-project will implement wing wall works, categorized as follows:

- Reinforced concrete wing walls at high-flow or critical crossings.
- Non-reinforced masonry or stone wing walls at lower-risk locations.

Scope of Works:

- Construction of inlet and outlet wing walls.
- Erosion protection at culvert ends.
- Integration with raised embankments and drainage channels.
- Structural differentiation is clearly defined in design and G-ESMP documentation.



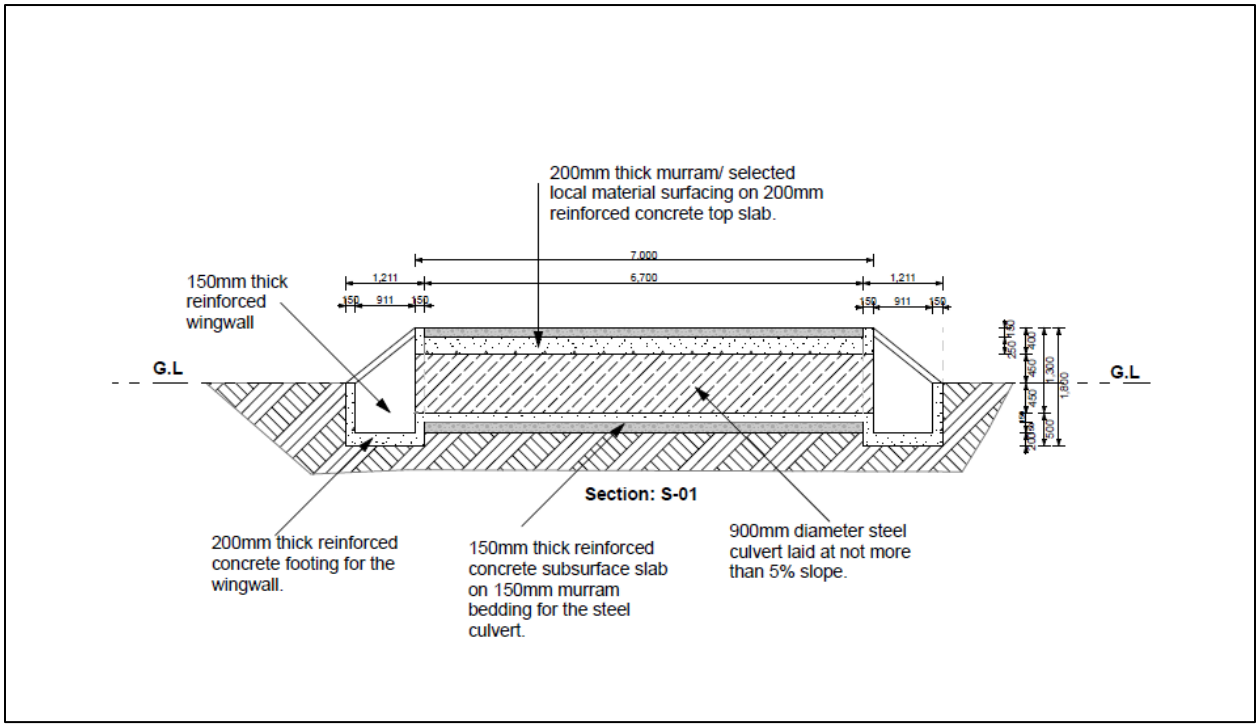


Figure 7. Culvert wing construction models

Landscaping and Minor Embankment Works near Market and Port Area

Localized flooding near the market and river-port area disrupts economic activity and access during the rainy season.

This sub-project includes:

- Landscaping works to stabilize surfaces and improve drainage.
- Raising of Minor road embankment rises to prevent water accumulation.
- Surface shaping to guides run off away from market and port facilities.

These works are designed as low-impact, flood-mitigation measures that complement the broader drainage and access improvements.

Geotechnical investigation

A geotechnical investigation will be carried out to assess the engineering properties of construction materials from the designated borrow pits and project corridors. The soil characteristics will be examined for permeability, stability, seepage potential, settlement, and compressibility. The primary construction material identified for use across the project is the locally available Black Cotton Soil (BCS), which is a clay-rich soil commonly used for embankment and earth structure construction. Its high clay content and fine particle structure limit water permeability, making it suitable for dike and road embankment works. However, when exposed to air and sunlight, the clay loses moisture, becomes dry, and is more susceptible to erosion caused by human activity and flowing water.

The primary objective of the geotechnical investigation is to collect and document soil data from multiple project sites to inform and validate the engineering design of dikes, raised roads, drainage structures, and associated infrastructure. A secondary objective is to support skills transfer to local ECRP II PROJECT staff and contractor personnel through practical involvement in basic material assessment, testing, and selection processes.

Site Description

The investigation includes locations characterized by flat, low-lying terrain adjacent to river systems and surrounding water bodies. The soil profile is dominated by black cotton soil and clay, and due to the flat topography and proximity to river and swamp systems, these areas are subject to recurrent seasonal flooding. This setting places infrastructure at continuous risk of inundation, erosion, and settlement.

Sampling Locations

Soil samples will be collected from multiple locations, including:

- Along the dike alignment
- At the dike crest
- Along drainage corridors
- At river port locations
- From designated borrow pits

Samples will be taken in different depths to allow adequate characterization and understanding of soil conditions across the project area.

Methodology for Existing Dikes and Raised Roads

For existing dikes and raised road embankments, the following methodology will be applied:

a. Identification of representative investigation locations, covering both older and newly constructed embankments
b. Identification of safe access routes to sampling locations
c. Recording of GPS coordinates using the ESRI Field Maps application
d. Photographic documentation of each location using the ESRI Field Maps application, including multiple perspectives and scale reference where possible
e. Visual condition assessment of the embankment at each sampling point, including presence of vegetation, cracks, erosion, or previous repairs
f. Collection of a small, representative soil sample using a hand trowel, ensuring that the embankment is not damaged and that any excavation is properly backfilled with suitable material
g. Photographic documentation of the sample and test results using the ESRI Field Maps application

This approach ensures that soil behaviour is properly documented and that the collected data supports both engineering decision-making and construction quality control.

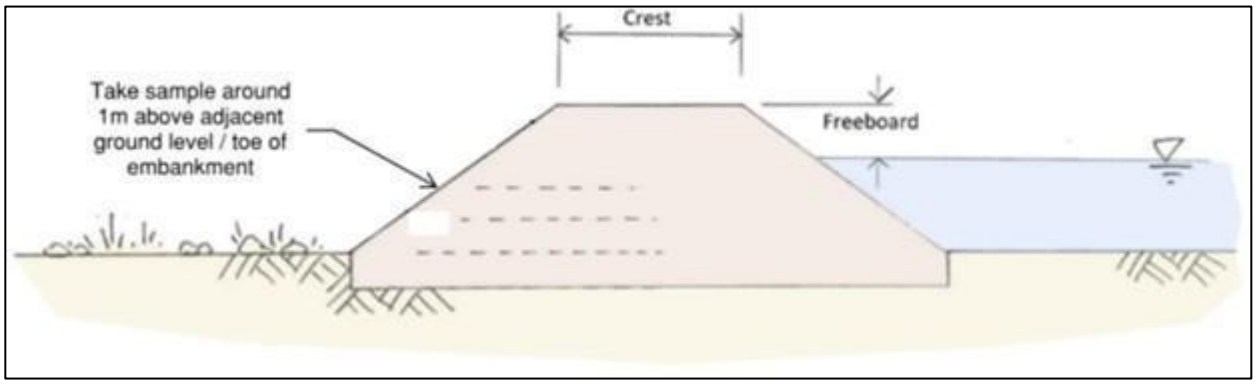


Figure 8. Indicative section through existing dyke

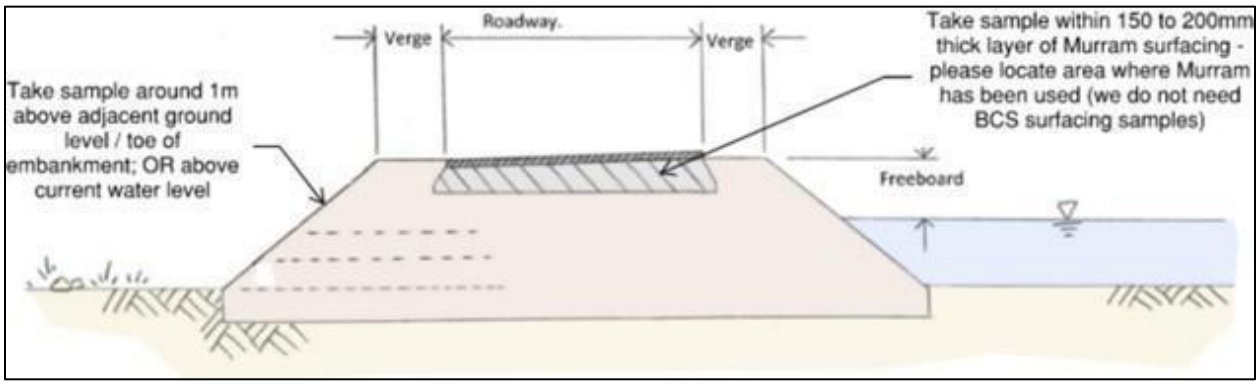


Figure 9.Indicative section through existing raised road.

Schedule of Work

Table 2.Proposed Workplan

PROPOSED WORK PLAN																								
GPAA – Greater Pibor Administrative Area																								
	Month 1				Month 2				Month 3				Month 4				Month 5				Month 6			
	WK 1	WK 2	WK 3	WK 4	WK 1	WK 2	WK 3	WK 4	WK 1	WK 2	WK 3	WK 4	WK 1	WK 2	WK 3	WK 4	WK 1	WK 2	WK 3	WK 4	WK 1	WK 2	WK 3	WK4
Environmental and Social Screening																								
Development of the G-ESMP &Approval of G-ESMP																								
Community Engagement activities																								
Mobilization of Contractors																								
Construction / Rehabilitation works																								
Handover of assets																								

CHAPTER 3

LEGAL AND POLICY REVIEW

This chapter summarises the relevant national legislation and policies, international law and cross cutting IOM policies and Standard Operating Procedures (SOPs) essential for sustainable implementation of the subproject. The World Bank, As the financier of the ECRP II, together with the World Bank Environment and social framework (ESF) will also guide the implementation of the subproject. Any gaps between the local ES legislation, World Bank ESF and the IOM ES standards will be established and mechanisms to bridge the gaps will be adopted with the preference for best standards as much as possible. The legal review and compliance objective cover all phases of the Project Life Cycle and are an important aspect of the ESMP for the subproject.

South Sudan Legislation and Policies

Transitional Constitution of the Republic of South Sudan of 2011:

The Transitional Constitution of the Republic of South Sudan of 2011 provides for Environmental protection amongst other key issues. Article 41 (1) secures the right to a clean and healthy environment and (2) obligation to protect the environment and (3) the right to inherit an environment protected for the benefit of present and future generations. It also emphasizes on promoting rational economic and social development to protect the biodiversity of South Sudan. Furthermore, Article 166 (6) expects local governments to involve communities in decision-making in the promotion of a safe and healthy environment. In view of these rights, the subproject implementation should seek to secure these basic rights for the people within the project areas and the nation in general.

South Sudan Draft Environmental and Protection Bill (2013)

The Bill intends to protect the environment and to promote ecologically sustainable development. Section 18 intends to secure the requirement for Environmental Impact Assessments for identified projects, involvement of communities in decision-making, to anticipate and avoid, minimize, or offset the adverse significant ES effects of development proposals. Section 32 provides for Environmental Audits while Section 20 secures the requirement for Environmental Monitoring. Though the Bill is yet to be passed into law, the ESMP is proactive and configures the project for ES compliance through prevention of environmental degradation and adequate impact assessment, monitoring and reporting.

Environment Policy of South Sudan (2015 – 2025)

The Policy provides guidance on development of laws, regulations and guidelines for the protection, conservation, and sustainable use of the natural resources of South Sudan without compromising the tenets of inter-generational equity. It includes amongst other issues, climate change, management of resources, corporate social and environmental responsibilities and environmental planning. The subproject activities include waste generation, land degradation and air pollution amongst other things and the ESMP will ensure resultant negative impacts are adequately mitigated, monitored and reported on.

The Land Act of 2009 (State of Southern Sudan)

The Land Act defines the land tenure system within the country including the recognition of customary land tenure, which is rampant in the subproject location. In line with the Act, Community land can be allocated to investors if investment activity 'reflects an important interest for the community' and 'contributes economically and socially to the development of the local community'. The Land Act requires the Government to consult local communities and consider their views in decisions about community land. The Act gives pastoralists special protection in that "no person shall without permission to carry out any activity on the communal grazing land which may prevent or restrict the residents of the traditional communities concerned from exercising their grazing rights". Though the subproject does not have compulsory land acquisition, there is need for land acquisition for project activities like establishment of a borrow pit and right of passage for material logistics. The G-ESMP will ensure voluntary land donations are verified and documented.

The Public Health (and Sanitation) Act (2008)

The Act governs environmental health, water quality, and sanitation amongst others. It empowers authorities to prevent air and water pollution, enforce health and safety regulations, and establish water and sanitation management commissions. The Act addresses Environmental Sanitation by providing legal mechanisms to regulate and monitor water, manage waste, and prevent pollution. It also allows for the licensing of private sector environmental sanitation services. This Act is very important in the management of Contractor Camps and its interaction with the community as this can be a source of public health risks.

The Child Act (Act No. 10 of 2008)

The Act regulates the prohibition on child labour, the protection of children and young persons from child labour. It enforces the UN Convention on the Rights of the Child, defining a child as anyone under 18. In line with this legislation, contractors are not allowed to employ anyone below the age of 18 years.

The South Sudan National Gender Policy (2012)

The policy envisioned equality as an inalienable right for all women, men and children, and gender equality as a human right. The goal of this policy is to ensure that gender equality is an integral part of all laws, policies, programs and activities of all public institutions, the private sector and civil society to achieve equality in the cultural, social, political and economic spheres in South Sudan. The policy compels the project to address concerns such as Gender Based Violence, sexual harassment and gender discrimination among others that may be associated with the sub project. Contractors are expected to give equal employment opportunities to both men and women amongst others.

The Labour Act (Act No. 64 of 2017)

The Act establishes the minimum conditions of employment, labour relations, labour institutions, dispute resolution and provisions for health and safety in the workplace. It reinforces the right to equal remuneration for work of equal value as guaranteed by the constitution. Section 6(1) provides that 'No person shall discriminate, directly or indirectly, against an employee or job applicant in any work policy or practice'. Section 6(2) forbids discrimination by any Trade Union, Employers Association or Federation. Section 6(3) defines discrimination as 'any distinction, exclusion or preference with the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation' based

on a series of grounds including sex and pregnancy or childbirth. This Act is very important when considering the occupational safety and health risks associated with the project.

International Conventions Signed and Ratified by South Sudan.

ILO Convention 138, Minimum Age.

The convention provides for the possibility of initially setting the general minimum age at 14 (12 for light work) where the economy and educational facilities are insufficiently developed. South Sudan has informed the ILO that it has set the general minimum age at 14 years. South Sudan ratified the convention in 2012.

ILO Convention 100 on Equal Remuneration.

The convention aims at equal remuneration for work of equal remuneration between men and women. South Sudan ratified the convention in 2012.

ILO Convention 111 on Discrimination.

The convention calls upon states to enable legislation prohibiting all forms of discrimination and exclusion on any basis, including race, sex, religion, etc. South Sudan ratified the convention in 2012.

Convention on the Elimination of all forms of Discrimination against Women (2014)

CEDAW places explicit obligations on states to protect women and girls from sexual exploitation and abuse, among other issues. The accession to CEDAW enabled the country to address issues of customary law involving women's right to inherit and own productive assets, as well as their lack of voice and decision making in family and community matters and the denial of their right of choice to find a family especially in rural settings. In line with this accession, the Contractor needs to ensure that employees do not engage in SEA/SH.

United Nations Convention on Conservation of Biological Diversity (CBD)

South Sudan is a signatory and full party to the United Nations Convention on Biological Diversity (CBD). The country deposited its instrument of accession on February 17, 2014, making it the 194th Party to the global biodiversity treaty. As part of its commitment to the treaty, South Sudan has developed its National Biodiversity Strategy and Action Plan (NBSAP) to help conserve ecosystems, manage protected areas, and promote sustainable resource management across the country. In line with the country's commitment to CBD, Contractors should ensure environmental conservation and rehabilitation of project degraded areas. This includes erosional controls and rehabilitation of gravel borrow pits to mention just a few.

Ramsar Convention

South Sudan is a signatory to the Ramsar Convention. The country acceded to the treaty, which commits the government to the conservation and sustainable use of its wetlands. This commitment centres around the protection of The Sudd, one of the largest tropical wetlands in the world. The project must implement conservation measures because the project area is ecologically and hydrologically linked to the broader Upper Nile wetland basin.

United Nations Framework Convention on Climate Change (UNFCCC)

South Sudan is a signatory and full party to the United Nations Framework Convention on Climate Change (UNFCCC). As a Party to the convention, South Sudan actively participates in the UNFCCC process, having submitted key frameworks such as its Initial National Communication and its National Adaptation Plan (NAP). In line with the country's commitment to UNFCCC, the project needs to ensure that Green House Gas emissions are minimized by using serviced project vehicles and equipment.

World Bank Environmental and Social Management Framework (ESF) and ES Standards (ESS)

World Bank Environment and Social Framework (ESF)

The World Bank Environmental and Social Framework sets out the World Bank's commitment to sustainable development, through a Bank Policy and Environmental and Social Standards (ESS). As part of ES Policy implementation, an Environmental and Social Commitment Plan (ESCP) was developed by IOM to accompany the legal agreement with the Bank. In line with the agreement, IOM developed an Environment and Social Management Framework (ESMF) which outlines the Environment and Social management approaches for the subprojects under ECRP 11. The following World Bank ESS were considered as follows;

ESS 1: Assessment and Management of Environmental and Social Risks and Impacts.
ESS1 sets out the Borrower's responsibilities for assessing, managing and monitoring environmental and social risks and impacts associated with a project. It focuses project lifecycle approach to ES assessment, management and monitoring of risks and impacts; proportionate integrated environmental and social assessments; mitigation hierarchy; consideration of associated facilities; institutional capacity strengthening; planning and documentation; stakeholder consultation, timing of mitigation before commencement, contractor management and disadvantaged and vulnerable groups disproportionate exposure to risks and impacts among other requirements. This G-ESMP will exhibit application of the above considerations.

ESS 2: Labour and Working Conditions.
ESS2 promotes safety and health in the workplaces, fair treatment, non-discrimination and equal opportunity of project workers, protect project workers, including vulnerable workers such as women, persons with disabilities, children (of working age, in accordance with this ESS) and migrant workers, contracted workers, community workers and primary supply workers, as appropriate. The standard requires prevention of all forms of forced labour and child labour, supports the principles of freedom of association and collective bargaining of workers in a manner consistent with national law and provides workers with accessible means to raise workplace concerns. In line with this standard Labour Management Procedures for all forms of project workers was formulated. Though ESS2 specifies a minimum working age of 14 years, subject to preferential working conditions until 18 years is attained, the project will use a minimum of 18 years for employment in line with IOM standard on Child Labour.

ESS 3: Resource Efficiency and Pollution Prevention and Management.
ESS3 promotes the sustainable use of resources, including energy, water and other construction raw materials; avoids or minimizes adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities, project-related emissions of short and long-lived climate pollutants, generation of hazardous and non-hazardous waste and minimizes and manage the risks and impacts associated with pesticide use. This G-ESMP has provided for mechanisms including procedures for waste management, spill response, borrow pits rehabilitation and management of erosion in all the project activities.

ESS 4: Community Health and Safety

ESS4 aims to anticipate and avoid adverse impacts on the health and safety of project-affected communities during the project life cycle from both routine and nonroutine circumstances; promotes services quality and safety, and considerations relating to climate change in the design and construction of infrastructure, including dams. It seeks to avoid or minimize community exposure to project-related traffic and road safety risks, diseases and hazardous materials; effective measures to address emergency events. Traffic management plans and emergency response plans are in place as part of the G-ESMP. There were also detailed design reviews for anticipated infrastructure to enhance public safety of the infrastructure.

ESS 5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement

The standard seeks to avoid involuntary resettlement or, when unavoidable, minimize negative impacts by exploring project design alternatives; avoid forced eviction and mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions. In line with this standard, a Resettlement Policy Framework (RPF) for the ECRP II project was developed and a Resettlement Action Plan (RAP) will be developed where applicable. This subproject needs land for a gravel borrow pit and logistical right of passage. Voluntary Land Donation Forms were completed to document the voluntary donation and the support of the associated stakeholders as part of the G-ESMP.

ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

The standard protects and conserves biodiversity and habitats; applying the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity. ESS6 promotes the sustainable management of living natural resources and supports livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development priorities. For large scale impacts, a stand-alone Biodiversity Management Plan is developed. This subproject does not warrant a stand-alone BMP but related issues will be addressed under the G-ESMP, including and not limited to prevention of siltation and rehabilitation of degraded areas.

ESS 7: Indigenous Peoples, Sub-Saharan African Underserved Traditional Communities

The standard aims to ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of IPs, to avoid adverse impacts of projects on IPs, to promote sustainable development benefits and opportunities for IPs and to obtain the Free, Prior, and Informed Consent (FPIC). Usually where triggered, the standard requires development of an IP Plan. Since most populations in South Sudan qualify to be considered under the IPs standard, the World Bank allows its supported project to proceed without an IPP but requires its project designs to include specific social assessments and community-driven development protections to respect and preserve these unique cultures. This G-ESMP was developed with full consultation of the respective ethnic tribes within the project area where applicable.

ESS 8: Cultural Heritage

The standard seeks to protect cultural heritage from the adverse impacts of project activities and support its preservation, to address cultural heritage as an integral aspect of sustainable development, promote meaningful consultation with stakeholders regarding cultural heritage and promote the equitable sharing of benefits from the use of cultural heritage. In line with this standard, a Chance Finds Procedure was developed as part of the G-ESMP to cater for incidental discovery of cultural heritage during project implementation. Contractors are also obliged to visit the local traditional leadership to get induction on the potential cultural heritage issues. IOM will induct Contractors on the application of the Chance Finds Procedure.

ESS 10: Stakeholder Engagement and Information Disclosure

The standard establishes a systematic approach to stakeholder engagement that will help projects to identify stakeholders, build and maintain a constructive relationship with them, in particular project-

affected parties. The standard assesses the level of stakeholder interest and support for the project and enables stakeholders' views to be considered in project design, environmental and social performance. It promotes and provides effective and inclusive engagement with project-affected parties throughout the project life cycle and ensures that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format. In line with this standard a Stakeholder Engagement Plan (ESP) developed and will be implemented religiously.

IOM Procurement Manual, Global Procurement and Supply Unit (2016)

Section 4.5 provides for consideration of environmental issues as one of the principles governing the award of contracts. Through this provision, IOM may demand the deployment of ES from potential contractors to facilitate mainstreaming of the ES requirements within the contractor's operational arrangement. Section 15 provides guidance when procuring for construction works to the effect that emphasis should be placed on detailed engineering investigations, designs, surveys and environmental impacts of the proposed construction project. In line with this provision, the G-ESMP and all its associated tools are a part of the bidding documents. This inclusion makes compliance to ES issues by the contractor and contract issue and appropriate sanctions can be instigated to encourage compliance by the contractor.

Overall Remark

Success in the implementation of this G-ESMP equally depends on Contractor Management amongst other issues and the Procurement Manual clearly empowers Project Management Teams for effective ES specific contract performance enforcement among other indicators.

CHAPTER 4

STUDY METHODOLOGY

The G-ESMP study was conducted following a multifaceted approach that was anchored on the use of both qualitative and quantitative methodologies. The use of mixed methods was deliberately adopted to ensure data completeness and provide for data triangulation. The Approach to the study is summarized below:

Overview of the Approach

The sub-projects adopted an inclusive approach in the development of the Environmental and Social Management Plan (G-ESMP). The approach focused on involving all the relevant stakeholders[1] at various stages of the preparation of the G-ESMP to ensure that views, concerns, and inputs are captured. Consultations took place starting March until 30 October 2025. The G-ESMP has been prepared following the requirements stipulated by the Government of South Sudan (GoSS) as contained in the ECRP-II environmental and social instruments signed with the World Bank including the ESMF, ESCP, and SEP.

The approach used enabled the team to meet the requirements of the ECRP II ESMF, ESCP, and SEP together with the relevant legal and institutional framework of the Government of South Sudan. Focus was put on understanding the sub-projects background, technology and processes, implementation modalities, and operations given proactively identifying potential significant environmental and social risks. Furthermore, environmental, and social baseline information was obtained using mixed methods which included a review of available literature, detailed physical and biological investigation of the proposed project and its surrounding areas, stakeholder consultations, and the use of advanced scientific information gathering techniques such as remote sensing and the use of geo-spatial tools for data analysis and gathering. Information on climate change and greenhouse gases (GHG) can be referenced in the project report on Grand Water Assessment. The key activities undertaken during the various stages of the G-ESMP development process are summarized in the process below:

[1] Refer to Chapter 4 on stakeholder engagement for more details on the stakeholders engaged.

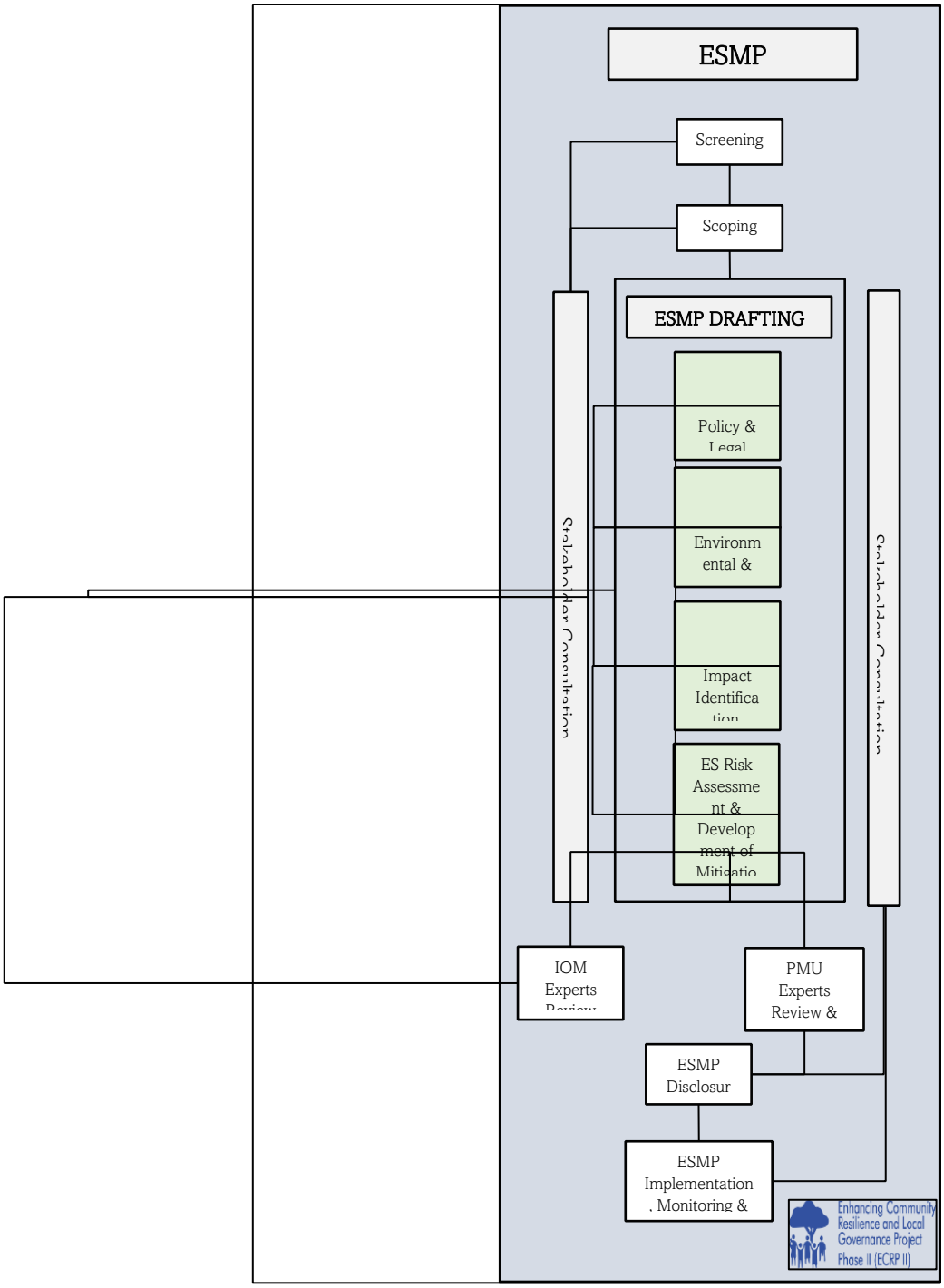


Figure 10: Overview of the G-ESMP Development process

A summary of the methods employed is presented below:

Document review

Document review gave the team a detailed description of the project regarding spatial coverage, preliminary design layout, magnitude, implementation schedules, and anticipated costs. Relevant documents were reviewed

to obtain information on the baseline information. A review of project documents was undertaken prior to specialist site visits. Documents reviewed included but were not limited to the review of:

- ECRP I Environmental and Social Reports for similar sub-projects
- South Sudan's Environmental and Social Laws, Guidelines, and associated government documents
- ECRP II Environmental and Social Commitment Plan
- Stakeholder Engagement Plan (SEP)
- ECRP II Environmental and Social Management Framework
- World Bank (WB) Environmental and Social Framework
- World Bank Environmental, Health and Safety guidelines
- World Health Organisation (WHO) Incinerator guidelines
- Multilateral Environmental agreements
- ECRP I Greater Pibor Administrative Area profiles for Greater Pibor Administrative Area
- Available ECRP II screening reports and associated documents
- ECRP II Project documents
- IOM Procurement Manual, Global Procurement and Supply Unit (2016)
- Engineering designs for proposed infrastructure
- Academic and general literature on construction of Dikes and associated environmental and social impacts

Field Visit

The ECRP II PROJECT G-ESMP team undertook site visits to several project sites located in the Greater Pibor Administrative Area, between March to October 2025. The purpose was to gain an appreciation of the sub-project sites, undertake public consultations with key stakeholders and to gain an understanding of potential environmental and social impacts. The field visits focused on assessing and verifying environmental and social baseline information which included landform trends, land use patterns, biodiversity, natural resources, hydrology, climatic variations, socio-economic activities, social setup and social infrastructure. The field visits were planned to enable determination of the actual physical environmental and social features that could potentially be affected by the sub-projects. Furthermore, the visits enabled the identification of potential positive and negative impacts. Overall, the assessments contributed to the in-depth understanding of the proposed works. Various methods were used during field work which included: (1) Field observations, (2) Checklists and Matrices, (3) Consultations and public participation and (4) Use of geo-spatial and temporal analysis techniques.

Impact identification, assessment, and mitigation

Following the site visits and data collection, the project team members identified and assessed the potential project related impacts according to:

- Nature of impact (Positive or Negative)
- Magnitude of impact (short, medium, or long term)
    - short-term – the impact is temporary and lasts for up to 0-2 years.
    - medium-term – the impact occurs for up to 3-4years.
    - long-term – the impact remains for a substantial time above 4 years, perhaps permanent.

- Likelihood of impact (likely or unlikely). For expedience, a range of 0-4 is used to depict unlikely and certainty.
- Extent of impact (local, widespread)
- Timing and Duration (during which project phase)
- Reversibility (is the impact reversible without mitigation)
- Significance - Impact significance was rated as significant, moderately significant or of low significance.

Impact Assessment

Following the identification and analysis of potential environmental impacts, this section focuses on the evaluation of the significance of the identified impacts and the impact of the potential remedial action or enhancement measures.

A systematic process was followed in evaluating significance, distinguishing between 'as predicted' and 'residual' impacts.

1. Step one involved evaluating the significance of 'as predicted' impacts to define the requirements for mitigation and other remedial actions.
2. Step two involves evaluating the significance of the 'residual' impacts, i.e. after mitigation measures are considered. This test is the critical measure of whether a proposal is likely to cause significant impacts. It is determined by the intensity (a joint consideration of its characteristics used in impact analysis i.e. magnitude, extent, duration, permanence, timing and importance placed on the impact) and the probability of occurrence.

First, a technical judgment was made of the extent to which mitigation will reduce 'as predicted' impacts. Second, a subjective value was placed on the significance of residual impacts, using criteria and tests described below. Assessed significance was found as a product of severity and probability as given below;

Severity x probability = impact significance

The following key will be used in the allocation of significance and importance.

Table 6.3.1: Key for impact severity, probability and significance.

Severity	**Probability**			
	1	**2**	**3**	**4**
1	Low significance	Low significance	Low significance	Moderate significance
2	Low significance	Moderate significance	Moderate significance	Moderate significance
3	Low significance	Moderate significance	Moderate significance	Substantial significance
4	Moderate significance	Moderate significance	Substantial Significance	High significance

The conventional classification was applied for both the positive and negative impacts with the only difference being that when considering positive impact, enhancement measures will be applicable while mitigation was applied to negative impacts. The "as predicted significance" pertains to unmitigated negative impacts and the level of positive benefit had before the enhancement measures. The residual significance refers to the magnitude of negative impacts that remain even after mitigation and refers to the level of positive benefit after the enhancement measures are implemented. For simplicity, integer values are used for severity and probability.

The following may be used to interpret the above significance ratings

Table 7.3 Impact Significance Rating

Significance Range	Significance Category
0	No risk
Above 0 up to 4	Row Risk
Above 4 up to 9	Moderate Risk
Above 9 up to 12	Substantial Risk
Above 12 up to 16	High Risk

Socio-Economic and Stakeholder Consultation and Engagement

The project followed a structured manner in the engagement of relevant stakeholders. The engagement was characterized by stakeholder mapping, coupled with the development and implementation of a detailed stakeholder engagement plan. The stakeholder engagement processes sought to define a technically and culturally appropriate approach to consultation and disclosure of relevant project information. The focus of the process was to improve and facilitate decision making and create an atmosphere of understanding that actively involves relevant stakeholders in a timely manner with special focus on vulnerable groups making sure that these groups are provided sufficient opportunity to voice their opinions and concerns that may influence Project decisions. The project used Key Informant Interviews, meetings, focus group discussions and community meetings to engage relevant stakeholders.

Geo-Spatial and Temporal Analysis and Remote Sensing Techniques

The maps of soil types, settlements and other land uses were undertaken using a combination of Google Earth Pro (version 7.3.1.4507) and QGIS (version 2.12.3-Lyon), aided by MS Paints (version 6.1). Coordinates noted during the site investigations were recorded using the Global Positioning System (GPS) (Model: Garmin, Extex 10) set to the ARC1950 Coordinate Reference System (CRS). The coordinates and the Keyhole Markup Language (KML) files for the project area were loaded onto Google Earth Pro after converting the CRS from ARC 1950 to WGS84 using the Franson Coord Trans software Version 2.30 (Franson Technology AB, Sweden). Coordinate transformation in QGIS was done automatically using the 'on the fly' CRS transformation. The other datasets for mapping were the topography maps and

satellite images from Google Earth Pro. The images were useful in locating the boundaries and areas under cultivation, settlements, civil structures, and other features.

CHAPTER 5

STAKEHOLDER CONSULTATION

Purpose and Scope of Stakeholder Consultation

In accordance with the World Bank Environmental and Social Framework (ESF), and specifically Environmental and Social Standard 10 (ESS10): *Stakeholder Engagement and Information Disclosure*, meaningful stakeholder consultation has been undertaken for the DRM subprojects under ECRP II. The purpose of the stakeholder consultation process was to ensure that affected communities and relevant stakeholders were:

(i) informed in a timely manner about the proposed subprojects;

(ii) provided with opportunities to express their views and concerns; and

(iii) able to influence project design, mitigation measures, and implementation arrangements.

Stakeholder consultations were an integral part of the preparation of this Generic Environmental and Social Management Plan (G-ESMP) and were designed to inform the identification, assessment, and management of environmental and social risks and impacts associated with the proposed works.

Legal and Policy Framework

Stakeholder engagement for the subprojects was guided by the following frameworks:

a) World Bank Environmental and Social Framework (ESF)

b) Environmental and Social Standard 10 (ESS10): Stakeholder Engagement and Information Disclosure

c) Project Environmental and Social Management Framework (ESMF)

d) Project Stakeholder Engagement Plan (SEP)

ESS10 requires that stakeholder engagement be conducted as an ongoing process throughout the project life cycle, commencing at the earliest stages of project development and continuing through implementation and operation. This G-ESMP has been developed in compliance with these requirements.

Stakeholder Identification and Categorization

Stakeholder identification and mapping were conducted to identify individuals and groups that may be affected by, have an interest in, or influence the subprojects. The process drew upon consultations with ECRP II national and field teams, review of secondary data, and knowledge of administrative and community structures within the Greater Pibor Administrative Area (GPAA).

Stakeholders were categorized as follows:

Affected Parties

Affected parties include individuals and groups directly affected by the subprojects, particularly those living in flood-prone and project-affected areas. These include:

- Farmers whose farmlands are affected by flooding

- Traders and market operators in flood-affected trading centres
- Community members residing in project-affected Bomas

Other Interested Parties

Other interested parties include institutions and organizations with an interest in the subprojects but not necessarily directly affected, such as:

- State and local government institutions
- Non-governmental organizations (NGOs)

Vulnerable and Marginalized Groups

Vulnerable groups identified during consultations include:

- People living with disabilities
- Elderly people
- Women and children

Special measures were adopted to ensure their meaningful participation, in line with ESS10 requirements. These included the engagement of vulnerable groups separately and the direct engagement of their representative groups.

Stakeholder Engagement Methodology

Stakeholder consultation was conducted using a range of methods intended to ensure inclusive, culturally appropriate, and meaningful engagement. Engagement activities were conducted at multiple administrative levels, including State, GPAA, Payam, Boma, and community levels.

The consultation methods applied included:

- Formal meetings with government institutions
- Community meetings
- Focus Group Discussions (FGDs)
- Key Informant Interviews (KIIs)

Focus Group Discussions were particularly emphasized to facilitate open dialogue and encourage participation by women, youth, elderly persons, and persons with disabilities. Consultations were conducted in local languages where necessary and in environments free from coercion, intimidation, or manipulation.

Stakeholder Consultation Timeline

Stakeholder consultation for the DRM subprojects was conducted in a phased and iterative manner between **March - October 2025 and January to March 2026**, consistent with ESS10 principles of early and continuous engagement.

Table 3. Stakeholder Consultation Timeline

Period	Level	Key Activities	Purpose
March 2025	State	Entry meetings and formal consultations	Project introduction and alignment with state priorities
April 2025	GPAA	Inception meetings	Disclosure of ESF/ESS requirements and project scope
May 2025	GPAA / County	Key Informant Interviews	Identification of flood risks and priority needs
June 2025	Payam	Payam entry meetings	Confirmation of selected Payams and Bomas
July 2025	Boma	Boma-level consultations	Community mobilization and BDC reactivation
August 2025	Community	Community meetings and FGDs	Identification of impacts, benefits, and concerns
September 2025	Community / Site	E&S screening consultations	Risk identification and mitigation planning
October 2025	GPAA / Community	Feedback validation meetings	Disclosure of responses and mitigation measures
January -March 2026	GPAA	Engagement of stakeholders on DRM 2026 Subprojects	Identification of impacts, benefits, and concerns Risk identification and mitigation planning Disclosure of responses and mitigation measures

Key Issues Raised During Consultations

Positive Perceptions and Expected Benefits

Stakeholders across all consultation levels expressed strong support for the subprojects, citing recurrent flooding and associated losses. Expected benefits included:

- Reduced flood risk to homesteads, farmlands, and trading centres
- Improved drainage and floodwater management
- Enhanced access through rehabilitation of roads and dikes
- Protection of public and private infrastructure
- Employment opportunities for local communities
- Improved safety and long-term resilience

Concerns and Potential Adverse Impacts

Stakeholders also raised concerns regarding potential negative impacts, including:

- Dust and noise during construction
- Soil erosion and changes to natural water flow
- Increased traffic and accident risks
- Occupational health and safety of workers
- Safety of vulnerable groups near construction sites
- Spread of communicable diseases
- Safety risks associated with borrow pits
- Long-term operation and maintenance requirements

Integration of Stakeholder Feedback into the G-ESMP

In accordance with ESS10, stakeholder feedback was reviewed and integrated into the project design and G-ESMP mitigation measures. Key commitments include:

- Implementation of dust suppression and noise control measures
- Construction of drainage facilities to manage erosion and runoff
- Traffic management and community safety measures
- Provision of occupational health and safety training and PPE
- Priority employment for local community members
- Awareness campaigns on communicable diseases and SEA/GBV risks
- Borrow pit fencing, management, and rehabilitation
- Continuous engagement through the Stakeholder Engagement Plan (SEP)

Government authorities confirmed that land required for the subprojects is government-owned and will be voluntarily allocated for public interest purposes, consistent with ESMF principles.

Information Disclosure

Information disclosure has been undertaken in line with ESS10 requirements. Key project information, including subproject scope, potential impacts, and mitigation measures, was disclosed during consultations using appropriate and accessible communication channels.

Disclosure will continue throughout project implementation through community meetings, local leadership structures, and public notices, as appropriate.

A copy of this G-ESMP will be available for public access at the IOM Field Offices, County HQs and State Ministry of Local Government offices, IOM Juba office, PMU office and on the website of the Ministry of Finance and Planning . Where deemed essential, public notice will be made in the local daily inviting feedback from any affected and interested parties.

8.9 Ongoing Stakeholder Engagement and Grievance Redress

Stakeholder engagement is an ongoing process that will continue throughout construction and operation phases. Engagement activities will be implemented in accordance with the Stakeholder Engagement Plan (SEP).

A project-level Grievance Redress Mechanism (GRM) has been established to enable stakeholders to raise concerns, provide feedback, or lodge complaints at any stage of the project. Information on the GRM was disclosed during consultations. Flyers and posters will be given out in the local areas, giving information about related impacts management including GRM mechanism, Incident Reporting and PSEA/H pathways.

Summary of Stakeholder consultation

REF.	STAKEHOLDER GROUPS	ISSUES/TOPIC	STAKEHOLDER COMMENTS	IOM'S RESPONSE AND COMMENTS
1.	Government Institutions, Ministries, Departments and Agencies	Sub-project Scope	All government institutions are positive and express the need for the subprojects to be implemented.	ECRP II supports the views of the Government institutions, ministries, departments and agencies regarding implementation of the infrastructures.
		Positive impacts	Protection of homesteads, farmlands, and trading centres from floods.	
		Negative impacts	Dust and noise during construction. Risks of soil erosion. Lack of access by communities	
		Proposed mitigation and enhancement measures	Sprinkling water along dusty grounds. Construction of drainage channels. Use of PPEs such as ear plugs. Opening of a 2.5km access road	
2.	Sub-project affected parties	Sub-project Scope	Project affected persons such as farmers, traders, community members have all shown much interest in the dyke rehabilitation to help them against floods.	ECRP II supports the ideas prioritized by the communities and will continue with the implementation of the sub-projects based on the community priorities.
		Positive impacts	Improved road access for people in the areas. Improved security of the area.	
		Negative impacts	Noise pollution.	
		Proposed mitigation and enhancement measures	Sensitization of the communities. Limiting access to the active sites using warning tapes and barricades.	
3.	Vulnerable Groups	Sub-project Scope	Vulnerable groups like children, people with disabilities, mothers	ECRP II ensures that there is inclusive participation in terms of

REF.	STAKEHOLDER GROUPS	ISSUES/TOPIC	STAKEHOLDER COMMENTS	IOM'S RESPONSE AND COMMENTS
			all expressed the importance of the subproject to their respective areas.	the ESS-Stakeholders engagement and all voices of the beneficiaries are considered.
		Positive impacts	Inclusion in the sub-project. Improved security of property.	
		Negative impacts	Exposure to dust. Noise pollution.	
		Proposed mitigation and enhancement measures	Sprinkling water in key areas of focus. Reduced community exposure to the active sites. Sensitization of vulnerable people on the sub-project.	
4.	Other Interested Parties	Sub-project Scope	Parties such as NGOs, UN agencies etc are interested in the upgrading of dikes and rehabilitation of roads in Pibor.	ECRP II is transparent to all stakeholders including interested parties to ensure smooth work and no obstacles from any party regarding the sub-projects. While the provision of PPE remains key. ECRP II emphasised the adoption of the hierarchy of controls in the management of risks
		Positive impacts	Environmental protection. Increased access to different areas in the region.	
		Negative impacts	Noise pollution. Dust pollution.	
		Proposed mitigation and enhancement measures	Use of PPEs such as earmuffs during work. Sprinkling of water along dusty surfaces.	

Conclusion

The stakeholder consultation process undertaken for the DRM subprojects complies with the requirements of ESS10 and the project ESMF. Consultations were timely, inclusive, and meaningful, and stakeholder inputs have directly informed subproject design, environmental and social risk mitigation measures, and implementation arrangements. This has strengthened the environmental and social sustainability of the subprojects and enhanced stakeholder ownership.

Figure 11. Photo grid showing stakeholder engagement in Pibor, Greater Pibor Administrative Area discussing the DRM IFMM Subprojects

Figure 12.Engagement of religious groups discussing the prioritised DRM 2026 Subprojects

Figure 13. Engagement of religious groups discussing the prioritised DRM 2026 Subprojects

Figure 14. Engagement of stakeholders in GPAA at State level discussing the DRM 2026 Subprojects

Figure 16. Engagement of stakeholders in GPAA at State level discussing the DRM 2026 Subprojects

Figure 15. Engagement of stakeholders in GPAA at State level discussing the DRM 2026 Subprojects

Figure 17. Engagement of the PDRMC members discussing the DRM 2026 Subprojects

CHAPTER 5

GRIEVANCE REDRESS MECHANISM

The ECRP II project is guided by the WB ESF requirements, and the management of grievances is a key component of the ESF requirements. Thus, in a bid to provide for the sound management of environmental and social risks, the Grievance Redress Mechanism (GRM) guidelines have been developed for the management of complaints and grievances under the ECRP II project. These guidelines apply during the implementation of the proposed subprojects. The GRM system seeks to provide a suitable, centralized system for the reception, recording, investigation, management and closure of GRM cases for both community and all project workers.

While the GRM system integrates community and workers GRM, the system distinctly allocates the workers GRM to the contractor while the community GRM is managed as a direct IOM GRM system. Though the workers are expected to put their GRM reports through the employer GRM protocols, the IOM GRM system will accept reports from all sources and process accordingly in line with the "No Wrong Door" approach. Where appropriate, IOM will redirect the workers' GRM report to the employer, but where there is indication of conflict of interest on employer side, IOM may handle the matter directly in accordance with contract provisions and the labour laws.

The GRM is based on six core principles namely:

1. **Fairness**: Grievances are treated confidentially, assessed impartially, and handled transparently.
2. **Objectivity**: The GRM incorporates all interested parties to guarantee an objective focused on the grievance and not the complainant. GRM officers who include the Safeguards Specialist, Social Mobilizer/Community Outreach Assistant and Health and Safety officers will be trained by the Project team and will have adequate means and mandate to document grievances (e.g. through interview of witnesses and access to records).
3. **Simplicity and accessibility**: Procedures to file grievances and seek action are simple enough that PAPs can easily understand them. PAPs have a range of contact options including, at a minimum, a hotline telephone number. The GRM is accessible to a wide range of stakeholders, irrespective of their level of education or income. The GRM processes have been made simple and user-friendly to avoid creating confusion or anxiety to potential users.
4. **Responsiveness and efficiency**: The GRM are designed to be responsive to the needs of all complainants. Accordingly, staff handling grievances are trained to take effective action, and respond quickly to grievances and suggestions.
5. **Speed and proportionality:** All grievances, simple or complex, are addressed and resolved as quickly as possible. The action taken is swift, decisive, and constructive.

6. **Participation and social inclusion:** A wide range of PAPs, including community members, members of vulnerable groups, project implementers, civil society, and the media, are encouraged to bring grievances and comments to the attention of the Project staff. Special
attention is given to ensure that marginalized or vulnerable groups, including those with special needs, can access the GRM.

7. Anonymity. Where the reporting person prefers to remain anonymous, the GRM system provides for such anonymity to both community and workers.

5.1. Categorization of Grievances

Grievances have been categorized as summarized in Table 4**. Grievances outside the ECRP II mandate will be referred to the appropriate statutory institutions**.

Table 4. Categories of Grievance

Categories of Grievances
1. Access to Basic information
- Limited access to basic information on the sub-project itself and the GRM processes
- Correction and deletion of untrue or misleading information that affects the PAP
2. Ethics and conduct
- Implementing Partner staff may not exercise appropriate work ethics, like taking bribes from any relevant stakeholders. - Violation and breach of codes of ethics by staff of Implementing Partners and contractors
3. Corruption and economic crimes
- Unethical conduct
4. Labour and working conditions
- Termination/summary dismissal/wrongful termination
- Breach of employment contract terms
- Conflicts with trade unions
- Work injury
- Discrimination
- Remuneration
- Suspension
- Waiver of claims
5.Land Use Related Grievances

Physical and Economic displacement, Valuation, Entitlement and Eligibility, Compensation Payment, Relocation Assistance, Resettlement assistance etc.
6. Occupational Health and Safety (OHS)
Violation of occupational health and safety measures and standards laid out in the ESMF, G-ESMPs
7. Sexual Exploitation and Abuse (SEA/SH) / Sexual Harassment (SH)
- Sexual exploitation and abuse committed by sub-project workers and staff of an IP associated with the sub-project (including any worker employed by sub-contractors) against a sub-project beneficiary.
- SH committed by any sub-project worker (including any worker employed by sub-contractors) against another sub-project worker
8. Other
- All other sub-project related grievances that are not captured above but relate directly to the sub-project for example land disputes in relation to the sub-project.

5.2 Means of Filing Grievance

There are four distinct means that must be made available at the sub-project locality for people to file a grievance:

- **A Help Desk**: This will be set up by the implementing partner during the implementation of physical sub-project activities in an area and will be manned by a social mobilizer.[2] The help desk can be open at hours decided upon by the IP, with a minimum a half working day (4hrs) and the help desk must be set up at a public space easily accessible and in close proximity to the sub-project activities. It should be manned by IP staff, especially its community sub-project facilitators, in close coordination with local authorities. At the help desk, PAPs can inquire about information regarding sub-project activities, or they can file a grievance directly with the person manning the desk. Grievances can be filed in writing or verbally at the help desk. The staff manning the desk will register the grievance in a GRM log. The social mobilizers will undergo an intensive training program before being deployed to operate as desk minders. The staff will be trained in a) the registration of a grievance; b) the interaction with complainants; c) appropriate handling of SEA/SH related grievances; and d) workers' GRM. For the purposes of this subproject, the help desk shall be set up at all community meetings and gatherings to facilitate the capturing of grievances. The GRM focal persons shall take the lead in ensuring the capturing of GRM cases.

- **Community Focal Persons**: Each Boma has a community selected focal person in the local community – for the GRM during sub-project activities: the 'Boma or Payam GRM focal point'. Community Focal

[2] The help desk must be budgeted by the IP, the manning of the help desk will depend on the nature of the activity

Persons (volunteers) elected by the community available in each sub-project site will be required to accept formal grievances and ensure that avenues for lodging grievances are accessible to the public and all PAPs. This volunteer is elected by the Boma Development Committee (BDC) members. The first point of contact for all potential grievances from community members are these elected community focal persons. They will be required to accept formal grievances; or they can point out the phone number (+211927928043) that can be used, the help desk (when relevant/operational) or suggestion boxes and the Social Mobiliser who will further accept and register the grievance in a log. Each relevant volunteer will be trained by the IP or PMU in a) the registration of a grievance; b) the interaction with complainants; c) appropriate responses to SEA/SH related grievances; and d) workers' GRM. The volunteer will be trained by the PMU and will be in direct contact with the IP and Social Mobiliser for any assistance.

- **A Suggestion Box**: This must be installed at the nearest Boma administrative office of the sub-project site. Suggestion boxes provide a more anonymous way of filing a grievance or for providing feedback. Grievances or feedback submitted to the suggestion box must be expressed in writing. Boxes are clearly marked as ***ERCP II - related*** feedback and grievance mechanisms. They will also clearly indicate when the box will be opened, and grievances addressed and recorded. A signature sheet for when this is done will also be at the box for accountability purposes. The Social Mobilizer for the respective Greater Pibor Administrative Area holds the key to the suggestion boxes who will be stationed one at the Boma and the other one at Payam level. ECRP II will procure the suggestion boxes and will be responsible for the set-up of the boxes in the counties where they have infrastructure sub-projects. The contents of the boxes will be emptied on a weekly basis by the Social Mobilizer or assigned person and then transferred to the Safeguards Specialist in charge of the GRM. However, use of suggestion boxes comes with challenges of ability to write either in local language or English; and centralizing the box at the Greater Pibor Administrative Area may disadvantage those people in Payams and Bomas. Therefore, this should be encouraged where it's practically possible. Three suggestion boxes are installed in Pibor county (Verteth, Pibor and Lekaungole Payams). They are located in safe spaces in the Payam headquarters

5.3 Case Processing Schedule

The management of grievances will follow a systematic process as presented in Table 5

Table 5. GRM Case processing guide

Type of Case	Actions Required	Response Required	No. of days for action
GBV/SEA/SH		Refer to step 4 and Annex 3	
Straight-forward cases with little anticipated complications e.g. (holding long meetings exceeding agreed times)	Minimal checks and consultations	Acknowledge receipt of the grievance, detail follow-up steps and set timelines (number of days) for follow-up activities: verify, investigate, if needs be, and communicate outcomes and next steps based on outcomes	1-2 days
Cases that require some minimal processes e.g. (delayed payment of a contractor)	Delete misleading information, collect information, analyse existing information, prepare communication materials to disclose delayed information, clarify existing information, and correct misleading information	Acknowledge reception of the grievance, detail the steps to follow, and provide the appropriate practical timelines	7-14 days
Cases that require investigation (land ownership dispute)	Access and review of relevant documentation (reports, policy documentation), field-based fact findings missions (visits and interviews), analysis and preparation of reports, consultative sessions to rectify or adjust the implementation approaches	Acknowledge reception of the grievance, providefollow-up steps and outline steps that will be followed to provide a comprehensive response	1 - 2 months
Cases that require escalation to higher ECRP II implementation level e.g. (Fraud)	Transfer case to relevant higher level (e.g. state-level or national IOM or to PMU)	Acknowledge reception of the grievance, provide the need for escalation of the grievance to the next project implementation level, and set timelines for a comprehensive response	1-4 Months

Type of Case	Actions Required	Response Required	No. of days for action
	Transfer case to relevant institution (National Police Service, WB)	Acknowledge reception of the grievance, provide the need for referral of the grievance to an appropriate institution, and set timelines for a comprehensive response on referral progress	6 months and more

Gender and GBV

Gender inequalities in post-flood environments often intensify pre-existing rigid gender roles and inequalities in Pibor, contributing to an increased risk of GBV. Communities may (re-)adopt more conservative or customary patriarchal practices as a coping mechanism. This can further entrench gender-based inequalities and increase the risk of GBV. Patriarchal norms governing the roles of women and girls may lead to them being excluded from decision-making around preparations for flooding and not being included in warning messages. These gendered roles may also make women less likely to be able to swim or climb trees, which is also a cause of increased mortality rates for women in floods.

Women and girls in Pibor still have unequal access to resources that would enable them to prepare for floods or to respond to the aftermath, rendering them more vulnerable to sexual exploitation. Flooding, therefore, is a disaster that creates an environment where GBV is likely to increase. The manifestations of violence are contextual areas for each instance. However, there are patterns of how GBV has occurred in flooding disasters, particularly in Pibor. The Project will build GBV risk mitigations into preparedness activities for flood including increasing the availability of phone lines in general referral pathways easily accessible and GBV Capacity Building Trainings on areas related to GBV risk mitigation and early prevention mechanism. This will include women in the decision-making process of selecting subproject priorities that are sensitive.

PSEAH/SH

The management of PSEA/SH cases is done by independent parties who are not involved in the day to day running of the project. However, if there is a case or a suspected case of SEA/SH, it should be reported immediately to:

(a) the IOM protection focal person
(b) Submit an anonymous report through the we are allin.iom.int

(c) the Hotline +21191210000012 or +211 920111888

(d) E-mail psea-southsudan@un,org

The following enhancement measures for PSEA/SH provisions will be made in consultation with all stakeholders; an activity in the G-ESMP implementation has been uploaded for the Protection Unit to liaise with other stakeholders on the ground.

i. Integrating accessible, community-based, and survivor-cantered mechanisms.
ii. Incorporate locally accessible entry points such as trained community focal persons and linkages with trusted service providers, including health and protection actors, to enable safe and confidential reporting at the community level. A "no wrong door" approach will be adopted so that any disclosure—whether through project workers, community representatives, or the GRM—is treated with confidentiality and referred appropriately with the informed consent of the survivor.
iii. Explicitly emphasize survivor safety, confidentiality, and choice, ensuring that no action is taken without consent and that sensitive information is strictly protected.
iv. Allowing verbal, in-person reporting options and using local language awareness channels, recognizing the limitations of literacy, connectivity, and technology in Pibor.
v. Fully integrate the PSEA/SH framework into project implementation systems, including contractor obligations, mandatory Codes of Conduct, training of all workers, and clear referral and reporting pathways, to ensure accountability and effective prevention and response in line with ESS2 and ESS4.IOM will engage all applicable stakeholders and develop an updated referral pathway for both ECRP 2 Project and sub-project specific including the Pibor

At the time of development of this G-ESMP, the baseline referral pathway for Pibor was established to refer to Annex 9. The same pathway will be updated from time to time following the steps above.

5.3 GRM Case management Process

The process of managing grievances is summarised in Figure 18

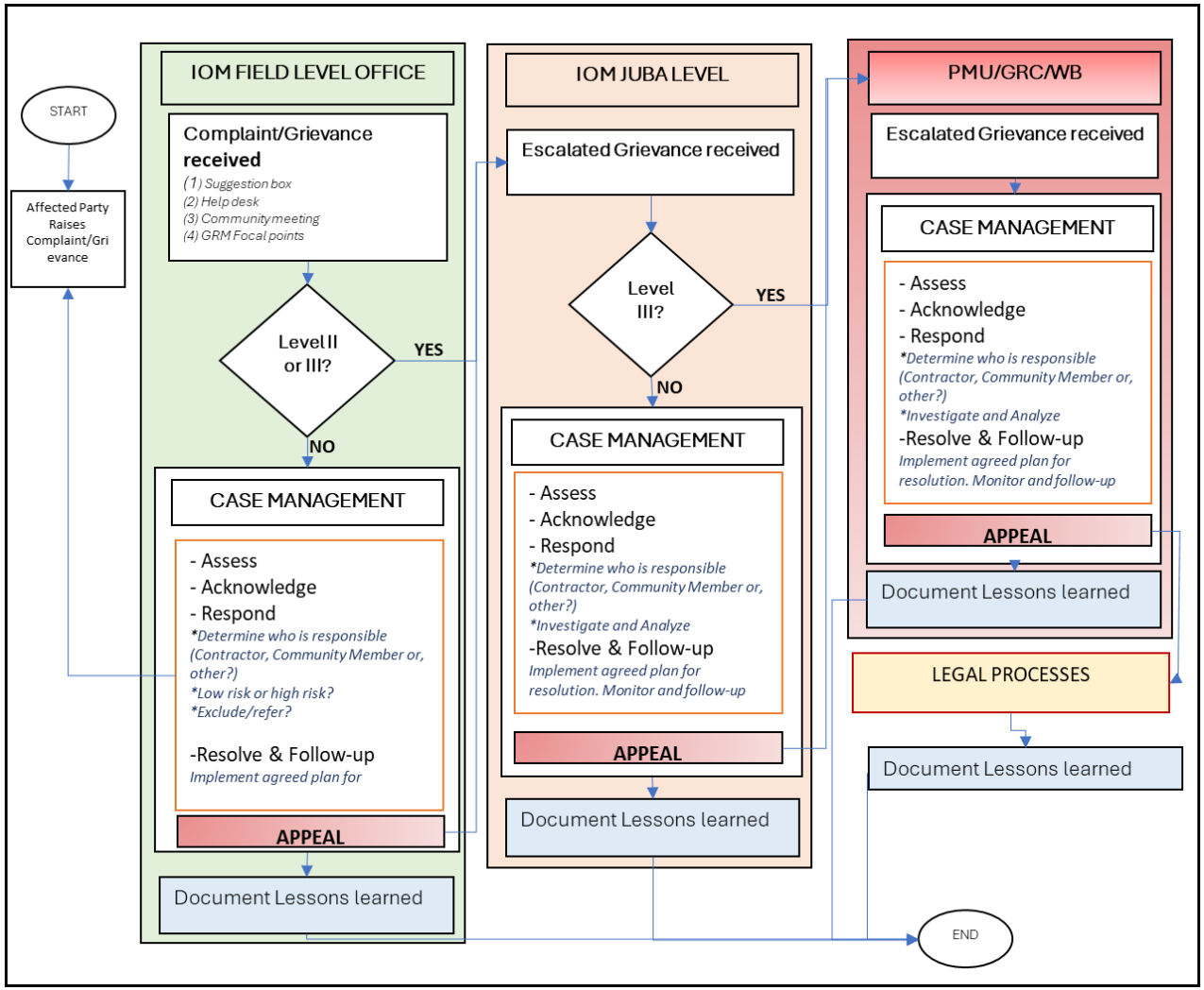


Figure 18: Overview of the case management process and escalation modalities

CHAPTER 6

ENVIRONMENTAL AND SOCIAL BASELINE

Flora and Fauna

Greater Pibor Administrative Area is in Greater Pibor Administrative Area. The Greater Pibor Administrative Area is largely covered by different forms of vegetation with more than half of the Greater Pibor Administrative Area being covered by herbaceous vegetation while other parts are covered with herbaceous wetlands. The herbaceous wetlands proliferate due to the perennial submersion of most areas close to the river. There are relatively small areas that are covered by open forests in the northern eastern and eastern parts of the Greater Pibor Administrative Area. Even though Greater Pibor Administrative Area is dominated by herbaceous vegetation, open forests, Typha grass, reeds, and numerous other grasses, the earmarked sub-projects are targeting the built up Pibor town. As such, the sub-projects do not traverse any sensitive ecosystem and protected ecosystem around Pibor Greater Pibor Administrative Area. The land cover map below provides the spatial distribution of landcover types in Pibor Greater Pibor Administrative Area.

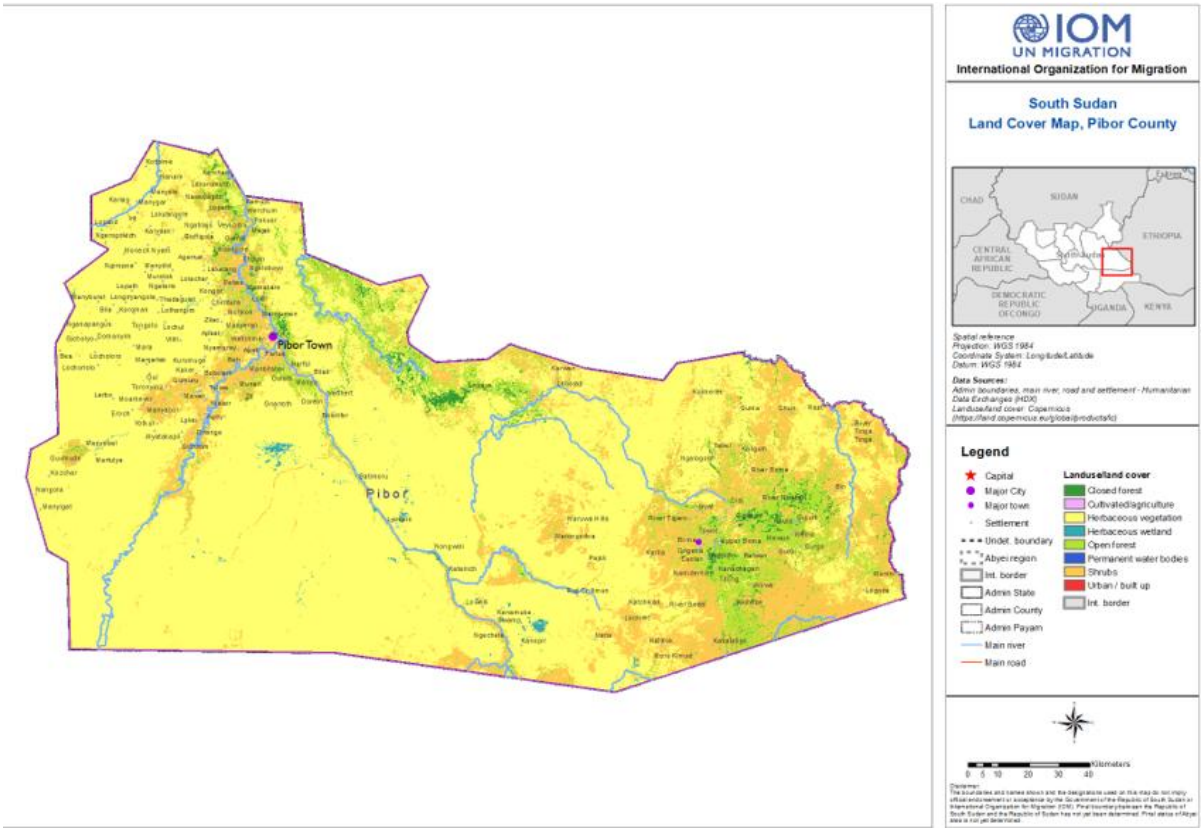


Figure 19. Land Cover map

Geology

The predominant geological formations in the Greater Pibor Administrative Area are the unconsolidated recent alluvial sediments and the unconsolidated sediments of the Umm Ruwaba Formation as indicated in figure 11 below. The far east parts of the Greater Pibor Administrative Area are covered with the undifferentiated volcanic rocks.

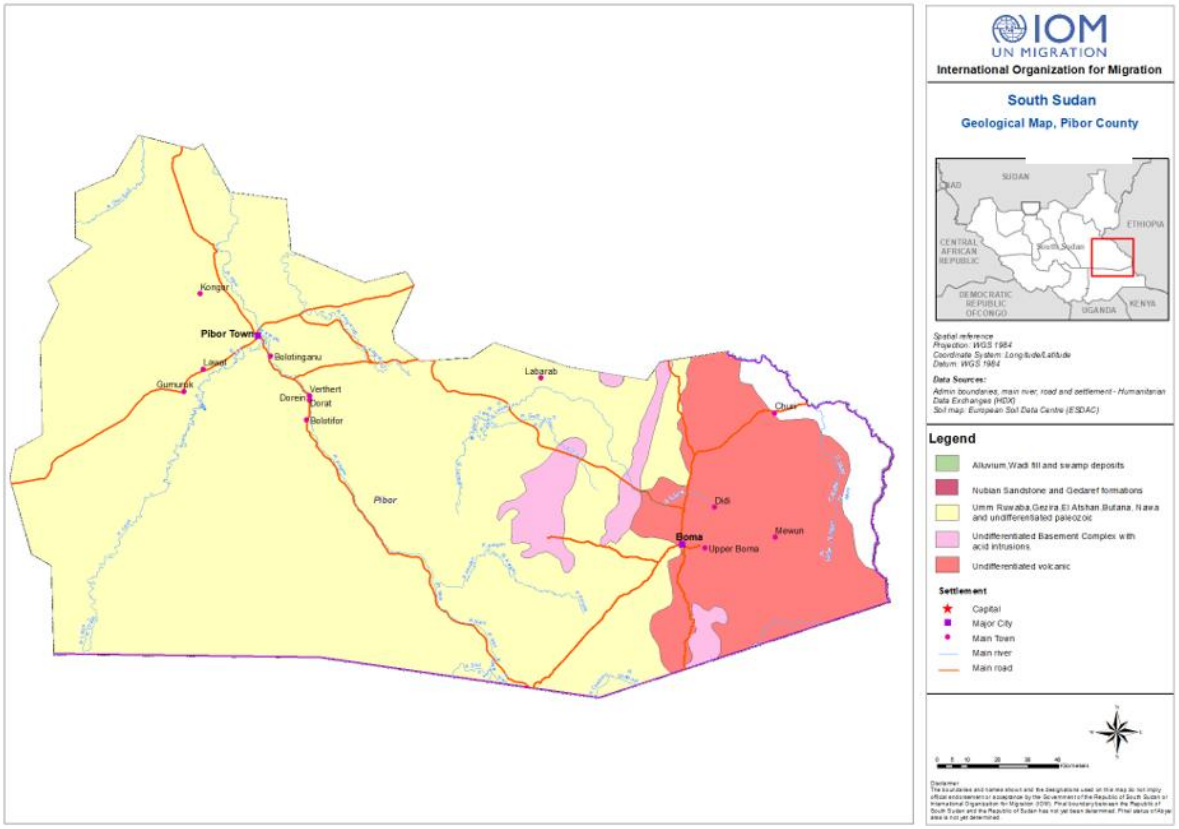


Figure 20. Geological Map

Soils

The major soil types in Pibor Greater Pibor Administrative Area are the Vertisols, Gleysols and the Nitosols. The map below shows the distribution of soil types in Pibor Greater Pibor Administrative Area. The soils in the specific project areas are predominantly Vertisols.

Vertisols:- are blending heavy clay soils that contain high proportions of expansive clay minerals such as smectites. They exhibit high swell-shrink potential, leading to the formation of deep cracks that open and close periodically with soil moisture variations, and wedge-shaped aggregates and/or slickensides at depth. Vertisols are a group of heavy clayey soils, with a massive blocky structure due to the presence of cracks when dry and a dark colour. They usually contain 30–95% clay fraction.

Gleysols:- Gleysolic soils are soils whose morphology is created by the effects of water saturation on soil processes in mineral soil horizons. The g (for gleyed) suffix is applied both to horizons with reddish or grayish mottling present and to horizons with dull, blue grey colours.

Nitosols: Nitosols are a type of soil found in wet tropical and subtropical regions, originating from more-basic rocks and characterized by shiny, nut-like structural elements and high clay content.

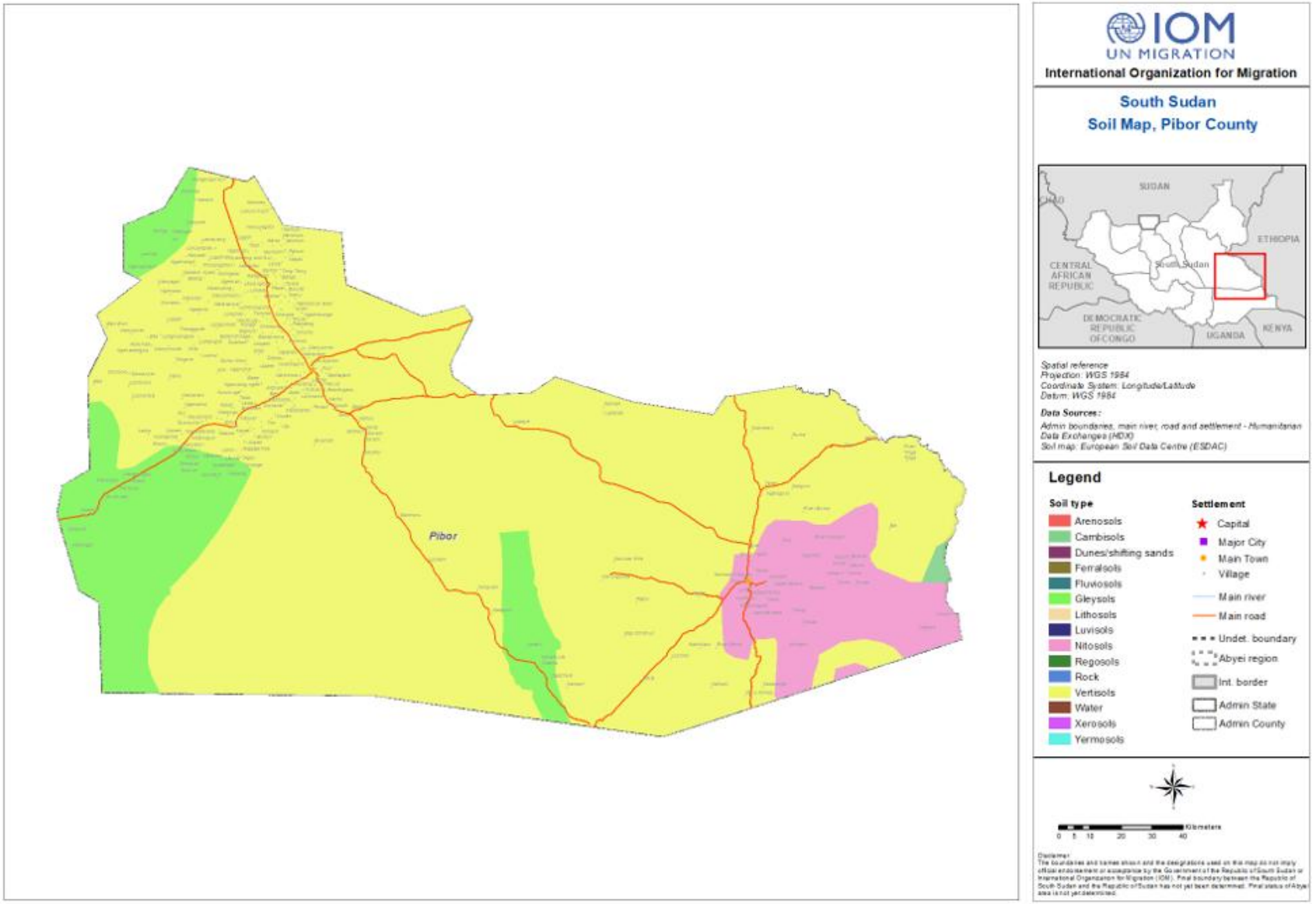


Figure 21. Soil Map

Hydrology

The riverine system in Pibor Greater Pibor Administrative Area is mainly dominated by the Pibor river which formed by the confluence of several smaller streams. The river originates from Pibor then flows north, receiving water from the Akobo River near Akobo. Eventually, after receiving water from the Gilo and the Bela Rivers, it joins the Baro River to form the Sobat River. The map below shows the hydrology of Pibor Greater Pibor Administrative Area showing the major water bodies in the Greater Pibor Administrative Area. Pibor Greater Pibor Administration Area faces a severe hydrological and drainage crisis. The region is dominated by the seasonal overflow of the Pibor River, with natural drainage overwhelmed by years of catastrophic, climate-induced flooding. This has left thousands displaced, contaminated local boreholes, and severely damaged basic infrastructure. **Current Status and Drainage Challenges**

- **Permanent Inundation:** Because the Greater Pibor Administrative Area sits in a naturally low-lying floodplain, the natural drainage system is highly constrained. Successive years of exceptionally high rainfall have left many low-lying payams (districts) permanently underwater.
- **Impaired Infrastructure:** Drainage in and around Pibor Town is severely compromised. During the wet season, the overflow of the river breaches natural and artificial embankments (dykes), submerging homes, farmlands, and airstrips.

This subproject endeavours to alleviate some of the challenges related to flooding and poor drainage in Pibor Town. It is anticipated that the Hydrology and Flood Model conducted by ARUP for the Pibor Greater Pibor Administration Area will go a long way to avoid flooding risks in non-project areas, which may raise the potential for conflict amongst communities if that happens.

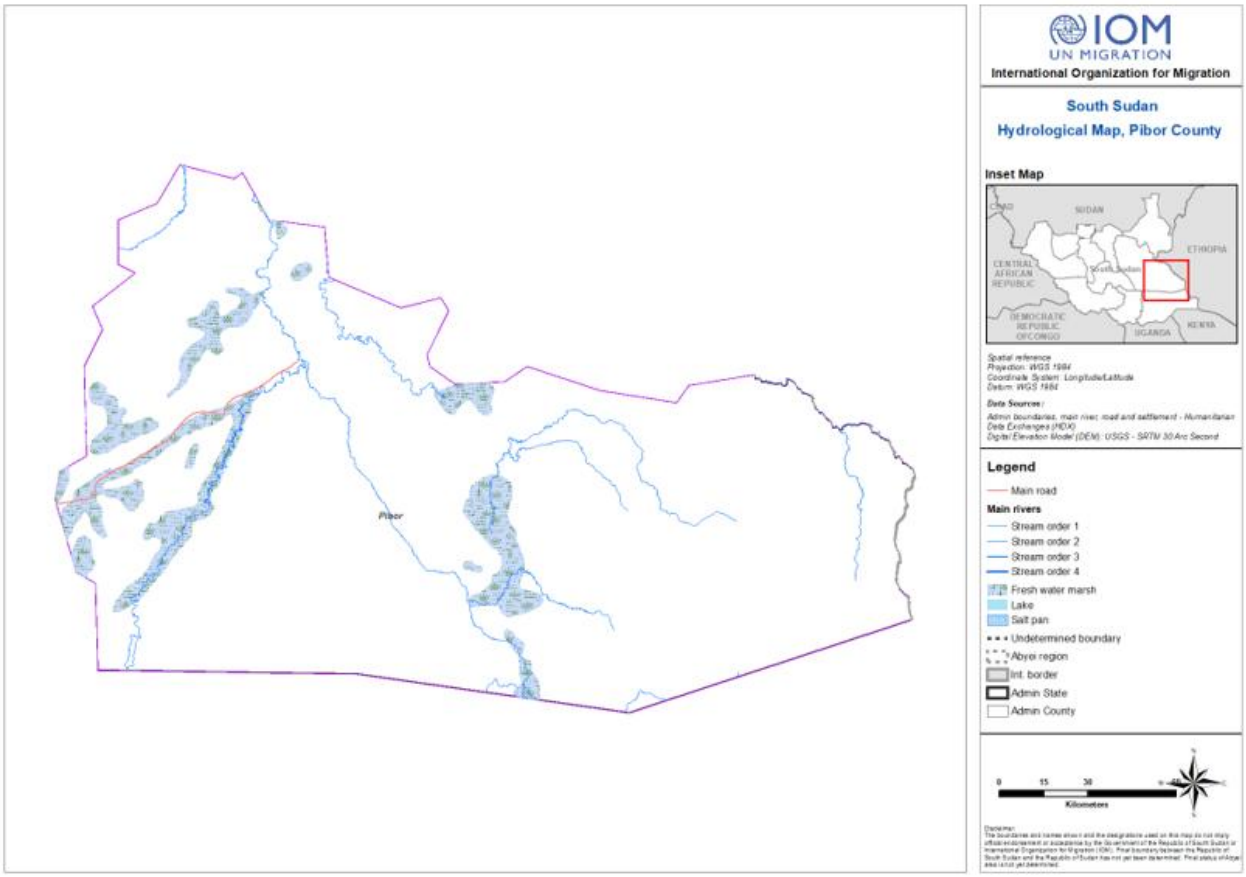


Figure 22. The riverine system in South Sudan

Socio-Economic Environment

Administrative Division and Demography

Located in Greater Pibor Administrative Area, Pibor Greater Pibor Administrative Area is in the Eastern part of South Sudan and lies approximately 342 kilometres by road northeast of the capital, Juba. It borders the Eastern Equatoria state to the South and Ethiopia to the East. Pibor Greater Pibor Administrative Area consists of eight Payams: Pibor, Lekuangole, Gumruk and Verteth Payams are in the Western part, while Boma, Kizingora, Marow and Miwono Payams are in the Eastern part. The Greater Pibor Administrative Area's administrative centre is in Pibor town (Pibor Payam). The lowlands of the Lotilla plain characterize the north-western part of the Greater Pibor Administrative Area, while the highlands and hills of the Boma plateau comprise the south-eastern part of the Greater Pibor Administrative Area.

Pibor Greater Pibor Administrative Area is inhabited by the Murle, the Jie and a small proportion of the Anyuak. The main spoken language is Murle. Unlike the other nomadic tribes or ethnic groups in South Sudan, the Murle graze their animals mainly within the Greater Pibor Administrative Area. This is due to the long history of conflicts with the neighbouring communities. Most communities in the Greater Pibor Administrative Area practice seasonal migration due to water shortages for cattle and domestic consumption during the dry season, between January and April. The rainy season in Pibor lasts from May to December. Most areas of Pibor are accessible by road only during the dry season as roads are flooded during the rainy season. Floods are also a major contributor to displacement in the Western part of the Greater Pibor Administrative Area that is proximate to riverbanks.

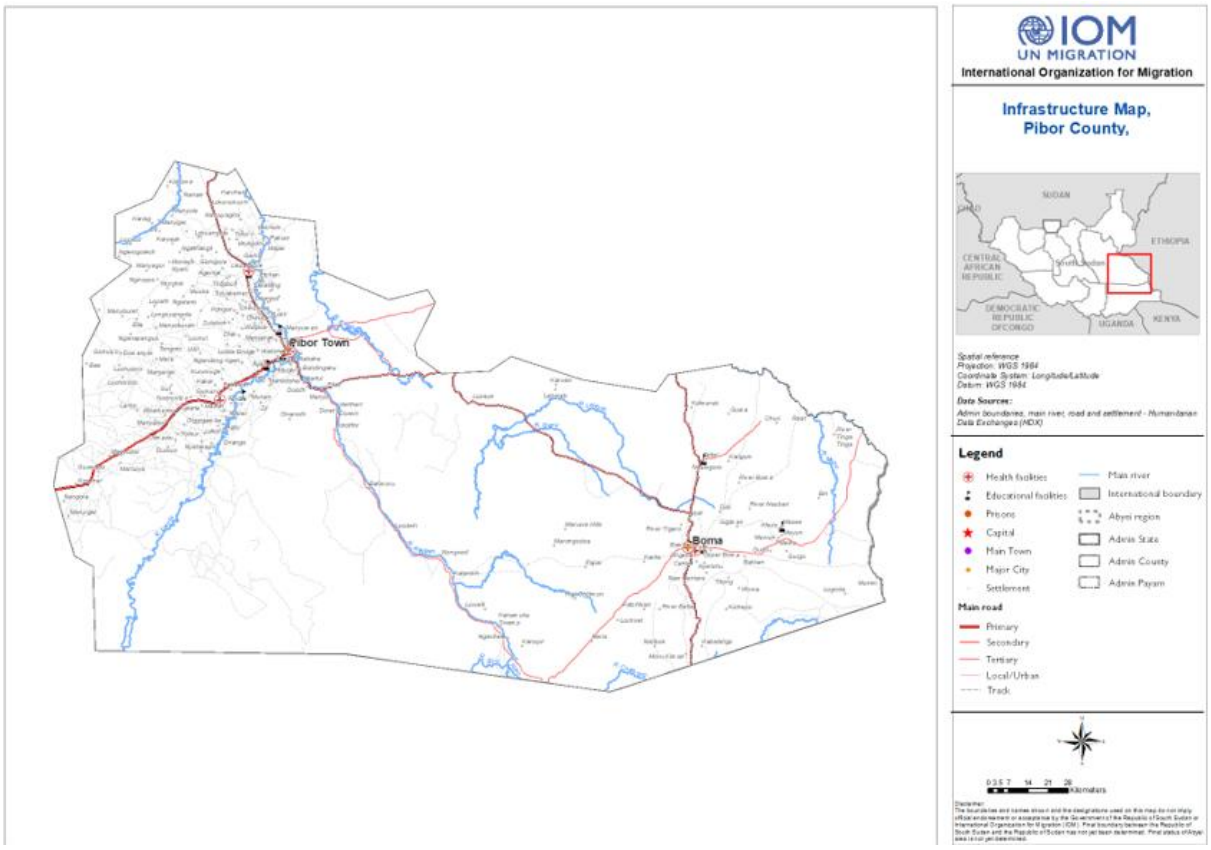


Figure 23: Greater Pibor administrative Area

Ethnicity

The largest ethnic group in the Greater Pibor Administrative Area is the Murle, whose social relations are based around a generational system. Membership of a Murle age-set traditionally comprises males born within a period of around two decades, though more recently new age-sets have tended to be established with a greater frequency than in the past (and comprise males born over a decade or less). Sub-divisions are also present within an age-set. Social relationships among age-sets often take precedence over familial ties and exert a strong influence upon political and economic relationships. As well as being sources of common identity, conflict management and unity, age-sets have also been associated with violent conflict, notably when members of an age-set break away from an age-set to form a new age-set, in a process that can be exploited by political or military elites in the community.

Infrastructure (Education, Health Facilities &Water and Sanitation Facilities)

Pibor Payam hosts the area's headquarters in Pibor Town. The extensive flooding since 2019 has had a significant impact on local infrastructure, including Pibor Town, and limited access to services including health, water and sanitation services.

Pibor Greater Pibor Administrative Area is home to two (2) Early Childhood Development centres, twenty-five (25) primary schools and one (1) secondary school (located in Pibor Payam).

Pibor Greater Pibor Administrative Area was reported to have twenty-six (26) health facilities including fourteen (14) functional health facilities, among them ten (10) PHCUs, two (2) PHCCs and two (2) hospitals in 2022. This means that there were an estimated 0.53 PHCUs per 15,000 people and 0.44 PHCCs per 50,000 people according to the WHO, which ranks Pibor as among the ten counties with the lowest ratios of PHCUs/person in South Sudan. Boma Hospital is reported to be moderately functional while the functionality of Pibor Greater Pibor Administrative Area Hospital is unreported.

According to OCHA's Humanitarian Needs Overview for 2023, there are currently over 203,000 people with humanitarian needs in Pibor Greater Pibor Administrative Area. This figure represents 89% of the estimated population of the Greater Pibor Administrative Area reported in the HNO.

Social Dynamics and Conflict Management

The conflict and social dynamics of the Greater Pibor Administrative Area (GPAA) in eastern South Sudan are defined by inter-communal disputes, competition over resources, and political marginalization. These factors drive cyclic violence between the local Murle people and neighbouring groups like the Lou Nuer and Dinka Bor.

Key Conflict Drivers are highlighted below and their interaction with the subproject will be assessed in Chapter 7

- **Cattle Raiding & Wealth Accumulation:** Pastoralist traditions use cattle for wealth, prestige, and paying bride wealth. Rising bride prices and economic hardship have intensified the raiding of herds, which has evolved from a traditional practice into organized militarized violence. The sub project activities will offer employment opportunities to the local communities, making cash an alternative means for the bride price and preserving wealth, thereby reducing the propensity for cattle raiding amongst communities.

- **Abductions:** Cycles of revenge often feature the abduction of women and children during raids. The abducted children are sometimes assimilated into rival communities, leading to deep inter-generational trauma and further cycles of retaliatory violence.
- **Resource Scarcity & Climate Change:** Severe flooding and prolonged dry seasons have displaced communities and restricted grazing areas, forcing pastoralist groups into close, contested proximity. The subproject is expected to alleviate the impacts of flooding and thereby reduce the possibility of land use conflicts.
- **Political & Economic Marginalization:** The Murle consider themselves a minority group who have historically faced political and economic exclusion, contributing to a defensive and at-times adversarial relationship with the national government and neighbouring tribes. The major ethnic group within the project area are the Murle and the project benefits to the largely Murle community attenuates the marginalization perception as the project is proof of development activities targeting all communities without discrimination.
- **Age-Set Militias:** Social structures in Pibor are heavily organized by "age sets" (groups of young men initiated into adulthood together). Armed youth age sets often operate as de facto community defence forces and are the primary actors in cross-border raids and inter-ethnic conflicts. The potential for employment creation offers the youths alternative sources of livelihoods and they will start to appreciate their role in peace and unity.
- **Generational Fractures:** Younger age sets, who have grown up in a highly militarized and violent environment, sometimes reject the authority of traditional elders and chiefs, making peace agreements more difficult to sustain.
- **Gender-Based Violence:** Women and children bear the most severe impacts of the conflict. Sexual violence and exploitation are frequently used as weapons of control and intimidation during clashes.

Livelihoods

Pibor encompasses two livelihood zones: the south-eastern semi-arid and the pastoral zone, as well as the maize, sorghum, fishing and natural resources zone (FEWSNET 2018). According to FAO, an estimated 40% of the population of Pibor households engaged in farming, with a gross cereal yield of 0.85 tonnes per hectare in 2022, with yields for the Pibor Administrative Area (comprising both Pochalla Greater Pibor Administrative Area and Pibor Greater Pibor Administrative Area) as a whole also reporting 0.85 tonnes per hectare in 2023 (FAO/WFP 2023). Pastoralism and agriculture are the main sources of livelihoods for communities in Pibor Greater Pibor Administrative Area. In the lowlands of Lotilla plain to the northwest, communities primarily engage in pastoralism. In addition to cattle, they rear goats, sheep and chicken. Livelihoods are supplemented by agriculture, including growing sorghum, maize and pumpkin. On the Boma plateau to the southeast, communities are primarily agricultural, growing sorghum, maize, sweet potatoes, okra and groundnuts. In addition, communities throughout Pibor fish during the rainy season and collect wild fruits during the lean months. Climatic conditions regularly affect both livelihood activities in Pibor Greater Pibor Administrative Area, given frequent floods and droughts. The Greater Pibor Administrative Area boasts a number of gold and other mines around Boma and potential oil reserves. Reaping the economic potential of mineral, livestock, and wildlife resources in Pibor, however, continues to face significant political, military, economic, legal and logistical obstacles.

CHAPTER 7

ES IMPACT ANALYSIS, ASSESSMENT, MITIGATION EVALUATION AND MANAGEMENT

7.1 INTRODUCTION

This chapter analyses and evaluates impacts associated with the subproject. The chapter is a continuation of the work that was initiated in the ES Screening phase of this assessment and will not necessarily endeavour to identify new ES impact. The ES screening recommended "Further Assessment" and this is what this chapter together with other chapters seek to address. The further assessment will comprise the following segments.

- Analysis of identified ES impacts
- Assessment of impact significance
- Evaluation of effectiveness of mitigation and forecast the residual impact

This chapter should be read with the ES Management and Monitoring table because the same mitigation measures are presented in a management framework in chapter 8.

The chapter considers the importance of aligning ES impact assessment with the project life cycle, as such, impact analysis showcases this important aspect under the analytical parameter "Timing". This parameter will be maintained right into the ES Management and Monitoring framework in chapter 8.

7.2 Impact Analysis

Following the identification of the various potential ES impacts, the impact analysis framework for sub project looks at the impacts under the following analysis parameters;

1. **Nature of the impact:** This dimension reveals if the impact is direct or indirect, cumulative or instantaneous and whether the impact is positive or negative.
2. **Magnitude:** This parameter discusses the quantitative intensity of the impact at the impact area, whether it is low, moderate or high intensity.
3. **Extent:** The extent gives the spatial distribution of the impact.

4. **Timing:** This shows when the impact would occur in terms of the project life cycle (planning, implementation/construction, operation or decommissioning phase)
5. **Duration:** The parameter reveals whether the impact is short term or long term, intermittent or continuous.
6. **Permanence:** This shows whether the impact is reversible or it is irreversible.
7. **Likelihood:** This tells us the probability of the impact occurring.
8. **Importance:** This tells the value that the affected stakeholders put on the aspect affected.

The table below shows the impact analysis for the subproject

Table 7.1 Impact Analysis for Pibor Dyke and Drainage Subproject Activities

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
Positive Impacts across all project phases (Planning, Construction, Operation, Decommissioning)				
1. Employment creation. IOM project staff and Contractor employees.	Huge direct income benefit to workers, their families and their communities.	Short term since project life is short. The benefit accrues in the planning, construction and operational phases.	Temporary employment with irreversible benefits.	Definite and very important considering the importance of income to beneficiaries.
2. Employment creation offers alternative sources of livelihoods to "age-sets" youths who are believed to be involved in inter - tribal cattle raids and conflicts, thereby reducing the potential for inter-tribal conflict.	Huge and indirect benefit to youths, families and communities at large.	Short term as project life is short lived. Construction phase.	Temporary and reversible when the source of alternative income dries.	Likely and very important considering the level of unemployment is high and marriage, which is believed to be the end use of the spoils in cattle raids is highly valued amongst the communities.
3. Reduced conflict reduces risk of abductions of children and women.	Great direct impact to women, children, families and community at large.	Immediate benefit that occurs during the construction and operation phase.	Long term protection to vulnerable groups but can be reversed if conflict resumes.	Definite and very important considering how conflicts are known to affect women and children.
4. Boost local micro economic activities. Informal traders of food stuff, accommodation services and local construction materials.	Small and direct impact to few traders as most items are procured from Juba.	Short term during planning and construction phases.	Temporary as project life is short-lived.	Definite and very important to host communities.
5. Human habitation and flood disaster reduction.	Huge impact and community wide.	Long term direct benefits occur in	Permanent solution.	Definitely, very important as the reduction in flood risk reduces flood induced migration.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
		the operational phase.		
6. Reduced flood risk reduces environmental drivers of community conflict as communities will now stay in reclaimed areas more permanently.	Vast and direct benefit to communities.	Long term benefits, continuous in operational phase.	Permanent contribution that can be reversed if infrastructure fails to deliver.	Definitely, very important as inter- tribal conflicts cost lives and the economy at large.
7. Improved public health. Reduced mosquito breeding problem, flooding of water, sanitation and public health facilities.	Great impact on the whole community's public health status.	Long term, continuous in operation phase.	Permanent solution since the dykes and drainage infrastructure is designed for permanence.	Definite and very important as previous floods resulted in contamination of water sources among other impacts.
8. Enhance mobility and access to key centres within the local area. Inclusion of footpaths and docking points. Access to education and commercial facilities.	Huge direct benefit for the whole community.	Long term and continuous in operational phase	Permanent since the dykes and drainage infrastructure is designed for resilience.	Definite and very important considering pedestrians, school children, women, old people, fishermen and cattle herds need safe passage from one side of the dyke to the other.
9. Economics and Food Security. Improved drainage will reduce waterlogging and resultantly improves pastures and soil quality for agricultural activities, i.e. livestock health and crop production	Huge impact for local farmers and community at large.	Long term impact in the operational phase.	Permanent solution to community socio-economic standing.	Definite and very important considering the precedent effectiveness of dykes in previously affected communities allow them to regain food security.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
10. Preservation of cultural heritage. More permanent settlements allow communities to preserve family bonds and cultural heritage.	Great impact on family bonds and cultural values.	Long term impact, continuous in the operation phase.	Permanent and dynamic with time.	Certainly, and very important as the community values family ties and cultural heritage.
Negative Impacts. Due to duplicity of impacts across project phases, a consolidated analysis of impacts timing will be clearly presented.				
11. Risk of noncompliance of dyke and drainage designs with government standards, leading to design rejection by government or project implementation delays.	Huge direct impact to the whole project implementation.	Incidental in the planning and phase	Temporary as this can be corrected through engagement.	Likely since most design standards in the country are still being developed. This is important as this affects timeliness of project implementation and the integrity of the final infrastructure, thereby exposing communities to even more flood risks in the event of design related dyke breach of drainage failure.
12. Land use conflicts. The dyke, drainage, borrow pits and access roads may require land. This creates a risk of encroachment on customary land, communal grazing areas, wetlands, and seasonal livelihood systems, including fishing and flood-recession agriculture. Associated impacts may include loss of crops, trees, and income sources.	Long stretch of dyke, drainage and borrow pits. Affects the community that owns the land. In the South Sudan context, where land is predominantly governed under customary tenure systems.	Immediate in the planning and construction phases.	Permanent since the proposed infrastructure is a permanent feature on the landscape.	Unlikely since the community owns the land, is in support of the project and willing to donate land for the project. Very important considering the value given to land and that it can lead to conflicts.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
13. Conflict arising from disputed ownership in the reclaimed land. There is also a significant risk of inadequate compensation and exclusion of informal or secondary land users particularly women, internally displaced persons (IDPs), and pastoralists	Low impact as most landowners are historically known by the community members.	Immediate during the planning and operation phases.	Temporary as disputes can be resolved.	Likely since there is lots of human movement during flooding seasons and times of conflict. Very important as this is directly linked to peace and livelihoods of the community.
14. Risk of Elite Capture. Risk of elite influencing beneficiary selection, allocation of employment opportunities.	A serious risk that can affect the whole project implementation and raise conflict in the community.	Incidental in the planning, construction and operational phases.	Temporary as this can be resolved.	Unlikely, considering the unison in the community despites the power that leaders have versus the vulnerability of the community members. Very important as this may give rise to community tensions.
15. Exclusion of Vulnerable Groups. Vulnerable groups—including women, the elderly, persons with disabilities, and IDPs—may face barriers to meaningful participation in consultations and decision-making processes. Without targeted measures, these groups risk being excluded from project benefits and safeguards.	Rampant risk and affects the vulnerable groups within the community.	Systemic during the planning, construction and operation phases.	Permanent impact in the event of occurrence.	Likely considering that barriers may stem from literacy constraints, language differences, mobility limitations, and prevailing social norms that restrict the participation of certain groups, particularly women. Very important as this segment of stakeholders are present in high numbers and need protection.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
16. Disruption of Livelihoods Planned dyke and drainage interventions may alter natural water flow patterns, affecting farming cycles, fisheries, and grazing routes. Such changes may have both localized and downstream impacts, including increased flood risks in adjacent areas. These disruptions can adversely affect livelihoods and may contribute to tensions between communities, particularly where water and land resources are shared.	Large spatial extent considering the length of dyke and drainage. This affects communities along and downstream of breached areas.	Accidental in the operation phase.	Temporary as this can be rectified.	Unlikely considering that detailed flood analysis was done as part of the project design. Very important implications in the event of occurrence.
17. Weak Stakeholder Engagement and Grievance Redress Mechanisms (GRM). Inadequate or poorly structured stakeholder engagement may lead to limited community buy-in and resistance to project implementation. Weak or inaccessible grievance redress mechanisms, including lack of awareness or trust in the system, may prevent timely resolution of concerns.	Extensive implication to the whole project implementation process, intended project beneficiaries and project affected persons.	Systemic occurrence in all project phases.	Temporary as this can be corrected and strengthened.	Likely considering the pressure to implement the project before rains start. Very important as neglect of stakeholder engagement may lead to project failure or may escalate into disputes or broader social conflict.
18. Disruption of normal movement due to closure of routes to give way to heavy construction equipment.	Small extent impact to the few motorists and pedestrians within the work areas.	Short term during construction.	Temporary since routes reopen after construction.	Definite and low importance as alternative routes are available. Vehicular traffic is also low within work areas.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
19. Air pollution. Dust from earth works and heavy equipment.	Low dust impacts felt by the local immediate neighbourhood.	Intermittent in construction phase.	Temporary as dust eventually settles.	Likely due to proximity of works to residential areas. Moderate importance as it affects public health.
20. Air pollution. Exhaust fumes of heavy equipment.	Negligible extent though the impact global attention.	Intermittent in construction phase.	Temporary and reversible considering vast natural pollution receiving capacity.	Likely and low importance due to receiving air quality capacity.
21. Air pollution. Noise and vibration of heavy equipment.	Low magnitude to the immediate neighbourhood.	Intermittent during construction phase.	Temporal and reversible.	Likely due to proximity to the community. Highly important as it affects public health.
22. Human traffic vs mobile equipment accidents since the work areas are within reach of children and old.	Moderate extent and affects pedestrians who have access to the work areas.	Accidentally during construction and operation phases.	Temporary risk as risk shifts with changing work areas.	Likely and very important considering proximity to communities and children and old have access to work areas as they conduct their daily endeavours.
23. Motorist vs mobile equipment accidents	Minor extent as there are few vehicles within the work areas.	Accidental during construction phase.	Temporary risk as risk shifts with changing work areas.	Unlikely considering low traffic density in the work area. Very important in the event of occurrence.
24. Animal vs mobile equipment accidents.	Huge risk as the work area is accessible by cattle and goats.	Accidentally during the construction phase.	Temporary risk as risk shifts with changing work areas.	Likely considering heavy presence of cattle within the work areas. Very important considering the value of cattle to the community.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
25. Employee Occupational Safety and Health risks. Dike construction and drainage system construction activities involve working with tools, machinery and materials that pose significant risk of injury and fatalities if not managed well. Workers may be exposed to hazards such as slips and falls, injuries from machinery, dust inhalation, noise exposure, and heat stress.	Limited extent as there are few employees and work processes are simple.	Accidental during construction phase.	Temporary, but injuries may be irreversible on occurrence.	Likely but minor incidents considering scope of work and equipment being used. Very important as this threatens life.
26. Land degradation at the borrow pit. The borrow pit will not be filled and remains scarred on the landscape.	Moderate spatial extent and affects immediate environs.	Immediate impacts during construction and remains for the operation phase	Permanent since this will not be refilled.	Certain and low importance as location of the borrow pit is on the flooding side of the dyke and water accumulated is desirable for use by the community during the dry season for drinking cattle and to drain out excess water.
27. Risk of humans and animals falling into a borrow pit.	Wide spatial extent since unsuspecting herds of cattle and wildlife come from many directions.	Accidental during construction and operation phases.	Temporary since animal movement changes seasonally.	Likely since there is lots of cattle. Very important considering the high value placed on cattle.
28. Soil erosion potential of the dyke infrastructure.	Moderate magnitude. Localized to the project site.	Intermittent Construction and operation phase.	Temporal land disturbance. Reversible by rehabilitation	Likely. Low importance since areas already impacted with other human activity.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
			works and revegetation.	
29. Sedimentation and hydraulic capacity reduction of the drainage	Low magnitude considering drainage design. Localized to immediate drainage channels.	Intermittent in operation phase.	Temporal and reversible.	Likely. Highly important as it contributes to new flooding problems and may be a source of conflict.
30. Potential for structural failure or floodwaters higher than capacity of control structures, resulting in unintended flooding of downstream communities.	This affects downstream communities.	Immediate impact during operation phase and in time of excess rains.	Seasonal but can be long term damage.	Unlikely due to the hydrological studies conducted as part of the design. This is important as occurrence may result in catastrophe to the downstream communities.
31. Water pollution. Siltation of the surface water.	A minor extent as slope does not allow much soil erosion and directly affects the immediate surface water resources.	Intermittent during rainy season, during construction and operation phase	Temporal. Reversible after sedimentation.	Likely and highly important as it affects surface water users.
32. Land pollution. Contractor services equipment on site and oil may spill on land.	Small spatial extent as repair works are confined to small areas outside the sensitive ecosystem.	Accidental during construction phase.	Temporal and reversible.	Likely and very important as oil is considered hazardous waste.
33. Community health, safety and security risks from contractor camp-community interactions.	The contractor camp is strategically located to minimize contact with the local community.	Continuous during the construction phase.	Temporal exposure but permanent impacts e.g. HIV infection, PSEA/SH.	Likely and very important as it affects community wellbeing.

Impact	Magnitude and extent	Timing and duration	Permanence	Likelihood and importance.
34. Increased competition for local services between contractor and community. This may apply to access to water, sanitation and health facilities.	Low extent limited to immediate local areas.	Intermittent during construction phase.	Reversible as the construction phase is short-lived.	Likely contractors will live amongst local communities. Important as local community infrastructure capacity is already limited.
35. Gender based violence (GBV), including sexual exploitation, abuse, and harassment (SEA/SH).	Low magnitude to isolated cases in the community.	Intermittent throughout the project life.	Temporal with long term effect.	Likely and highly important.
36. Disturbance to the cultural, religious, and archaeological sites due to chance finds.	Localized to unforeseen sites within the excavation areas.	Accidental during construction phase.	Usually, permanent damage occurs due to mechanized excavations.	Likely since areas may have unknown burial sites. Important considering cultural heritage for the community.

6.3 Impact Assessment

Following the identification and analysis of potential environmental impacts, this section focuses on the evaluation of the significance of the identified impacts and the impact of the potential remedial action or enhancement measures.

A systematic process was followed in evaluating significance, distinguishing between 'as predicted' and 'residual' impacts.

3. Step one involved evaluating the significance of 'as predicted' impacts to define the requirements for mitigation and other remedial actions.
4. Step two involves evaluating the significance of the 'residual' impacts, i.e. after mitigation measures are considered. This test is the critical measure of whether or not a proposal is likely to cause significant impacts. It is determined by the intensity (a joint consideration of its characteristics used in impact analysis i.e. magnitude, extent, duration, permanence, timing and importance placed on the impact) and the probability of occurrence.

First, a technical judgment was made of the extent to which mitigation will reduce 'as predicted' impacts. Second, a subjective value was placed on the significance of residual impacts, using criteria and tests described below.

Assessed significance was found as a product of intensity and probability as given below;

Intensity x probability = impact significance

The following key will be used in the allocation of significance and importance.

Table 6.3.1: Key for impact intensity, probability and significance.

Intensity	**Probability**			
	1	**2**	**3**	**4**
1		Low significance		Low significance
2				
3		Moderate significance		Substantial significance
4			Substantial Significance	High significance

The conventional classification was applied for both the positive and negative impacts with the only difference being that when considering positive impact, enhancement measures will be applicable while mitigation was applied to negative impacts. The "as predicted significance" pertains to unmitigated negative impacts and the level of positive benefit had before the enhancement measures. The residual significance refers to the magnitude of negative impacts that remain even after mitigation and refers to the level of positive benefit after the enhancement measures are implemented.

The impact evaluation process was carried out for each of the respective subprojects.

Table 6.5.2: Impact Evaluation

Impact	Severity	Importance	Significance
Impact 1	Employment creation. IOM project staff, contracted employees and primary suppliers' workers.		
Predicted significance	**1**	**4**	**4**
Enhancement	Give equal employment opportunities to males, females and disabled persons too. Pay sustainable wages. Ensure safe working conditions. Employ locals in all non-technical jobs. Prevent child labour and implement requirements of Labour Management Procedures. Maintain Employee GRM system.		
Residual significance	**2**	**4**	**8**
Impact 2	Creation of alternative source of livelihoods to "age-sets" youths discouraging them from being involved in inter - tribal cattle raids and conflicts, thereby reducing the potential for inter-tribal conflict.		
Predicted significance	**1**	**4**	**4**
Enhancement	Recruit youths based on transparent criteria to avoid favouritism as such accusations will raise potential for conflict. Encourage youth to pursue professional development.		
Residual significance	**2**	**4**	**8**
Impact 3	Reduced conflict reduces risk of abductions of children and women.		
Predicted significance	**1**	**4**	**4**
Enhancement	Maximize all factors that enhance peace, i.e. avoid land use conflicts, compensate all property damaged by project, employ locals in fairness and transparency, fairness in land allocation in the reclaimed land.		
Resultant significance	**2**	**4**	**8**
Impact 4	Boost in local trade microeconomics. Informal traders of food stuffs, accommodation services and local construction materials.		
Predicted significance	**0-1**	**3**	**0-3**
Enhancement	Pay workers on time. Procure materials locally as much as possible. Pay fair prices for materials and services.		
Resultant significance	**1**	**3**	**3**

Impact	Severity	Importance	Significance
Impact 5	Human habitation and flood disaster reduction.		
Predicted significance	3	4	12
Enhancement	Ensure the community structures are organized to foster orderly allocation of the reclaimed land.		
Resultant significance	4	4	16
Impact 6	Reduced environmental drivers of community conflict as communities will now stay in reclaimed areas more permanently.		
Predicted significance	3	4	12
Enhancement	Ensure infrastructure design is resilient and based on a hydrological flooding model, ensure quality construction process and sustainable maintenance program for infrastructure.		
Resultant significance	4	4	16
Impact 7	Improved public health. Reduced mosquito breeding problem, flooding of water sources, sanitation and public health facilities.		
Predicted significance	2	4	8
Enhancement	Synchronize with government and other partners in the health sector to maximize public health awareness campaigns to communities benefiting from the land rehabilitation and generate cumulative positive public health impact.		
Resultant significance	3	4	12
Impact 8	Enhance mobility and safe access to key centres within the community. Inclusion of footpaths and docking points. Access to education and commercial facilities.		
Predicted significance	3	4	12
Enhancement	Engagement of communities prior to location of footpaths and crossing points and detours and barricading some areas for construction works.		
Resultant significance	4	4	16

Impact	Severity	Importance	Significance
Impact 9	Improved local agricultural sector. Improved drainage will reduce waterlogging and resultantly improve pastures and soil quality for agricultural activities (livestock health and crop production) which will improve microeconomics and food security of the community.		
Predicted significance	1	4	4
Enhancement	Maintain dyke functionality. Improve on animal husbandry and agronomic practise. Innovate around the cultural value of cattle and commercialize cattle ranching practice. Invest in irrigation schemes for community crop production.		
Resultant significance	4	4	16
Impact 10	Preservation of cultural heritage. More permanent settlements allow communities to preserve family bonds and cultural heritage.		
Predicted significance	1	4	4
Enhancement	Maintain dyke functionality. Allocate land in rehabilitated areas to families and propagate dynamic permanent stay mentality. Maintain peace and equity with the local community. Encourage and celebrate cultural diversity and tolerance with communities. Document and share ongoing cultural enhancement activities within communities.		
Resultant significance	4	4	16
Impact 11	Risk of noncompliance of dyke and drainage designs with government standards, leading to design rejection by government or project implementation delays.		
Predicted significance	1	4	4
Mitigation	Engage the responsible government department early for design concept, development, review and approval.		
Residual significance	0-1	4	0-4
Impact 12	Land use conflicts. The dyke, drainage, borrow pits and access roads may require land. This creates a risk of encroachment on customary land, communal grazing areas, wetlands, and seasonal livelihood systems, including fishing and flood-recession agriculture. Associated impacts may include loss of crops, trees, and income sources.		
Predicted significance	3	4	12
Mitigation	Secure voluntary land donation. Screen out the projects that have potential for relocation complications.		

Impact	Severity	Importance	Significance
	In the case of voluntary relocation. Secure consent for relocation. Allocate relocation costs consistent with ESS5 and in line with Project Financing Agreement. IOM secures interests of Project Affected Persons by ensuring no works are started before securing relocation budget and full implementation of voluntary relocation process. Engage the local leaders and secure Land Donation Documentation. Engage the local leaders and PAPs to secure PAPs consent to relocate. Engage individual PAPs and secure and document agreement on relocation costs and relocation plan. Prevent PAPs from being forcibly relocated or to accept unfair compensation. Monitor closely implementation of the relocation plan.		
Residual significance	0-1	4	0-4
Impact 13	Conflict arising from disputed ownership in the reclaimed land. There is also a significant risk of inadequate compensation and exclusion of informal or secondary land users particularly women, internally displaced persons (IDPs), and pastoralists		
Predicted significance	3	4	12
Enhancement	Land redistribution is done by the designated committee of the area, which comprises all stakeholders for that community, including the vulnerable groups. The committee has the full history of the previous landowners ensuring there is consistency throughout.		
Residual significance	0-1	4	0-4
Impact 14	Risk of Elite Capture. Risk of elite influencing beneficiary selection, allocation of employment opportunities.		
Predicted significance	3	4	12
Mitigation	Implement the Stakeholder Engagement Plan (SEP). Work with official stakeholder committees and representatives. Document all engagements and share with stakeholders.		
Residual significance	0-1	4	0-4
Impact 15	Exclusion of Vulnerable Groups. Vulnerable groups—including women, the elderly, persons with disabilities, and IDPs—may face barriers to meaningful participation in consultations and decision-making processes. Without targeted measures, these groups risk being excluded from project benefits and safeguards.		
Predicted significance	3	4	12

Impact	Severity	Importance	Significance
Mitigation	Establish an exhaustive stakeholder list before consultation and verify with the local community if all stakeholders are represented. Schedule the meetings to a date and time that all stakeholders can attend. Select appropriate meeting places accessible to all stakeholders. Use a language that all stakeholders will understand. Consult cultural values important for consultation, e.g. separating meetings of men and of women.		
Residual significance	0-1	4	0-4
Impact 16	Disruption of Livelihoods. Planned dyke and drainage interventions may alter natural water flow patterns, affecting farming cycles, fisheries, and grazing routes. Such changes may have both localized and downstream impacts, including increased flood risks in adjacent areas. These disruptions can adversely affect livelihoods and may contribute to tensions between communities, particularly where water and land resources are shared.		
Predicted significance	2	4	8
Mitigation	Maintain dyke and drainage design in line with the Flood Analysis conducted by ARUP (2025). Maintain active stakeholder engagement. Establish if there is any correlation between the PAPs feedback with resultant flooding pattern after construction of infrastructure. Monitor the new flooding pattern after the construction and share with stakeholders, including the crop farmers, fishermen, pastoralists and residents to create a new baseline that can be used for future project impact monitoring.		
Residual significance	0-1	4	0-4
Impact 17	Risk of Weak Stakeholder Engagement and Grievance Redress Mechanisms (GRM). Inadequate or poorly structured stakeholder engagement may lead to limited community buy-in and resistance to project implementation. Weak or inaccessible grievance redress mechanisms, including lack of awareness or trust in the system, may prevent timely resolution of concerns and conflict.		
Predicted significance	1	4	0-4
Mitigation	Disclose, implement, evaluate and update the Stakeholder Engagement Plan (SEP), Grievance Redress Mechanism (GRM) and G-ESMP. Document and share all the engagement meetings and resolutions. Deploy Community Outreach Assistants all the time to facilitate full implementation of all G-ESMP support procedures.		
Residual significance	0-1	4	0-4
Impact 18	Disruption of normal movement due to closure of routes to give way to heavy construction equipment.		

Impact	Severity	Importance	Significance
Predicted significance	2	2	4
Mitigation	Engage stakeholders well before closure of any such community routes. On closure, barricade and install reflective tape and make the physical closure barricade structure as visible as possible. Establish alternative safe routes. Solicit feedback on such impacts during stakeholder engagement meetings.		
Residual significance	0-1	2	0-2
Impact 19	Air pollution. Dust from earth works and heavy equipment.		
Predicted significance	2	2	4
Mitigation	Reduce speed in residential areas. Occasional spray of water on the dump truck route.		
Residual significance	0-1	2	0-2
Impact 20	Air pollution. Exhaust fumes of heavy equipment.		
Predicted significance	2	2	4
Mitigation	Service project vehicles on time to reduce emissions Engines must be turned off when vehicles are not in use or when waiting for loading or off-loading. Idling must be prohibited. Dike construction vehicles to travel at low speeds and caution to be taken during windy periods.		
Residual significance	0-1	2	0-2
Impact 21	Air pollution. Noise and vibration of heavy equipment.		
Predicted significance	1	1	1
Mitigation	Limit construction vehicles to daytime.		
Residual significance	1	0-1	0-1
Impact 22	Human (especially children and old) vs mobile equipment traffic accidents.		
Predicted significance	1	4	4

Impact	Severity	Importance	Significance
Mitigation	Ensure safe speed within the community. Driver to watch out for human traffic. The vehicle should be road worthy. Community awareness (schools and residential areas) on construction vehicles on roads and pedestrians to keep completely off the road and only come back on the road after dust clears and sure that there is no additional vehicle on the road. Comply with Traffic Management Plan.		
Residual significance	0-1	4	0-4
Impact 23	Motorist vs mobile equipment traffic accidents		
Predicted significance	1	4	4
Mitigation	Install safety signage on the work area (speed limit, high visibility, give way, stop etc). Use traffic controllers on all critical sections of the road. Barricade completely the active works lane.		
Residual significance	0-1	4	0-4
Impact 24	Animal (especially cattle and pigs) vs mobile equipment accidents		
Predicted significance	1	4	4
Mitigation	Establish the general time cattle are taken out for, and in from grazing and maximize preventive effort during the time. Maintain low speed in animal infested areas. Maintain vehicle road worthy. Maintain strategic lags period between construction vehicles to allow dust from another vehicle to clear before the other drives through. Comply with Traffic Management Plan.		
Residual Significance	0-1	4	4
Impact 25	Employee Occupational Safety and Health risks. Dike construction, drainage system construction activities involve working with tools, machinery and materials that pose significant risk of injury and fatalities if not managed well. Workers may be exposed to hazards such as slips and falls, injuries from machinery, dust inhalation, noise exposure, and heat stress.		
Predicted significance	2	4	8
Mitigation	Induct contractor on importance of OSH Requirements. Contractor to conduct activity-based Risk Assessment and raise awareness to employees on the specific safety and health risks for the activity together with the mitigation		

Impact	Severity	Importance	Significance
	measures, including correct use of PPE and equipment. Site Engineer to conduct weekly HSSE Inspection and follow up on correction action, escalate persistent noncompliance. Provide appropriate toilet facilities at borrow pits.		
Residual significance	0-1	4	0-4
Impact 26	Land degradation of the borrow pit footprint. The borrow pit will not be filled and remains scarred on the landscape. The community expressed gladness to use the borrow pit as water sources during the dry season.		
Predicted significance	4	3	8
Mitigation	Locate a borrow pit on the lower end of the flood side of the dyke to maximize water collection capacity, as far from community access as possible. Dyke around the pit with excavated topsoil. Fence off the borrow pit. Incline and/or bench the walls of the pit progressively and the contractor shall not wait for the final minute rehabilitation. Leave safe passage in and out of the pit by cattle or wild animals. Raise awareness to restrict children from playing in the borrow pit area as a "No Go Area" Comply borrow pit management plan.		
Residual significance	2	3	6
Impact 27	Risk of humans and animals falling into a borrow pit. Animals may get stuck in the mud on attempting to drink from the pit. Children are tempted to swim in the watered pit, get stuck in the mud and drown.		
Predicted significance	3	4	12
Mitigation	Dyke around the pit with excavated topsoil. Fence off the borrow pit. Fence off the borrow pit. Incline and/or bench the walls of the pit progressively and not wait for the final minute rehabilitation. Leave safe passage in and out of the pit by cattle or wild animals. Raise awareness to restrict children from playing in the borrow pit area as a "No Go Area". Comply borrow pit management plan.		
Residual significance	1	4	4
Impact 28	Soil erosion potential of the dyke infrastructure.		
Predicted significance	2	2	4
Mitigation	Maintain a shallow slope on the edges of the dyke. Bank topsoil and apply it as much as possible on final profiling of edges to promote natural revegetation. Scheduling to avoid heavy rainfall and windy periods (i.e., during the dry		

Impact	Severity	Importance	Significance
	season) to the extent practical. Reducing or preventing off-site sediment transport through use of settlement ponds, silt fences		
Residual significance	1	2	2
Impact 29	Sedimentation and hydraulic capacity reduction of the drainage		
Predicted significance	3	4	12
Mitigation	Reduce sediment inflow through vegetative buffers along drain banks to stabilize soil and filter out sediment before it enters the channel. Construct small, semi-permeable check dams or sediment basins upstream and along secondary channels to slow runoff and trap silt before it chokes the main drains. Periodically clear built-up clay soils and debris using manual labour or heavy machinery (such as mechanical dredgers) before heavy rainy seasons. Proper sizing and grading. Redesign key channels with gradual, self-cleaning slopes and larger hydraulic capacities to accommodate extreme flood events when required.		
Residual significance	1	4	4
Impact 30	Risk for structural failure or floodwaters higher than capacity of control structures, resulting in unintended flooding of downstream communities.		
Predicted significance	3	4	12
Mitigation	Design dyke and drain based on hydrological analysis. Review and approval of design by hydrological experts. Construct according to design. Maintain dyke and drainage regularly. Review and upgrade infrastructure design based on operational structural integrity assessments.		
Residual significance	0-1	4	0-4
Impact 31	Surface and ground water pollution.		
Predicted significance	1	4	4
Mitigation	Select areas for washing that are not free draining directly into the watercourse. Provide toilets for workers at all contractor camps and active borrow pits. Immobilize project waste in appropriate, permitted and clay compacted and sealed disposal site since the project area has no landfill site.		
Residual significance	0-1	4	0-4
Impact 32	Land pollution. Contractor services equipment on site and oil may spill on land.		

Impact	Severity	Importance	Significance
Predicted significance	1	4	4
Mitigation	Drain out oil into containers. Select areas for washing that are not free draining directly into the watercourse. Immobilize oil waste into concrete cement blocks and select appropriate, permitted and clay compacted and sealed disposal site since the project area has no landfill.		
Residual significance	0-1	4	0-4
Impact 33	Community health and safety risks from contractor camp-community interactions.		
Predicted significance	2	4	8
Mitigation	Screening workers for general health fitness before deployment as much as possible and in line with labour laws. Undertaking health awareness and education initiatives, for example, by implementing an information strategy to reinforce person-to-person counselling addressing systemic factors that can influence individual behaviour as well as promoting individual protection, and protecting others from infection, by encouraging condom use. Conducting immunization programs for workers in local communities to improve health and guard against infection. Providing information on available health services providers in the project area. Providing treatment through standard case management in on-site or community health care facilities. Ensuring ready access to medical treatment, confidentiality and appropriate care, particularly with respect to migrant workers. Promoting collaboration with local authorities to enhance access of workers' families and the community to public health services and promote immunization. Provide safe drinking water and sanitation to contractor camp. Provide mosquito nets to employees in camp. Provide safe food outlets to employees in camp. Provide a first aid kit to employees in camp. Fence of contractor camp and restrict entry to community. Induct contractor and employees on the security status of the area.		
Residual significance	0-1	4	0-4
Impact 34	Increased competition for local services between contractor and community. This may apply to access to water, sanitation and health facilities.		
Predicted significance	2	4	8
Mitigation	Establish self-reliance on water supply, sanitation facilities and medical requirements.		
Residual significance	1	4	4
Impact 35	Increased Gender Based Violence (GBV), including sexual exploitation, abuse, and harassment (SEA/SH).		
Predicted significance	3	4	12

Impact	Severity	Importance	Significance
Mitigation	Staff induction and training. Ensuring that all project workers, contractor workers or suppliers are briefed on the project PSEA requirements and Code of conduct. Training and creating more awareness on GBV/SEA. Continue GBV safety Audits of every sub-project. Safety Audits sessions also act as a space for creating more awareness and educating the communities on General protection and GBV in specific. Service mapping of protection and GBV related services. This helps to identify the updated referral pathways to the communities. Women Leadership Trainings and confidence Building to empower women to speak and raise concerns related to them. Promotion of reporting systems that are anonymous and that protect the victim		
Residual significance	1	4	4
Impact 36	Disturbance to sites of cultural heritage		
Predicted significance	1	4	4
Mitigation	Enquire with the local community if there are any sites of cultural heritage during contractor introductions to local leaders. Induct the contractor on chance to find a procedure. Contractor complies with chance finds procedure.		
Residual significance	0-1	4	0-4

In summary, the IFMM sub project is expected to generate substantial positive impacts, particularly in reducing flood risk, improving public health, and enhancing mobility. Adverse impacts are generally minor to moderate, short term, and reversible, and can be effectively managed through appropriate mitigation measures. No irreversible or large-scale negative impacts are anticipated, and the project does not trigger land acquisition or resettlement impacts. The next chapter will outline the specific mitigation measures and management strategies required to address the identified risks.

CHAPTER 8

ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

Table 6. ESMMP Summary Table

Potential risk and Impacts	Mitigation measures	Implementing Body	Time frame	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates (USD)
PRE-CONSTRUCTION/ STAGE									
Tender documents prepared with access to or use of the this G-ESMP	Tender documents will include a copy of the G-ESMP, which shall be included in the safeguard clauses of the Technical Specifications in the contracts and commitment to comply with Lender Requirements	IOM (ECRP II)	Before recruiting of contractor	Document review, Audits, and inspections	Number of tender documents (which included G-ESMP requirements) provided to contractors	Ongoing, any time when tenders are prepared.	IOM-ECRP II, Greater Pibor Administrative Area Dyke Management Committee PMU	Monthly	500

Potential risk and Impacts	Mitigation measures	Implementing Body	Time frame	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates (USD)
PRE-CONSTRUCTION/ STAGE									
Planning/stakeholder engagement with community, local authorities to ensure buy-in and participation	Communities and local authorities in Pibor agree with the rehabilitation works, including approving specifications, designs and locations of the dikes	IOM (ECRP II) and contractor	Before recruiting of contractor and after work commencement	Stakeholder engagement meetings	Number of meetings and actions agreed	Before tender and continuous	IOM, contractor	Monthly	1000
Planning/ Designing Ensure compliance with dike construction legislation of South Sudan	Acquire dike construction permit Provide Water management guidelines if sub-projects are executed near surface watercourses.	IOM (ECRP II)	Before starting work	Document review, Audits and inspections	Number of permits acquired, and awareness meetings held on dike construction	Monthly	ECRP II, CCCM, Greater Pibor Administrative Area Dyke Management Committee, PMU	At the start of the sub-projects	Staff costs

Potential risk and Impacts	Mitigation measures	Implementing Body	Time frame	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates (USD)
PRE-CONSTRUCTION/ STAGE									
Planning/ Designing Potential damages to the existing infrastructure and facilities.	Preserving existing local infrastructure and working in cooperation with relevant institutions at all levels of authority.	IOM (ECRP II)	Continuously during planning phase	Inspections	Number of site inspections	Weekly	Contractor and Greater Pibor Administrative Area Dyke Management Committee, PMU,	Continuous throughout project implementation	Staff costs
Poor drainage system and dike /dike construction planning	-Careful selection of engineering options at planning stage. -Limitation of degree of channel modification on maintenance.	IOM (ECRP II)	Continuously during planning phase	Inspections	Number of site inspections	Weekly	Contractor and Greater Pibor Administrative Area Dyke Management Committee, PMU	At planning stage	Staff costs
Occupational Health and Safety	-Pre-Task Risk assessment Adequate PPE supply, Worker Induction, -Close monitoring through	IOM (ECRP II)	Continuously during planning phase	Document review, Audits and inspections	Documented OHS Management plan Adequate PPE supply Clear Work Procedures	Weekly by Field teams /Monthly by Juba Teams	ECRP II, CDRMC, PMU	Continuous throughout project implementation	5000

Potential risk and Impacts	Mitigation measures	Implementing Body	Time frame	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates (USD)
PRE-CONSTRUCTION/ STAGE									
	inspections, and audits				Induction register Pre-Task Risk assessment				
Minimize drivers of conflict in the community through fair distribution of benefits, unexpected flooding of downstream communities through normal discharge drainage of dyke breach	Project design should be discussed with all stakeholders to ensure project benefits are strategically spread across the community without discrimination. Ensure designed caters for flood analysis.	IOM (ECRP II)	Before project design finalization.	Consultation documentation. Sound dyke and drainage design	All stakeholders support the project. No design related conflict.	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	During the progress review meeting.	1000

Potential risk and Impacts	Mitigation measures	Implementing Body	Time frame	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates (USD)
PRE-CONSTRUCTION/ STAGE									
Eliminate Land use conflicts	Screen out activities with compulsory land acquisition. Where there is voluntary land donation to project, secure Land Donation Forms. Where the donated land has structure, screen out or secure fair restoration of affected assets for voluntary relocation. Do not start works until relocation of assets is completed.	IOM (ECRP II)	Before project implementation.	Review restoration of assets in line with ESS5.	Land Donation Documentation. Restoration Budget Completed relocation before work.	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	During progress review meetings.	Staff costs

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
Minimize Drivers of conflict in the community through alternative sources of income to "age sets "youths.	Include employment of youths. Encourage youth to engage in professional development	IOM (ECRP II)	During contractor labour recruitment.	Recruitment records.	Local Youths employed.	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	During progress review meetings.	Staff costs
Materials supplies: Soil burrow pit; disturbance of wetland edges; water quality	Use the approved quarry/ burrow pits. After exploitation ensure borrow pits are remediated.	IOM (ECRP II)	daily	Inspection reports	Number of site inspections	daily	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Weekly	5000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
Material transportation e.g., soils, sand	-Cover truck load	IOM (ECRP II)	daily	Inspection reports	Number of site inspections	daily	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Weekly	2000
Soil erosion and Loss of topsoil due to access roads, quarry sites work areas and drainage system and dike construction/ activities	-Scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical. -Contouring and minimizing length and steepness of slopes -Mulching to stabilize exposed areas.	IOM (ECRP II)	daily	Inspection reports	Number of site inspections	daily	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	-Re-vegetating areas by replanting grass and or reforestation promptly. -Reducing or preventing off-site sediment transport through use of settlement ponds, silt fences, and upgrading or suspending activities during extreme rainfall and high winds to the extent practical.								
Potential surface and ground water impact due to soil erosion	-Establish appropriate erosion and sediment control	IOM (ECRP II)	daily	Site inspections	Number of site inspections	weekly	ECRP II, Greater Pibor Administrati	Monthly	5000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
and sedimentation	measures (e.g., silt fences) to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. - - Drainage depth will be less than 2m. A properly organized waste disposal is a mandatory requirement for the Project.						ve Area Dike Management ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU		
Potential water and soil pollution due to improper	-All wastes generated during dike construction activities should	IOM (ECRP II)	daily	Site inspection reports	Number of site inspections	weekly	ECRP II, Greater Pibor Administrati	Monthly	5000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
material storage, management, and usage, waste disposal, and drainage of wastewater to the dike construction site.	be collected and disposed of appropriately at designated sites; -Undertake monitoring of the soil and water quality and devise corrective action when changes attributed to project implementation have been observed; -The waste management hierarchy should be followed during the dike construction phase.						ve Area Dike Management Committee, PMU		

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	According to this hierarchy, source reduction of waste will be the first option and disposal of unavoidable waste as the option of the last resort; -Dispose waste material at authorised locations protected from washing out, should be marked in the site plan. -Undertake routine preventive maintenance of								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	motorized equipment to avoid any fuel leakage and spills; -Storage of fuels and oils should be undertaken in a manner that does not allow leakage to the soil as the fuel can readily infiltrate the soils polluting the soils, ground and surface water. -Preparing plans and procedures to respond to the discovery of contaminated media to								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	minimize or reduce the risk to health, safety, and the environment. -Managing contaminated media with the objective of protecting the safety and health of occupants of the site, the surrounding community, and the environment. -Organize and cover material storage areas; -Select areas for washing that are not free draining								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	directly into the watercourse. Installation of ecological toilettes for workers to avoid direct discharge of wastewater to the water body.								
Poor maintenance and repairs and refuelling at the dike construction site.	-Avoid servicing and refuelling at the site. -Use protective foils during possible vehicle refuelling and maintenance at the dike construction site. - Provide absorbing material in case of fuel spills.	IOM (ECRP II)	Weekly	Site inspection reports	Number of site inspections	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	3000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	-Used oiled materials and agents should be managed in line with the waste management report.								
Road safety and poor traffic management risks and impact for worker and communities	-Implementation of a traffic management system i.e., speed limits, traffic controllers, installation of signage. -Ensure adequate warning signs, protective fencing etc. -Observe and respect traffic rules.	IOM (ECRP II)	Daily	Implement the Dike construction Site Organization Plan.	Number of site inspections	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	-Clean dike construction waste from the dike construction site when closing the dike construction site. -Journey-specific risk assessments which will include the identification of potentially sensitive receptors along the traffic routes should be conducted. For significant traffic movements, including transport of								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	dike construction materials to site, any affected communities/residents along the route should be sensitized, and wherever possible, attempts made to undertake the traffic movements at the least busy times of day; -Only approved drivers should be allowed to operate vehicles; -Dike construction								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	materials should, wherever possible, be preferentially sourced locally in a manner that reduces environmental and social impacts (e.g., transport distances) and maximizes local economic development opportunities. -All roads should have clear and visible signage especially in community								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	areas, around schools and hospitals to minimize the risk of accidents. -All staff should undergo an Environmental, Health and Safety induction process which includes rules for safe driving, including speed limits in community areas; and -Dike construction equipment should be maintained on								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	site until the dike construction is complete to reduce vehicle movement (taking into consideration their security).								
Disturbance to the cultural and religious sites.	-Avoid any cultural or religious sites. If cultural or archaeological items are found during soil excavation and dike embankment works or drainage system, the contractor shall stop work and trigger the	IOM (ECRP II)	daily	Site inspection reports	Weekly	Number of site inspections	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	Chance Find Procedure.								
Possibility of encountering an archaeological site, archaeological materials, cultural significance, shrines	If an archaeological site is encountered such as a graveyard, the Contractor will immediately suspend the Works. Barricade the area and follow the chance finds procedure. and inform the project, Greater Pibor Administrative Area authorities (trigger chance find procedure).	IOM (ECRP II)	Daily	Chance Find Procedures in place	Weekly	Number of cultural items found	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	-

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
Equipment maintenance and fuelling	Ensure proper handling of lubricants, fuels and solvents while maintaining the equipment and work vehicles. Put in place gravity oil separator, absorbent mat/ fabric	IOM (ECRP II)	Weekly	Camp and dike construction site inspections	Number of site inspections	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	3000
Impacts on land use/ settlements expansion	The dikes will be constructed on public land reserves. There will be no physical displacement of any household. The Greater Pibor Administrative	IOM (ECRP II)	daily	Site inspection reports	Number of site inspections	weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	Staff costs

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	Area administration pledged to control encroachment as a result of settlement expansion towards the dikes.								
Air quality due to dust from transportation of dike construction materials and truck traffic and elevated levels of nitrogen oxide (NOx) and sulphur oxide (SOx)	-Minimizing dust from material handling sources, such as conveyors and bins, by using covers and/or control equipment (water suppression, bag house, or cyclone). - Minimizing dust from open area	IOM (ECRP II)	Daily	Monitoring speed limit within town	Speed and dust observations	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	3000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
from dike construction equipment exhausts	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.								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
Minimal loss of flora and fauna can occur during material excavation at quarries and embankments (work ways along the dike)	Flora and fauna in the surrounding towns and wetlands might be affected. -Flora -Land clearance should be restricted to that which is required for the project components to minimize the loss of vegetation; -Restrict vehicle movements to and from the project site(s) to the project access road – off-road driving should be prohibited;	IOM (ECRP II)	Weekly	Site inspection reports	Number of site inspections	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	-Site restoration should be undertaken for areas where temporary project infrastructure will be established during the dike construction phase. The affected areas should be restored, and only indigenous vegetation replant or re-seed vegetation e.g., grasses, trees - Intentional restoration using exotic plant								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	species should be avoided; -Sensitize workers against unnecessary destruction, trampling and clearance of flora/crops and fauna; -In an event that the project activities may have potential adverse impacts on biodiversity, a biodiversity management plan should be developed, if the potential risk of project activities are insignificant, the appropriate mitigation								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	measures should be implemented.								
Noise pollution	Only limited temporary impact during excavation and embankments work. Impact can be mitigated by - Prior notice/community awareness will be undertaken for the local community members to keep them informed of what will take place/schedules	IOM (ECRP II)	Weekly	Site inspection reports	Number of site inspections	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	3000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	of the subproject activities so that they are able to plan accordingly; -Construction/ activities will be limited to only daytime hours; -Noise monitoring will be undertaken within the area and at nearby sensitive receptor sites during construction/; -Using noise control devices, such as temporary noise barriers and								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	deflectors for impact and blasting activities, exhaust muffling devices for combustion engines. -Avoiding or minimizing project transportation through community areas. -Use of well-maintained and serviced equipment that generates low noise levels will be emphasized. -Workers involved in								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	construction/ activities will be provided with requisite Personal Protective Equipment; and -Idling of machinery including vehicles will be prohibited unless necessary.								
Solid waste, like, wood, stones, plastic materials, and fuels spill from the machine.	- Implement waste management hierarchy -Non-hazardous wastes can be managed by reusing, recycling, or can	IOM (ECRP II)	Weekly	Site inspection reports	Number of site inspections	weekly	ECRP II, Greater Pibor Administrative Area Dike Management	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	be sold to authorized collectors and recyclers and should be disposed of using the South Sudan solid waste disposal facilities. -As there are no known facilities to dispose of hazardous waste in the country. The Contractor should consider designing a temporary hazardous waste storage facility in consideration of the generated amounts and timing before						Committee, PMU		

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	final disposal by licensed hazardous waste handlers in accordance with the national legislative requirements and world Bank ESF requirements and GIIP practices; -Maximize the re-use of all excavated materials in the dike construction works. -Disposal of surplus material								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	(spoil) only at designated sites approved by the responsible local authority and only by approved methods. -No spoil should be disposed of in wetlands, near watercourses and other important habits -Contract a licensed hazardous waste handler to safely transport and dispose of hazardous waste;								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	-Capacitate and support licensed personnel who are involved in hazardous waste disposal and management in all aspects including financial and technical support. -Identify the potential waste streams to be generated by the project activities, and how best they can be managed; -All wastes shall be properly								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	disposed of in accordance with the national legislative requirements and in accordance with ESF requirements and GIIP practices.								
Impact on natural hydrology. Disruption of hydrology of natural waterways	Develop layout plan to limit haphazard disruption of water channels	IOM (ECRP II)	Weekly	Inspection	Inspection reports	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	Staff costs
Vibration risk from moving of dike	-Restrict vehicle movement to defined routes.	IOM (ECRP II)	Daily/Weekly	Inspections, Documents review	Reports, meeting minutes	Weekly	ECRP II, Greater Pibor	Monthly	Staff costs

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
construction vehicles and machinery.	Notification communities through awareness exercises. -Avoiding or minimizing project transportation through community areas.						Administrative Area Dike Management Committee, PMU		
Risk to community health and safety (ESS4) e.g., accidents at burrow pits, UXOs, and landmines	-Fence the quarry site to prevent people and livestock trespass. -Installation of hazard warning signs. -Awareness raising initiatives. -Rehabilitate the burrow pit to	IOM (ECRP II)	Prior to the commencement of material abstraction	Inspections, Document review, Observations	Number of Incidents	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	3000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	the extent possible.								
Health and safety risks posed by the influx of workers or people providing support services into an area	Awareness campaigns Education and awareness raising targeting employees	IOM (ECRP II)	weekly	Document review, Inspections	Number of Incidents	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	3000
Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA)	All employees to be inducted Education training and capacity building. Signing and adherence with an employee CoC mandatory	IOM (ECRP II)	Daily	Site inspection reports	Number of site inspections	Weekly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	Demand from all workers to abide by the Protection at work measures. Daily Safety talks								
Communicable diseases	-Providing surveillance and active screening and treatment of workers. -Preventing illness among workers in local communities by: - Undertaking health awareness and education initiatives, for example, by implementing an information strategy to	IOM (ECRP II)	Weekly	Site inspection reports	Number of site inspections	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	reinforce person-to-person counselling addressing systemic factors that can influence individual behaviour as well as promoting individual protection, and protecting others from infection, by encouraging condom use. -Training health workers in disease treatment. -Conducting immunization								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	programs for workers in local communities to improve health and guard against infection. -Providing health services. -Providing treatment through standard case management in on-site or community health care facilities. -Ensuring ready access to medical treatment, confidentiality and appropriate care, particularly with respect to								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	migrant workers. -Promoting collaboration with local authorities to enhance access of workers' families and the community to public health services and promote immunization. -Community awareness campaigns. -Education and awareness raising workshops for staff on spread and management of communicable disease.								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
Community health and safety risk related to Pools of water act as breeding grounds for disease and illness(mosquitoes)	-Prevention of larval and adult propagation through sanitary improvements and elimination of breeding habitats close to human settlements -Elimination of unusable impounded water. - Increase in water velocity in natural and artificial channels. - Considering the application of residual insecticide to dormitory walls. - Implementation	IOM (ECRP II)	Weekly	Dike construction Health and Safety Management Plan	Number of site inspections	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	3000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	of integrated vector control programs. - Promoting use of repellents, clothing, netting, and other barriers to prevent insect bites. - Use of chemoprophylaxis drugs by non-immune workers and collaborating with public health officials to help eradicate disease reservoirs. -Monitoring and treatment of circulating and migrating								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	populations to prevent disease reservoir spread. - 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								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	detect and treat cases. -Awareness raising campaigns.								
Risk and impacts of occupational health and safety	-The Contractor must make sure that there is a Site Safety, Health & Environmental Officer or appointed focal person. A Safety, Health and Environment awareness induction training should be conducted for both contractual and	IOM (ECRP II)	Daily	Site inspection reports, Dike construction Health and Safety Management Plan	Number of site inspections	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Weekly	5000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	casual employees before dike construction commences. -Dike construction should be carried out in accordance with relevant occupational health and safety standards. -Integrity testing must be done before work begins on heights. -Workers must be trained on climbing techniques and fall protection measures.								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	-Adequate PPE and tool bags must be delivered for workers and ensure workers are using PPE properly. -Minimum standards of provision of segregated lockable sanitary facilities for males and females where necessary. -Machines and Equipment must be operated only by qualified staff. -Fire risks are possible due to improper storage facilities								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	and lack of fire drill, and this requires provision of regular training and awareness creation to the workers; -The entire workforce should be trained in the use of protective gear, handling of chemical products, procedures for entering enclosed areas, fire protection and prevention, emergency response and care procedures;								

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	-The contractor must develop workers' Health and Safety Plan for managing risk and impact associated with OHS gaps in case of accidents.								
Labour risks of injuries. Workers may raise their concerns (safety, discontent, maltreatment or else) through the Grievance Mechanism.	-Provide PPEs; Install warning signs at the dike construction site; adopt a dike construction management plan. -Establishment of a worker specific grievance redress mechanism for	IOM (ECRP II)	Weekly	Site inspection report	Number of site inspections	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	5000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	project workers. -The project worker is entitled to give suggestions, remarks and information regarding health and safety at work. The project workers should be informed on available grievance redress mechanisms upon their employment or engagement.								
Reduced access through the	-Plan the relocation of equipment at	IOM (ECRP II)	Weekly	Site inspection report	Number of site inspections	Monthly	ECRP II, Greater Pibor	Monthly	Staff costs

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
area where the works are executed.	times when daily traffic is not jammed; -Provide alternative passage for pedestrians and vehicles in cooperation with local authorities Avoid roads through inhabited areas especially near schools and hospitals; -Prepare and implement the dike construction Site Management Plan that incorporates good dike						Administrative Area Dike Management Committee, PMU		

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Time frame for implementation	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
CONSTRUCTION/ PHASE									
	construction practice measures.								
Dike construction material leftovers after the completion of dike construction.	-Reuse/recycle leftovers. -Dispose unwanted remnants in approved sites.	IOM (ECRP II)	Weekly	Site inspection report	Amount of materials leftover after completion of work	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	2000

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
OPERATION AND MAINTENANCE PHASE									
Minimize drivers of conflict through fair distribution of land in the rehabilitated areas.	Distribute reclaimed land fairly, balancing old owners with new interest arising from IDPs and protecting other vulnerable groups. Balance land use between crop and animal farming. Maintain dyke in good working condition to avoid fresh relocations. Maintain dyke and drainage in good working order.	IOM (ECRP II)	Prior to use of reclaimed land.	Land allocation schedule. Integrity assessments for the dyke. Update the hydrological and flood analysis report	Land allocation report.	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	During dike management meetings	County Authority Operational Budget
Handover the dikes Greater Pibor Administrative Area authorities	Provide detail product design and lecture on repair and maintenance of the subprojects/dikes	IOM (ECRP II)	Once off	Dike Operation and Repair Manual	Handover report	Once off	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Once off	County Authority Operational Budget
Water logging along the dikes may become a breeding	Provide for drainage from runoff from the dike edges	IOM (ECRP II)	Monthly	Site inspection	Report of site condition	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
OPERATION AND MAINTENANCE PHASE									
ground for vectors							Committee, PMU		
Risk of vandalizing the subprojects	Erect crossing points for people and livestock Monitor the subprojects during O&M inspections	IOM (ECRP II)	Monthly	Site inspection	Completion report	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	County Authority Operational Budget
Adverse effects on fisheries and other aquatic resources by disruption of migratory routes, deterioration of habitat and changes in water quality (e-g sediment load) leading to reduction	Protection of reproductive sites for fish. -Incorporation of fishery management.	IOM (ECRP II)	Monthly	Site inspection	Report of site condition	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
OPERATION AND MAINTENANCE PHASE									
to productivity of riverine.									
Reduction of floodplain grazing, both through ecological changes on the floodplain and intensified development (Irrigated agriculture).	-Production of fodder crops and usage of by-products of irrigated food crops and development of alternative water sources. -Integration of existing rangeland use (e.g., in-nomadic herding) with planned developments, to ensure substantial ground watering possibilities in the valley during dry season.	IOM (ECRP II)	Monthly	Site inspection	Report of site condition	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Twice a year	County Authority Operational Budget
Loss of wildland and wildlife habitat.	-Identification of critical habitats and planning of flood control measures to minimize effects; -Whose habitats or species are dependent on natural flooding regime, minimize disruption of flow in that area to the extent possible.	IOM (ECRP II)	Monthly	Site inspection	Report of site condition	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Twice a year	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
OPERATION AND MAINTENANCE PHASE									
	-Establishment of settlements free zones, settlements with migration corridors and hunting protection areas and seasons (dry season).								
Flooding problems created downstream should be incorporated.	-Protection of natural overflow areas downstream. -Creation of overflow basins. -Implement emergency preparedness measures (see section 8)	IOM (ECRP II)	Monthly	Site inspection	Report of site condition	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Twice a year	County Authority Operational Budget
Potential for structural failure and floodwaters higher than capacity of control structures /measures	-Implementation of non-structural measures, such as watershed management activities (e.g., increasing vegetative cover, particularly on slopes, improving agricultural practices, implementing gully erosion control measures, etc.), planting of vegetation along river banks to help contain and reduce flooding, and protection of, or restriction of, use of	IOM (ECRP II)	Weekly	Site inspection	Report of site condition	Monthly	ECRP II, Greater Pibor Administrative Area Dike Management Committee, PMU	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body for implementation	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Time frame for monitoring	Budget Estimates
OPERATION AND MAINTENANCE PHASE									
	wetlands which have a natural flood control effect to prevent increased flood risk, and -Implement flood warning system using the emergency preparedness measures (See Chapter 8).								

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Handover and Institutional Transition Risks	Properly manage the transition to prevent the infrastructure from degrading, communities losing trust in the process, and the social and economic benefits	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	One month	Inspection reports	Number of site inspections	daily	Government of South Sudan, Contractors and other Partners	Weekly	County Authority Operational Budget
Economic Shock after Contractor Camp and Workforce Departure	Contractors should enrol employees on social security savings,	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	One month	Impact assessment report	-	-	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Borrow Pit Closure and Residual Hazards may become a social risk to people and livestock	Repurpose borrow pits for reuse as water storage for irrigation, fish ponds, or domestic uses	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Monthly	Site inspections	Number of site inspections	weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Community Expectations and Post-Project Grievances may be unmet at the time of closure	Address grievances before project closure, engage referral centres for further assistance, engage institutions on handover period	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	daily	Site inspection reports	Number of site inspections	weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Dispute over Asset Ownership and Land Restitution	Define asset ownership, determine land ownership documents, engage legal advocate and community land owners	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Site inspection reports	Number of site inspections	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Loss of Project-Provided Services such as health outreach, GBV awareness sessions, water	Encourage community members to use available government social services/ facilities	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Daily	Implement the Dike construction Site Organization Plan.	Number of site inspections	Monthly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Material transportation e.g. soils, sand	Cover truck load	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	daily	Site inspection reports	Weekly	Number of site inspections	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Soil erosion and Loss of topsoil due to access roads, quarry sites work areas and drainage system and dike construction/ activities	-Scheduling to avoid heavy rainfall periods (i.e., during the dry season) to the extent practical. -Contouring and minimizing length and steepness of slopes -Mulching to stabilize exposed areas. -Re-vegetating areas by replanting grass and or reforestation promptly. -Reducing or preventing off-site sediment transport through use of	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Daily	Chance Find Procedures in place	Weekly	Number of cultural items found	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
	settlement ponds, silt fences, and modifying or suspending activities during extreme rainfall and high winds to the extent practical.								
Premature breaking of dikes may escalate flash floods and especially reduce downstream vulnerability	Dike decommissioning should be well phased and timed after years when floods have diminished.	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Camp and dike construction site inspections	Number of site inspections	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Soil Instability may poor compaction, may compromise the entire barrier's integrity.	Ensure proper soil compaction at the bank of the river and hotspots of floods	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	daily	Site inspection reports	Number of site inspections	weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Seepage and Piping: Water may exploit new pathways through disturbed soil zones, accelerating internal erosion	Increase compaction along river banks, regulate water piping to licensed companies, conduct regular monitoring of water seepage	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Daily	Monitoring speed limit within town	Speed and dust observations	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Sediment Release: Removing a dyke especially in areas with heavy historical sedimentation can release trapped contaminated sediments into downstream waterways.	Sediment cleaning should be done to allow water flow, and prevent stagnation and floods	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Site inspection reports	Number of site inspections	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Channel Scouring/ surface cleaning: Altering the natural flow path by modifying the dyke can cause high-velocity water currents, leading to excessive riverbed scouring and river bank erosion	Avoid channel scouring to prevent surface river bank erosion	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Site inspection reports	Number of site inspections	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Contamination: Rivers may carry contaminated substances from upstream to downstream into the	Regulate upstream activities by preventing solid and liquid waste disposal into rivers	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Site inspection reports	Number of site inspections	weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
surrounding soil and watershed if drainage systems are not removed in a phased process.									
Vegetation Loss: Stripping the dyke of its vegetative cover during excavation increases the immediate susceptibility of the exposed earth to wind and water erosion.	Increase vegetative cover of river banks, maintain buffer zones from river banks	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Inspection	Inspection reports	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Heavy Machinery Hazards: Decommissioning requires	Enforce occupational health and safety measures	Government Ministry, Department or Agency and Partners	Daily/Weekly	Inspections, Documents review	Reports, meeting minutes	Weekly	Government of South Sudan, Contractors	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
heavy earth-moving equipment, introducing risks such as accidental structural collapse, noise, and worker exposure to hazards.		responsible for DRM infrastructure					and other Partners		
Loss of Protection Levels: Failing to model the post-decommissioning hydraulic landscape accurately can leave downstream properties with a significantly reduced level of flood protection	Maintain a buffer zone against all economic activities along river banks to protect landscape, prevent downstream vulnerability	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Prior to the commencement of material abstraction	Inspection s, Document review, Observations	Number of Incidents	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Permitting Violations: Conducting earthworks without statutory approval from environmental or water resource authorities can lead to legal and financial penalties.	Obtain deconstruction permit, environment certificate, wetland use permit	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	weekly	Document review, Inspections	Number of Incidents	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Stagnant waters: Open water spaces after removal of dykes and abandonment of borrow pits poses risks of falls, injuries, drowning and life threats.	Fence off the borrow pit and allow gates for community access, Provide docking points on open dike sections for community access for domestic uses	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Daily	Site inspection reports	Number of site inspections	Weekly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Vector borne diseases: Borrow pits may become vector breeding sites due to the water logging. Thus, endangering community health and safety from risks of disease spread.	Fence off the borrow pit and allow gates for community access, Provide docking points on open dike sections for community access for domestic uses	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Site inspection reports	Number of site inspections	Monthly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Impact on natural hydrology. Disruption of hydrology of natural waterways	Develop layout plan to limit hazard disruption of water channels	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Dike decommissioning Plan	Number of site inspections	Monthly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Risk to community health and	-Fence the quarry site to prevent	Government Ministry, Department or							County Authority

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
safety (ESS4) e.g. accidents at burrow pits,	people and livestock trespass.	Agency and Partners responsible for DRM infrastructure							Operational Budget
UXOs, and mines	-Installation of hazard warning signs. -Awareness raising initiatives. -Rehabilitate the burrow pit to the extent possible.	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly	Site inspection report	Number of site inspections	Monthly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget
Gender-Based Violence (GBV) and Sexual Exploitation and Abuse (SEA)	All employees to be inducted Education training and capacity building. Signing and adherence with an employee CoC mandatory Demand from all workers to abide by the	Government Ministry, Department or Agency and Partners responsible for health, GBV/SEA referrals	Weekly	Site inspection report	Number of cases reported	Monthly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
	Protection at work measures. Daily Safety talks								
Communicable diseases	-Providing surveillance and active screening and treatment of workers. -Preventing illness among workers in local communities by: - Undertaking health awareness and education initiatives, for example, by implementing an information strategy to reinforce person-to-person counselling	Government Ministry, Department or Agency and Partners responsible for health surveillance	Weekly, monthly	Site inspection report	Number of sites listed for decommissioning, infection cases	Monthly	Government of South Sudan, Contractors and other Partners	Monthly	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
Community health and safety risk related to Pools of water act as breeding grounds for disease and illness(mosquitoes)	-Prevention of larval and adult propagation through sanitation improvements and elimination of breeding habitats close to human settlements. -Elimination of unusable impounded water. - Increase in water velocity in natural and artificial channels. - Considering the application of residual insecticide to dormitory walls. - Implementation of integrated vector control programs. - Promoting use of repellents, clothing, netting, and other	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Monthly	Inspection reports	Number of sites with water logging, incidents of infections	weekly , monthly	PDC DRMC, Health Department	TBD	County Authority Operational Budget

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
	barriers to prevent insect bites. - Use of chemoprophylaxis drugs by non-immune workers and collaborating with public health officials to help eradicate disease reservoirs. -Monitoring and treatment of circulating and migrating populations to prevent disease reservoir spread.								
Labour risks of injuries. Workers may raise their concerns (safety, discontent, maltreatment or else) through	-Provide PPEs; Install warning signs at the dike construction site; adopt a dike construction management plan.	Government Ministry, Department or Agency and Partners responsible for DRM infrastructure	Weekly, monthly	HSE inspection reports, GRM reports	Number of employees and PPEs in proper use, Number of cases reported,	Daily Monthly		TBD	

Potential risk and Impacts	Mitigation measures	Responsible body	Timeframe	Method of Monitoring	Monitoring indicator	Monitoring frequency	Responsible body for monitoring	Timeframe for monitoring	Budget Estimates
DEMOBILIZATION AND DECOMMISSION PHASE.									
the Grievance Mechanism	-Establishment of a worker specific grievance redress mechanism for project workers. -The project worker is entitled to give suggestions,				addressed or pending				

CHAPTER 9

EMERGENCY PREPAREDNESS AND RESPONSE PLAN

This section provides a summary of key steps that the project team can follow in the event of an emergency. The hazard/aspect impact identification and assessment process for all ECRP II operations has identified various emergency situations that can arise in the process of implementing sub-projects in Pibor Greater Pibor Administrative Area. This therefore calls for a plan to be put in place in preparation for such a contingency. The following are some broad guidelines when dealing with emergencies: -

- Speed and knowing what to do, are the main points when discovering an emergency.
- Effective communication in cases of emergencies is very important as it saves time and life.
- All persons must be aware of their responsibilities and duties when an emergency arises.
- Regular drills should be conducted to ensure that all key players adapt to the response in cases of real emergency.
- Emergency Co-coordinators, team members and all employees must be trained and familiarised with all the contents of this document including their duties. This will enable them to respond appropriately whenever an emergency arises.

Planning Coordination:
Procedures should be prepared for:
o Informing the public and emergency response agencies.
o Documenting first aid and emergency medical treatment.
o Taking emergency response actions.
o Reviewing and updating the emergency response plan to reflect changes and ensuring that employees are informed of such changes.

Emergency Equipment: Procedures should be prepared for using, inspecting, testing, and maintaining the emergency response equipment.
Training: Employees and contractors should be trained on emergency response procedures.

9.0 HOW TO RESPOND TO AN EMERGENCY SITUATION:

- **ESTABLISH:**
  - The nature, type and magnitude of the emergency

- **CALL:**
  - For help by contacting the Emergency call centre (Security).
  - The departmental emergency coordinator.
  - The Site HSE Personnel

- IOM NOO

- **INVESTIGATE:**
  - Extent of emergency and establish the affected person's location.
  - Get the relevant information and inform the IOM NOO, IOM Safeguarding Officer and ECRP II program coordinator.

- **ASSIST:**
  - The injured or affected persons.

- **ASSEMBLE:**
  - At the designated Assembly Point, if safe to do so.

- **BRIEF:**
  - Emergency Coordinator of the sequence of events and follow instructions given when the Emergency Coordinator takes over.

- **EVALUATE:**
  - The need to systematically shut down operations.
  - Contain hazardous Substances or
  - Protect equipment as well as type of assistance required.

- **AWAIT:**
  - For instructions and response from the Emergency Coordinator.

- **REMAIN:**
  - At the assembly point until further instructions from an official

- **AWAIT:**
  - For declaration of **"ALL CLEAR"** notification

9.1. FIRE RELATED INCIDENTS

What constitutes fire?

- Fire on mobile equipment
- Fire on conveyor belt or other installations
- Fire from fuel pump/stations
- Fire from cooking activities
- Fire on electrical installations (cables, substations)
- Gas Cylinder Explosion

Person at scene to report to the designated onsite Emergency Coordinator

Actions by the Designated onsite Emergency Coordinator

For all emergency scenarios in this category

a) Stop all running machinery/equipment

For fires

b) Try to fight the fire if trained to do so and if safe to do so.
c) If not trained or fire gets out of hand, raise the alarm.

Designated on site Emergency Coordinator:

a) Call the firefighting team.
b) Evacuate employees to the Assembly point if it is safe to do so
c) Switch off all energy sources (electrical in affected area).
d) Conduct roll call.
e) Communicate with the Security, clinic, Fire Team, IOM ECRP II Local Staff clearly stating the nature and magnitude of the emergency, exact location and number of casualties if any.
f) IOM ECRP II Local staff to communicate to the NOO, Safeguarding officer and Project Manager
g) Call the Ambulance if necessary

9.1.1 Safeguarding Official:

a) Assess situation and act to assist as necessary
b) Arrange logistics for investigation and reporting in consultation with the safeguarding officer and the project manager.

9.2 MULTI-CASUALITY

What constitutes multiple casualties?

Accidents / incidents in which more than **one person** is injured to warrant evacuation from site of incident/ accident to a safe place of recovery e.g., Clinic. Multi casualty incidents/ accidents can be as a result of anything e.g., road Traffic accidents

Person at Scene report to IOM ECRP II National Operation Officer Immediately

Designated onsite Emergency Coordinator

For all emergency scenarios in this category

a. For Road traffic accidents, the person at scene reports the case to the Police and ECRP II National Operation Officer.
b. The National Operations officer has the obligation to report the incident following the ECRP II incident reporting system.
c. Raise the alarm.
d. Call Emergency number
e. Withdraw men from dangerous areas

f. Attend to injured and call for ambulance
g. Render First Aid.
h. Transport injured to the nearest approved medical facility.

9.3 FLOODING/ DIKE BREACH

This emergency action plan caters for floods and breach scenarios. Although monitoring measures (including closely following and monitoring current flood warning) have been put in place, a breach may occur due to multiple factors. This may lead to displacement of communities and death of livestock due to flooding.

Person(s) at Scene:

a) Move to safe higher ground
b) Inform the site supervisor and plant operator of the situation.
c) Inform IOM ECRP II Local Officers
d) Inform IOM ECRP II National Operations Officer
e) Warn unsuspecting public of the hazard.
f) Help casualties if any.

Designated onsite Emergency Coordinator

a) Inform the Greater Pibor Administrative Area Disaster Risk Management Committee (DRMC) to sound the emergency alarm/notification immediately
b) Designated onsite Emergency Coordinator to immediately inform the IOM National Operations Officer, Security focal points, Clinic and Safeguarding Assistants.
c) Designated onsite Emergency Coordinator to conduct a preliminary assessment of the magnitude of flood and breach.
d) Call for an ambulance and emergency services including Immediately notifying local emergency management officials, law enforcement, and relevant state agencies.
e) Confirm that the Project Manager, Head of Sub-office, safeguarding officer, Safety and Security staff, have been notified
f) Once on site, quickly assess the extent of the breach, the potential for further failure, and the areas at risk downstream. Based on the assessment, determine the appropriate emergency level (e.g., alert, warning, imminent failure) and communicate this to all relevant parties. Assess the situation and raise the following for assistance where Necessary:

- Ministry of Humanitarian Affairs and Disaster Management
- Fire Brigade
- Police
- Ministry of Health

g) Alert the public in the affected areas about the imminent danger and the need to evacuate. Confirm with the clinic for casualty arrangement.

h) Give instruction for inspections to be done by a team headed by a Senior Engineering Official before issuing emergency evacuation instructions. Initiate the evacuation of people in areas at risk of flooding or inundation. Ensure clear evacuation routes and designated rally points are in place and communicated to the public. Work closely with local emergency responders, including law enforcement, firefighters, and medical personnel.

9.4 HAZARDOUS SUBSTANCES SPILLAGE

This emergency action plan caters for incidents involving the accidental spillage of hazardous material at sub-projects sites. Hazardous substances can be defined as any substance that has the potential to cause irreversible harm or damage to human health and the environment. At ECRP II subprojects, common hazardous substances include flammable liquids (Petrol, Diesel), flammable gases e.g., LPG etc. In the event of a spillage or an accidental discharge, the following steps should be taken at ECRP II sites:

Person on site

a) Inform the site supervisor and plant operator of the situation.
b) Inform IOM ECRP II Local Officers
c) Inform IOM ECRP II National Operations Officer
d) Warn unsuspecting public of the hazard.

Designated onsite Emergency Coordinator

a) Determine what substance that has been involved in the spillages by asking what type of container the substances were in; and labels on the containers
b) Determine the extent of the spillage
c) Gather resources for attending to the spillage with the inclusion of: Adequate PPE for the complete team attending the spillage; Materials and resources to stop leaks such as wood plugs, self-adhesives, Material to store contaminated soil, clothing, materials, etc.
d) Upon approaching the spillage site, determine the wind direction. Approach the spillage scene from upwind as best as possible.
e) Assess the actual type, quality and quantity of the spilled substance, the location and area of the affected site
f) Determine evacuation distances using the ER Guidebook provided
g) Secure the area;
h) Place labels and warning signs on the scene of the spillage to alert the public and other staff members
i) Demarcate scene in Hot, Warm and Cold Zones as guided by the ER Guidebook provided
j) If necessary, evacuate people [Remember the priorities: Save life-Save property-Save the environment]
k) If safe to do so, contain the spillage in one area. Stop leaks if any.
l) Assess the impacts that the spillage has already caused or will cause to the environment
m) Alert the users of the receiving environments of the dangers associated with the spillage.

ECRP II National Operations Office

a) Cause the clean-up operations to be done according to best available clean-up methods to the satisfaction of the relevant authorities following the guidance provided in the safety data sheet as read with the ER Guidebook)
b) Call for an ambulance and emergency services
c) Confirm that the Project Manager, Head of Sub-office, safeguarding officer, Safety and Security staff, have been notified
d) Once on site, assess the situation and raise the following for assistance where Necessary:
    - Ministry of Humanitarian Affairs and Disaster Management
    - Fire Brigade
    - Police
    - Ministry of Health
e) Give instruction for inspections to be done by a team headed by a Senior Engineering Official before issuing emergency evacuation instructions.

CHAPTER 10

TRAINING, AWARENESS RAISING & CAPACITY BUILDING

The project recognises the capacity gaps that exist in South Sudan when it comes to the management of Environmental and Social Safeguarding issues. In a bid to ensure the sustainable implementation of the proposed subprojects will focus on providing capacity building training for workers and communities to ensure effective implementation of this G-ESMP. A summary of the trainings that will be considered are presented in the table below.

Table 7. Targeted trainings for the effective implementation of the G-ESMP

OBJECTIVES	ISSUES FOR ENGAGEMENT	METHOD OF ENGAGEMENT	STAKEHOLDERS/TARGET POPULATION AND AREA	RESPONSIBLE PERSON	TIME FRAME	BUDGET IN USD
Enhance awareness and knowledge about GRM and OHS risk with its prevention measures.	GRM	Training, Plenary discussion with questions and answer	Beneficiaries, Contractors, PDCs, BDCs, PDRMC, Contractor workers, community leaders	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants COAs	Weekly	5000
ES induction training	ES Safeguarding issues	Training	All project workers as defined under ESS2	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants NOOs, Senior Engineers, Site Engineers	Ongoing for all new staff	Included in staff costs
Ensure compliance to implementation of G-ESMP	Environmental and Social Risks Management	Training, Focus group discussions,	Beneficiaries, Contractors	ES Safeguarding Officer, Gender GBV	Monthly	5000

OBJECTIVES	ISSUES FOR ENGAGEMENT	METHOD OF ENGAGEMENT	STAKEHOLDERS/TARGET POPULATION AND AREA	RESPONSIBLE PERSON	TIME FRAME	BUDGET IN USD
and Safeguarding requirements		site visits and interviews		Officer, Safeguarding Assistants COAs		
Subproject Environmental and Social screening	E&S Screening	Training, On the job training	ECRP II Staff	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants COAs	Prior to commencement of sub-projects	Included in staff costs
Stakeholder engagement	SEP	Workshop	ECRP II Staff, Contractors	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants	Prior to commencement of sub-projects	4,000
GBV Action Plan	GBV risks	Meetings	Beneficiaries, communities, contractors, subcontractors, primary suppliers, workers	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants COAs	Prior to commencement of sub-projects	10,000 USD
LMP	Labour risks	Meetings	Contractors, subcontractors, primary suppliers, workers	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants	Prior to commencement of sub-projects	Included in staff costs

OBJECTIVES	ISSUES FOR ENGAGEMENT	METHOD OF ENGAGEMENT	STAKEHOLDERS/TARGET POPULATION AND AREA	RESPONSIBLE PERSON	TIME FRAME	BUDGET IN USD
Emergency preparedness and response	EPP	Meetings	Contractors, subcontractors, primary suppliers, workers	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants	Prior to commencement of sub-projects	2500 USD
Implementation, monitoring and reporting of G-ESMPs	E&S risk mitigation	Workshop	Contractors, subcontractors, primary suppliers, workers	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants COAs	Prior to commencement of sub-projects	Included with other training costs
Provision of a safe working environment and management of OHS risks	OHS risk management	Training, FGDs, site visits, inspections and interviews	Beneficiaries, contractor staff	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants COAs	prior to dike construction works	2500 USD
OHS risk management	OHS training	Training, FGDs, site visits, inspections and interviews	Contractors, subcontractors, primary suppliers, workers	ES Safeguarding Officer, Gender GBV Officer, Safeguarding Assistants COAs	Prior to commencement of sub-projects	Included with other training costs
Safety, security and conflict sensitivity	Conflict sensitivity and insecurity	Training and practical drills	Contractors, subcontractors, primary suppliers, workers and staff	ES Safeguarding Officer, Gender GBV Officer, Safeguarding	Prior to commencement of sub-projects	Included with other training costs

OBJECTIVES	ISSUES FOR ENGAGEMENT	METHOD OF ENGAGEMENT	STAKEHOLDERS/TARGET POPULATION AND AREA	RESPONSIBLE PERSON	TIME FRAME	BUDGET IN USD
				Assistants COAs		

CHAPTER 11

INSTITUTIONAL ARRANGEMENTS

The successful implementation of this G-ESMP depends on the commitment and capacity of various institutions and stakeholders to implement the G-ESMP effectively. Thus, the institutional arrangements as well as the roles and responsibilities of the institutions and persons that will be involved in the implementation, monitoring and review of this G-ESMP are discussed in the Table 10 below.

Table 8. Table Institutional arrangement for the Implementation of the G-ESMP

INSTITUTION	ROLES AND RESPONSIBILITIES
World Bank	▪ Overall supervision and provision of technical support and guidance. ▪ Recommend additional measures for strengthening the management framework and implementation performance. ▪ Review and clear the application and recommendations of sub- project G-ESMPs. ▪ Process and release funds requested by MoFP/PMU for timely execution of the project
MoFP/PMU	▪ Lead national and state level stakeholder engagement and coordination, including disclosing all essential project information to relevant actors in a timely manner. ▪ Review all G-ESMPs documents prepared by THE ECRP II project and ensure adequacy under the World Bank Safeguard policies. ▪ Ensure that the project design and specifications adequately reflect the recommendations of the G-ESMPs. ▪ Coordinate application, follow up processing and obtain requisite clearances required for the project, if required. ▪ Prepare compliance reports with statutory requirements. ▪ Develop, organize and deliver training program for the project staff, the contractors and others involved in the project implementation, in collaboration with IOM ▪ Review and approve the Contractor's Implementation Plan for the environmental measures, as per the ESMF. ▪ Liaise with the Contractors and the IOM team on the implementation of the G-ESMPs; ▪ Liaise with various National government and State Government agencies on environmental and other regulatory matters. ▪ Continuously interact with the NGOs and community groups that would be involved in the project. ▪ Review the performance of the project through an assessment of the periodic environmental and social monitoring reports. ▪ Provide a summary of the same to the Project Manager, and initiate necessary follow-up actions;

INSTITUTION	ROLES AND RESPONSIBILITIES
	▪ Monitor and evaluate implementation of the G-ESMP and the sub-projects in close coordination with IOM, contractors and local authorities ▪ Review and authorize release of funds for timely execution of the project by IOM and contractors.
IOM	▪ Management, implementation, monitoring, and compliance of the G-ESMP, and any approval conditions, including dike construction supervision and performance of project staff, contractors and subcontractors. ▪ Review of G-ESMP performance and implementation of correction actions ▪ Stop work procedures, in the event of breaches of G-ESMP conditions that may lead to serious impacts on local communities, or affect the reputation of the Project ▪ Ensure effective communication and dissemination of the content and requirements of the G-ESMP to contractors and subcontractors. ▪ Assisting the contractor with implementation of G-ESMP sub-plans. ▪ Monitoring of G-ESMP performance ▪ Ensuring compliance to all Project social commitments, including implementation of the social management plans ▪ Report environmental performance of the Project directly to PMU. ▪ Prepare environmental reports summarizing Project activities, as required, ▪ Representing the Project at community meetings ▪ Ensuring effective community liaison and fulfilling commitments to facilitate public consultation throughout the Project cycle. ▪ Establish dialogue with the affected communities and ensure that the environmental and social concerns and suggestions are incorporated and implemented in the project;
Contractors	▪ Contractors should ensure that all their personnel or subcontractor's personnel has received proper induction. ▪ Awareness arising as necessary of G-ESMP, health and safety management practices, and are aware of relevant site rules. ▪ Keep the health and safety records of their subcontractors or partners in a joint venture and keep those records available for IOM inspection at any time. ▪ Contractors will include environmental and social requirements in the procurement and contracting process including bidding documents, for potential civil works. ▪ Relevant requirements are included in contracts and subcontracts consistent with the requirements of Environment and Social Standards (ESSs); codes of conduct are required for contractors, subcontractors, primary suppliers, and their workers. ▪ Contractor will prepare a detailed construction (C-ESMP) that is costed, with sufficient budget to mitigate E&S risks ▪ Contractor's commitment and compliance will be monitored in accordance to ESSs ▪ Contractor will be trained by IOM on grievance redress mechanisms and their subcontractors are expected to do the same to the affected communities and

INSTITUTION	ROLES AND RESPONSIBILITIES
	other stakeholders. ▪ The contractor will develop a grievance mechanism to handle concerns of their employees. ▪ Conducting weekly HSSE Inspection and submitting the reports to IOM Site Engineer ▪ Contractors will provide Monthly and quarterly details on contractor's oversight on environmental, social, health and safety (ESHS) performance. ▪ The contractor shall have a Labour Management Plan (LMP), which conforms to the requirements of the LMP and Environmental Social Standards 2. ESS2 ▪ The contractor's EHS Officer to conduct quarterly age verification audits of the workforce and report results to IOM as part of monthly reporting
IOM Field Engineer	▪ Supervision of contractor performance of implementation of the Construction ▪ Reporting any incidents or non-compliance with the G-ESMP to the HSSE Team ▪ Conducting weekly HSSE inspection at the sites and Submitting reports to HSSE Team ▪ Making recommendations to the HSSE Team regarding G-ESMP performance as part of an overall commitment to continuous improvement
General Public	▪ Identify environmental and social issues that could derail the project and support project impacts and mitigation measures. ▪ Assist in awareness campaigns

11.1 G-ESMP Implementing schedule.

The implementation of the G-ESMP will be done throughout the project Life Cycle.

Table 9. G-ESMP Implementing schedule.

S/N	ACTIVITY	RESPONSIBILITY	SUB PROJECT IMPLEMENTATION		
Environment and Social Management			M1	M2	M3
	Formal Disclosure of G-ESMP	PMU &IOM			
	Develop Environmental/Social Requirements in Bid Documents for contractors	PMU & IOM			
	Training of engineers and Contractors on the G-ESMP	IOM			
	Implementation of Environmental and Social Mitigation Measures	IOM			
	Supervision of works	IOM & PMU			
	Supervision of G-ESMP Implementation	IOM & PMU			
	Environmental and Social Monitoring and Auditing	IOM & PMU			
	Reporting on G-ESMP Implementation	IOM & PMU			

11.2 Proposed budget for G-ESMP implementation

The total cost for implementing this G-ESMP is estimated to be USD 70,000.

The table below breaks down the budget estimate and the responsibility for implementation of the G-ESMP.

Table 10. Proposed budget for G-ESMP implementation

S/N	ITEM	RESPONSIBILITY	COST ESTIMATE (USD)
1	Implementation of Mitigation measures	IOM, Contractor, and PMU	30,000.00
2	Audits & Inspections and compliance Monitoring	IOM & PMU	20,000.00
3	Capacity Building, training and awareness raising	IOM & PMU	20,000.00
Total			**70,000.00**

Reporting

Reports shall be produced through the course of implementation of monitoring programs, collecting incident/grievances forms, consulting with local communities and auditing performance of existing programs/mitigation measures within the G-ESMP.

Table 11.Types of reports required.

RESPONSIBILITY	TYPE OF REPORT	PURPOSE/DETAILS OF REPORTING	FREQUENCY OF SUBMISSION	SUBMIT TO:
Contractor	Accidents/Incident Report	Filing/notification of accidents or unplanned events	Within 24 hours of the incident	IOM Safeguards Assistant/IOM safeguards officer
	Weekly Site Inspection Report	Report of compliance and noncompliance issues / measures	Weekly	IOM Safeguards Assistant/IOM safeguards officer
IOM Site Engineer	Accidents/Incident Report	Filing/notification of accidents or unplanned events	Within 24 hours of the incident	IOM Safeguards Assistant/IOM safeguards officer

RESPONSIBILITY	TYPE OF REPORT	PURPOSE/DETAILS OF REPORTING	FREQUENCY OF SUBMISSION	SUBMIT TO:
	Site Inspection Report	Report of compliance and noncompliance issues / measures	Weekly	IOM Safeguards Assistant/IOM safeguards officer
IOM Safeguarding Team	Incident Investigation/ Review report	Detail the cause, nature and effect of any environmental and/or social incident	Not more than 5 days from occurrence	PMU
IOM Safeguarding Team	Monthly Compliance Report	Monthly report of compliance before the 5th of every new month	Monthly	PMU
PMU	Quarterly Compliance Report	Quarterly report of compliance to G-ESMP	Quarterly	World Bank

11.3 G-ESMP Disclosure

The G-ESMP shall be disclosed by the MoFP/PMU on its website and by IOM at the project site following the review and clearance by the World Bank.

Table 12. G-ESMP Disclosure

ACTIVITY	RESPONSIBILITY
Disclosure of the G-ESMP at the National Level on the Public notice boards	PMU will liaise with IO M and the relevant government authorities
Disclosure of the G-ESMP at the State level on the public notice boards	PMU will liaise with IOM and the relevant government authorities
Disclosure of the G-ESMP at the Greater Pibor Administrative Area and Payam level on the public notice boards	PMU will liaise with IOM and the relevant government authorities
Disclosure of the G-ESMP at the project community	PMU will liaise with IOM and the relevant government authorities

CHAPTER 12

SUMMARY CONCLUSION AND RECOMMENDATION

12.1 Conclusion

This Environmental and Social Management Plan provides the path for sustainable project implementation and management of environmental and social risks. The plan provides strategies and activities that need to be implemented to mitigate the negative impacts and enhance the positive impacts. Implementation timelines, responsibilities and cost estimates are also provided. The successful implementation of this G-ESMP is dependent on the diligence of all the stakeholders in the implementation of the provisions of this G-ESMP and associated systems and documents.

The major impacts that have been identified include employment creation, occupational health and safety risks, spread of infectious diseases, public health and safety risks, environmental (air, water and land) pollution, waste management issues, disturbance of flora and fauna habitats and disruption of ecosystem services. Most of the impacts will be temporary and short-lived except for the unavoidable release of GHGs from the fuel combustion. The hierarchy of mitigation informed mitigation measures that have been proposed in this G-ESMP.

At all stages of the sub-projects' implementation, the hierarchy of controls should be used to ensure a safe working environment and the sound management of occupational hazards and risks. As discussed in this G-ESMP, this will include taking steps to eliminate risks and when this is impossible, other measures will be used. For instance, engineering controls will be used in situations when the hazard cannot be eliminated, and this can be coupled with the use of administrative controls. In worst case scenarios, the provision of adequate PPE will be opted for to ensure employees are protected from the hazard.

All the identified stakeholders were in support of the proposed sub-projects. The raised issues, which included the need to ensure compliance with legal requirements in terms of national laws. Comments were also submitted stating that the sub-projects will contribute to key infrastructure and are needed to improve the livelihoods of communities in targeted areas. The identified socioeconomic benefits exceed costs of the anticipated negative impacts such that the affected communities are predicted to become economically and socially better off with the proposed sub-projects than without. The project should ensure the involvement of local communities in all decisions and implementation of plans for management of floods in Pibor Greater Pibor Administrative Area.

12.2 Recommendation

It is recommended that contractors and all the stakeholders mentioned in the G-ESMP implement the recommendations in the environmental and social management plan with all due diligence. This is to ensure that the identified environmental and social risks are well managed and that accidents are prevented during sub-projects implementation. The Proponent is expected to comply with the relevant national legal and policy requirements regarding project implementation. During the operation of the flood protection facilities, environmental and social regulations must be strictly adhered to. The performance of the sub-projects will also be monitored against the recommended mitigation measures to ensure sustainability.

ANNEXES

ANNEX 1: ENVIRONMENTAL AND SOCIAL REQUIREMENTS FOR CONTRACTOR/S

General Conditions

The Contractor shall Implement all activities under this contract in compliance with the requirements of the World Bank Environmental & Social Framework and the applicable laws of South Sudan in line with the ECRP II Environmental and Social Management Framework (ESMF) together with associated specific Environmental and Social (ES) risk management tools that may have been developed by THE ECRP II project. All contractors engaged on the project operate in a manner consistent with the requirements of the environmental and social standards (ESSs), including the specific requirements set out in the Environmental and Social Commitment Plan (ESCP). To achieve this, the Contractor shall:

a) Incorporate the requirements of ESMF and all other relevant E&S instruments in the bid document.
b) Adopt the sub-projects G-ESMPs and where necessary develop Dike Construction Environmental and Social Management Plans (C-ESMPs) to help manage dike construction risks.
c) Make sure that the C-ESMP should get approval from IOM before commencing the project.
d) Implement, and review site specific Contractor - Environmental and Social Management Plans (C-ESMPs) as required by the ESMF and specifically the Labour Management Procedures (LMP) including, OHS plans, labour recruitment plans, code of conduct (CoC) for employees, waste management plan, emergency plan, protection of biodiversity, land clearing and erosion control, traffic management, noise and dust control, and labour influx, communicable diseases and others. The contractor's EHS Officer to conduct quarterly safety audits including age verification ~~audits~~ of the workforce and report results to IOM as part of monthly reporting
e) Pre-screening of workers against specified diseases as specified by the Health Ministry from time to time.
f)
g) Submit a recruitment plan containing the number of staffs required, intended working conditions, Intended locations of staff, and Job specifications in terms of qualification and experience to PMU/IOM for review and approval.
h) Publishes the job invitation in the appropriate media (local press or direct invitation for contracted workers, or word of mouth through local leaders for community workers) to ensure all potential candidates have access to the information, including women and persons with disabilities.
i) Employ qualified E&S personnel to oversee E&S performance, and that Contractor staffing, and resources are commensurate with the magnitude and timing of work and potential E&S risks.

Ensure all workers have signed a Code of Conduct (see annex 3 of ESMF), including PSEA/SH framework

clear referral and reporting pathways, to ensure accountability and effective prevention and response in line with ESS2 and ESS4

j) Prepare E&S training programs for workers and for communities if necessary.

k) Ensure the employees are aware of E&S commitments and their responsibilities, which include key Job Specifications, terms and Conditions of Employment, special Codes of Conduct, disciplinary Procedures, workers' Grievance Mechanism, freedom to join and participate fully in workers association activities, key E&S aspects of the ECRP-II ESMF and other E&S instruments, and emergency Preparedness before work commencement.
l) Workers' GRM system must be separate from the Community GRM, accessible and anonymous where anonymity is preferred. The Contractor should exhibit that the Workers GRM upholds the GRM principles of the G-ESMP.
m) Adopt and implement the national, regional, and international best practices on Safety, Health, Environment, and Social risk management.
n) Ensure the provision of Safety, Health, Environment, and Social risk information to employees, communities, and all relevant stakeholders.
o) Focus on compliance with all applicable safety, health, environmental and Social Multilateral Agreements, policies, national laws, regulations, and Codes of practice applicable to the activities being implemented.

Ensure that substantial resources are allocated for the prevention of accidents, injuries, and fatalities in all areas of operation including the provision of a safe working environment for all.

o) Promote sustainable consumption and utilization of natural resources focusing on the prevention of environmental pollution, and environmental degradation. n) report E&S performance timely (on at least a monthly basis throughout the dike construction phase, including mobilization, construction, and demobilization), including investigating and resolving all complaints, issues, incidents, accidents, and non-conformities. o) Participate in a regular weekly meeting with IOM to evaluate E&S performance-monitoring results and to improve its performance.

p) Establish, maintain, and update relevant environmental and social risk management registers as required by IOM.
q) Conform to the requirements and provisions of the World Bank Environmental and Social Framework (ESF) as read with the applicable Environmental, Health and Safety Guidelines (EHSG).
r) Monitor and keep records on E&S performance following the E&S management plans. This may include monitoring of E&S matters, scheduled and unscheduled inspections to work locations, observations made during routine activities, desk reviews, drills, and any other monitoring protocols implemented by the Contractor to ensure E&S compliance.

Failure to comply with the Environmental and Social Safeguarding requirements shall constitute a violation of contractual provisions and may lead to the cancelation of the contract. IOM may recover any unanticipated costs from any funds withheld in terms of the contract to remedy any environmental and social residual risks that shall be attributed to the Contractor's activities. Generally, the Contractor s shall take corrective action(s) for major noncompliance, including to the LMP implementation. The following are some of the major noncompliance that Contractors need to take note of:

- Failure to submit mandatory quarterly progress report.

- Failure to avail for inspection specified documentation pertaining to the implementation of the G-ESMP, C- ESMP and LMP.
- Failure to timely notify and submit incident and accident investigation report.
- Failure to appoint or replace a competent and experienced EHS officer.
- Failing to enforce C-ESMPs including provision of adequate appropriate PPE.
- Recruitment of nontechnical staff from outside the local community.

1. Specific Conditions

2.1 Application National Policies and Laws

The policy, legal and administrative framework provides guidance and provisions for the protection and conservation of the environment, employees and the communities. Contractors must comply with the Transitional Constitution of South Sudan (2011), the Environment Policy of South Sudan (2015-2025), The Draft Land Policy (2016), Forestry Policy (2019), the Land Act (2009), and the National Labour Act.

2.2 The World Bank Environmental and Social Framework (ESF) and relevant Environmental and Social Standards (ESSs).

2.2.1 ESS 1: Assessment and Management of Environmental and Social Risks and Impact

In line with the management of environmental and social risks, the Contractor shall:

a) identify, evaluate, and manage the environment and social risks and impacts of the sub-projects in a manner consistent with the requirements of the World Bank ESF and relevant legislation of South Sudan.
b) adopt a mitigation hierarchy approach to: (a) Anticipate and avoid risks and impacts; (b) Where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels; (c) Once risks and impacts have been minimized or reduced, mitigate; and (d) Where significant residual impacts remain, compensate for or offset them, where technically and financially feasible.
c) adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the sub-projects.
d) Utilize national environmental and social institutions, systems, laws, regulations, and procedures in the assessment, development, and implementation of projects, whenever appropriate.

The Contractor is required to take a risk-based approach when undertaking any activities under this contract. They are required to assess, manage, and monitor environmental and social risks and impacts associated with each stage of the sub-projects implementation to achieve environmental and social outcomes consistent with the Environmental and Social Standards (ESSs) set out in the WB ESF and the relevant national legislation of South Sudan. The Contractor is obliged to maintain documented

information and records as evidence of maintaining a robust system for the management of ES risks. Such documents shall include but may not be limited to:

- *ECRP/ESS-P003 Contractor Management Plan (CMP)*
- *ECRP/ESS-P004 Waste Management Plan*
- *ECRP/ESS-P005 Site emergency and response plan*
- *ECRP/ESS-P006 Emergency phone numbers*
- *ECRP/ESS-RPT03 Daily Safety Talks*
- *ECRP/ESS-PR01 Accident & Incident Reporting procedure*
- *ECRP/ESS-PR02 Accident & Incident Investigation procedure*

2.2.2 ESS 2: Labour and Working Conditions

For all works to be undertaken by the Contractor and/or their sub-contractor s including any other third parties, the following labour and working conditions shall apply:

a) Promotion of safe and healthy working environment at all ECRP II sub-projects Contractor managed sites including all Contractor work stations and offices.
b) Promotion of fair treatment, non-discrimination, and equal opportunity for all workers.
c) Protection of workers, including vulnerable workers such as women, persons with disabilities, children (of working age, following the requirements of IOM, World Bank and the Government of South Sudan Ministry of Finance and Planning PMU[3]) and migrant workers, contracted workers, community workers, and primary supply workers, as appropriate.
d) Prevention of the use of all forms of forced labour and child labour.
e) Supporting the principles of freedom of association and collective bargaining of workers in a manner consistent with the Laws of South Sudan.
a) Provide workers with accessible means to raise workplace concerns, issues, and grievances and be fully aware of and be ready to implement the Workers' Grievance Redress Mechanism.

Furthermore, for managing the OHS issues, the Contractor shall:

1. Develop and maintain an OHS management system that is consistent with the scope of work, duration of contract and IFC General Environmental Health and Safety Guidelines (EHSGs) on Occupational Health and Safety.
2. Appoint an appropriately qualified and experienced OHS/Environmental Officer whose responsibilities are to advise the employer on OHS related issues.
3. Prepare task specific risk assessment (TRA) and safe working procedures (SWP) for executing works.
4. Provide preventive and protective measures, including modification, substitution or elimination of hazardous conditions or substances informed by TRA and SWP.

[3] The more stringent requirement shall apply.

5. Provides for appropriate training/induction of project workers and maintenance of training records on occupational health and safety subjects including TRA and SWP.
6. Documents and reports on occupational accidents, diseases and incidents.
7. Provides emergency prevention and preparedness and response arrangements to emergency situations including and not limited to: workplace accidents; workplace illnesses; flooding; fire outbreak; disease outbreak; labour unrest and security.
8. Comply with all requirements of applicable occupational Health and Safety legislation and Environmental legislation including WB EHS guidelines.
9. Maintain all such records for activities related to the safety, health and environmental management for inspection by the PMU or the World Bank.
10. Verification of the soundness of the Contractor 's implementation of the requirements of the LMP by IOM and the PMU.
11. Provide a fully equipped first aid kit.
12. Mainstream HIV issues in the workplace by providing HIV prevention training during induction and continuously during employment through health and safety talks.

The Contractor should recognize the importance of employment creation and income generation in the pursuit of poverty reduction and inclusive economic growth. They should promote sound worker-management relationships and enhance the development benefits of a sub project by treating workers in the project fairly and providing safe and healthy working conditions. The Contractor is obliged to maintain documented information and records as evidence of maintaining a sound OHS system:

- *ECRP/ESS-R003 HSSE Training and Induction register*
- *ECRP/ESS-R004 GRM Register*
- *ECRP/ESS-R006 Accident, Incident, near misses Register.*
- *ECRP/ESS-R007 Meeting Attendance Register*
- *ECRP/ESS-R011 Emergency drill and simulation register*
- *ECRP/ESS-F001 Accident, Incident, near misses Report Form*
- *ECRP/ESS-F002 Pre-Task Risk Assessment Form*
- *ECRP/ESS-PTW001 Working at Heights permit.*
- *ECRP/ESS-PTW002 Working in cornified spaces permit.*
- *ECRP/ESS-PTW003 Excavation permit*
- *ECRP/ESS-PTW004 Lifting permit.*
- *ECRP/ESS-PTW005 Hot works permit*
- *ECRP/ESS-G004 Occupational Safety and Health Guidelines*

2.2.3 ESS3: Resource Efficiency and Pollution Prevention and Management

The Contractor shall:

a) promote the sustainable use of resources, including energy, water, and raw materials.
b) avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from sub-projects activities.
c) avoid or minimize sub-projects-related emissions of short and long-lived climate pollutants.

d) avoid or minimize generation of hazardous and non-hazardous waste.
e) minimize and manage the risk and impacts associated with pesticide use.

The Contractor should recognize that sub-projects activities often generate pollution of air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment. Thus, they are required to address resource efficiency and pollution prevention and management throughout the sub-project's life cycle. The Contractor is obliged to maintain a system and keep documented information and records as evidence. Such records shall include:

- *ECRP/ESS-R001 Licenses, Permits and Authorizations Register*
- *ECRP/ESS-P006 Site Plans (these shall include areas for the abstraction of pits and, river sand, quarry sites and any materials that shall be required for the implementation of sub-projects sites)*
- *ECRP/ESS-R014 Materials abstraction register*

2.2.4 ESS 4: Community Health and Safety

The Contractor shall:

a) anticipate and avoid adverse impacts on the health and safety of sub-projects-affected communities during the project life cycle from both routine and non-routine circumstances.
b) avoid or minimize community exposure to sub-projects-related traffic and road safety risks, diseases, and hazardous materials.
c) have in place effective measures to address emergency events.
d) ensure that the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.
e) Contractor shall ensure that all non-technical work is reserved for locals (identifiable with the host community and witnessed by host community leadership).
f) Beneficiary selection and employment recruitment should verify the authenticity of the localness of potential employees.
g) g) Contractor liaises with local leadership on enrolment for community workers while at the same time ensuring that no grievances derive from nepotism via utmost transparency in the selection process, announcing hiring campaigns early enough in community consultations and/or other outreach activities.
h) Where there are camp establishments, Contractor shall ensure camp management and community relations are good. If labour camps are required, special management plans need to be developed, or if smaller establishments, camp management reflected in the G-ESMP.
    - Security within camp
    - Social relations with community members should be cordial and consistent with GBV and SEA
    - Waste management
    - Water and sanitation
    - Proper camp demobilization
i) Establish a code of conduct for contract workers interaction with the host community. This may include:

- Access to camp by children, non-employed girls and women
- Appropriate language
- Time restrictions where required
- GBV/SEA

j) Good conduct if small numbers of workers are accommodated in communities rather than camps (requirements on when to establish a camp shall be included in the POM)

k) Contractor shall ensure that local supply shall not negatively impact the availability of resources for the local communities and sourcing of local wildlife shall be prohibited.

Sub-projects are implemented within communities and Contractors should address the health, safety, and security risks and impacts on project-affected communities. Focus should be put on avoiding or minimizing such risks and impacts, with particular attention to people who, because of their circumstances, may be vulnerable. The Contractor shall maintain clear records of stakeholder engagement and shall erect safety signage and/or barricades to alert communities of perceived risks. *ECRP/ESS-R002 Stakeholder engagement minutes shall be kept at site offices as a record of engagement of communities regarding community safety and health.*

2.2.5 ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

The Contractor shall:

a) avoid an activity that may lead to involuntary resettlement.
b) shall ensure that the sub-projects implemented have land donation forms and land has been voluntarily given for the purposes of the sub-projects.

The Contractor is obliged to maintain a system that documents information and records all land issues as evidence: The following documents shall be kept:

- *ECRP/ESS-F005 Land donation forms*
- *ECRP/ESS-R002Stakeholder engagement minutes*

2.2.6 ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

Protecting and conserving biodiversity and sustainably managing living natural resources are fundamental to sustainable development. Thus, the Contractor should strive to recognize the importance of maintaining core ecological functions of habitat within their area of operation. They should also ensure sustainable management of primary production and harvesting of living natural resources and recognize the need to consider the livelihood of project-affected parties, including Indigenous Peoples, whose access to, or use of, biodiversity or living natural resources may be affected by a sub-project. The Contractor is obliged to establish and maintain documented information and records as evidence as follows:

- *ECRP/ESS-R001 Licenses, Permits and Authorizations Register*
- *ECRP/ESS-P006 Site Plans (these shall include areas for the abstraction of pits and, river sand, quarry sites and any materials that shall be required for the implementation of sub-projects sites)*
- *ECRP/ESS-R014Materials abstraction register (The register should capture the quantity of materials used for each sub-project site and this includes Pit sand, River sand and Water)*

- *Preservation of nationally protected and/or globally threatened species*

2.2.7 ESS 7 - Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities.

This ESS applies to distinct social and cultural groups.

a) To ensure that the development process fosters full respect for the human rights, dignity, aspirations, identity, culture, and natural resource-based livelihoods of Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities.
b) To avoid adverse impacts of projects on Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities, or when avoidance is not possible, to minimize, mitigate and/or compensate for such impacts.
c) To promote sustainable development benefits and opportunities for Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities in a manner that is accessible, culturally appropriate and inclusive.
d) Enhance opportunities for Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities to participate in, and benefit from, the development process in ways that do not threaten their unique cultural identities and well-being. The Contractor is obliged to keep the following records:

- *ECRP/ESS-P002 Stakeholder Engagement Plan (SEP)*
- *ECRP/ESS-PR05 Grievance Redress Mechanism (GRM) Procedure*

2.2.8 ESS 8: Cultural Heritage

The Contractor shall:

a) protect cultural heritage from the adverse impacts of sub-projects activities and support its preservation.
b) address cultural heritage as an integral aspect of sustainable development.
c) promote meaningful consultation with all relevant stakeholders regarding cultural heritage.

Cultural heritage provides continuity in tangible and intangible forms between the past, present, and future. The Contractor should adopt measures designed to protect cultural heritage throughout the sub-project's activities. The Contractor is obliged to keep the following records:

- *ECRP/ESS-R002 Stakeholder engagement minutes*
- *ECRP/ESS-PR04 Chance finds Procedure*
- *ECRP/ESS-PR05 Grievance Redress Mechanism (GRM) Procedure*

2.2.9 ESS 10: Stakeholder Engagement and Information Disclosure

The Contractor shall:

a) Establish a systematic approach to stakeholder engagement that will identify stakeholders and build and maintain a constructive relationship with them.
b) Assess the level of stakeholder interest and support for the sub-projects and enable stakeholders' views to be considered in sub-projects design and environmental and social performance.
c) Promote and provide means for effective and inclusive engagement with sub-projects-affected parties throughout the sub-projects life cycle on issues that could potentially affect them.
d) Ensure that appropriate sub-projects information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and appropriate manner and format.
e) Provide sub-projects-affected parties with accessible and inclusive means to raise issues and grievances and allow IOM to respond to and manage such grievances.

The Contractor should ensure open and transparent engagement of project stakeholders. Effective stakeholder engagement is envisaged as a tool to improve the environmental and social sustainability of sub-projects, enhance sub-projects acceptance, and make a significant contribution to successful sub-projects design and implementation. The Contractor is obliged keep the following records:

- *ECRP/ESS-R002 Stakeholder engagement minutes*
- *ECRP/ESS-P002 Stakeholder Engagement Plan (SEP)*

ANNEX 2: REQUIREMENTS & OBLIGATIONS FOR WB ESF AND GUIDELINES

Table 13.Summary of requirements & obligations for WB ESF and Guidelines

REF.	WB ES INSTRUMENT	RELEVANCE	COMPLIANCE LEADING INDICATORS	COMPLIANCE LAGGING INDICATORS
1.	WB ESF: ESS1: Assessment and Management of Environmental and Social Risks and Impact	Integrates Environmental and Social Assessment; includes requirements related to non-discrimination and social inclusion; proportionality and adaptive management; use of the ESCP	ESCP G-ESMP GRM ES procedures implemented. Permits, and Licenses obtained	Grievances Fines and penalties from regulators Near misses, incidents, and accidents at workstations
2.	WB ESF ESS2: ESS 2: Labour and Working Conditions	Prohibits child labour and forced labour, heightened focus on OHS, grievance mechanisms	OHS Policies, Procedures and Protocols Number of staffs trained. PPE issued	High staff turnover. Grievances Fines and penalties from regulators Near misses, incidents and accidents at workstations
3.	WB ESF ESS 3: Resource Efficiency and Pollution Prevention and Management	Promotes efficient management of energy, water, and other resources and materials; hazardous materials management; pesticides; GHG assessment mandate	ES Policies, Procedures and Protocols Permits, and Licenses Education, Awareness raising and Capacity building.	Grievances Fines and penalties from regulators Land degradation. Environmental pollution
4.	WB ESF ESS 4: Community Health and Safety	Assess risks and impacts on communities; Design of safe and resilient infrastructure, equipment operation, products, services, road safety, hazardous materials; emergency preparedness	ES Policies, Procedures and Protocols Education, Awareness raising and Capacity building.	Grievances Fines and penalties from regulators Near misses, incidents and accidents at workstations
5.	WB ESF ESS 8: Cultural Heritage	Enhanced consultation with affected communities, intangible heritage	SEP implemented. Number of engagement meetings held.	Grievances Fines and penalties from regulators

REF.	WB ES INSTRUMENT	RELEVANCE	COMPLIANCE LEADING INDICATORS	COMPLIANCE LAGGING INDICATORS
			Stakeholder feedback incorporated	
6.	WB ESF ESS 10: Stakeholder Engagement and Information Disclosure	Meaningful consultation, access to information and grievance redress through the life of Sub-projects	SEP implemented. Number of engagement meetings held. Stakeholder feedback incorporated. Grievances recorded, investigated, and closed. Sub-projects information disclosed	Number of grievances recorded. Fines and penalties from regulators
7.	WB Guidelines: Environmental, Health and Safety Guidelines General EHS Guidelines.	The EHS Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP)	WB compliant G-ESMP developed and implemented. ES tools developed and implemented. Safety talks records Disclosure of OSH information Number of trained personnel on Osh issues Awareness raising initiatives recorded. Signage, Hazard and risk communication strategy	Number of grievances recorded. Fines and penalties from regulators Near misses, incidents and accidents recorded. Environmental pollution
8.	EHS Guidelines: Air Emissions and Ambient Air Quality	Applies to facilities or Sub-projects that generate emissions to air at any stage of the Sub-projects' life cycle	G-ESMP developed and implemented. Designs that incorporate technologies for the reduction of emissions Monitoring of air emissions and ambient air quality Training, capacity building and awareness training initiatives	Air pollution Fines penalties and tickets from regulators Elevated pollutant levels

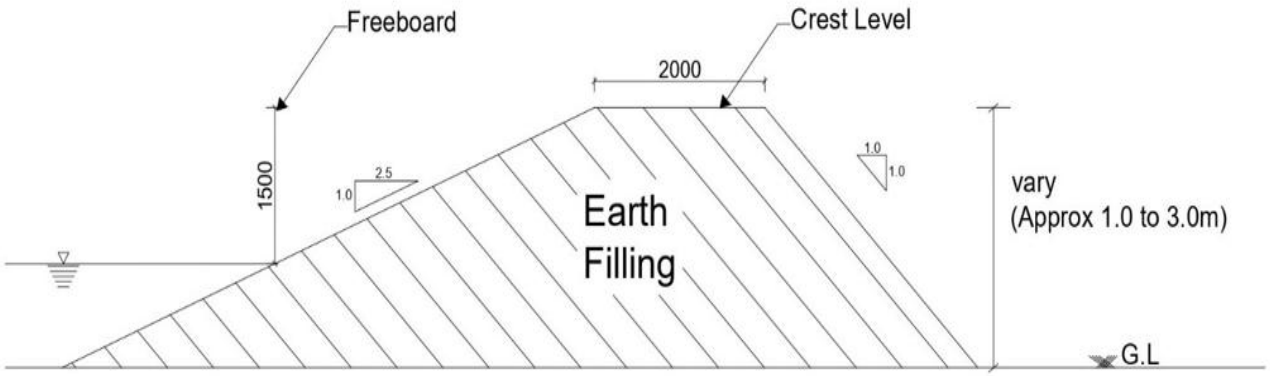
REF.	WB ES INSTRUMENT	RELEVANCE	COMPLIANCE LEADING INDICATORS	COMPLIANCE LAGGING INDICATORS
			Number of stakeholders trained	
9.	WB EHS Guidelines: Waste Management	Applies to facilities or Sub-projects dedicated to the management of municipal solid waste and industrial waste, including waste collection and transport; waste receipt, unloading, processing, and storage; landfill disposal; physio-chemical and biological treatment; and incineration Sub-projects.	G-ESMP developed and implemented. Waste management hierarchy implemented. Use of adequate PPE during waste management Training, capacity building and awareness training initiatives Number of stakeholders trained	Environmental pollution Fines penalties and tickets from regulators Elevated pollutant levels Outbreak of diseases Number of grievances
10.	WB EHS Guidelines: Noise	Addresses impacts of noise beyond the property boundary of the facilities. Worker exposure to noise is covered	G-ESMP developed and implemented. Ambient noise monitoring plan implemented. Proactive selection of Noise standards compliant equipment implemented	Environmental pollution Fines penalties and tickets from regulators Elevated ambient noise levels Number of grievances
11.	WB EHS Guidelines: Dike construction and Decommissioning	provides additional, specific guidance on prevention and control of community health and safety impacts that may occur during new Sub-projects development, at the end of the Sub-project life cycle, or due to expansion or modification of existing Sub-projects facilities	G-ESMP developed and implemented. Waste management/disposal licensees/permits acquired. Waste management hierarchy applied. Training, capacity building and awareness raising on waste management. Number of stakeholders trained	Environmental pollution (Air, Land and Water) Fines penalties and tickets from regulators Elevated ambient noise levels Number of grievances
12.	WB EHS Guidelines: Occupational Safety and Health	Focuses on provision of a safe working environment. Guides the management of hazards and risk through the application of the hierarchy of controls.	G-ESMP developed and implemented. Legal register developed and updated.	Fines penalties and tickets from regulators Number of grievances

REF.	WB ES INSTRUMENT	RELEVANCE	COMPLIANCE LEADING INDICATORS	COMPLIANCE LAGGING INDICATORS
			Near misses, incidents, accidents recorded, investigated, and closed. Adequate PPE provided. Training, education, capacity building and awareness raising conducted. Hierarchy of controls Implemented in management of OHS Hazards and Risks Pre and Post Medical examinations conducted. Hazard and risk communication	Number of near misses, incidents and accidents recorded

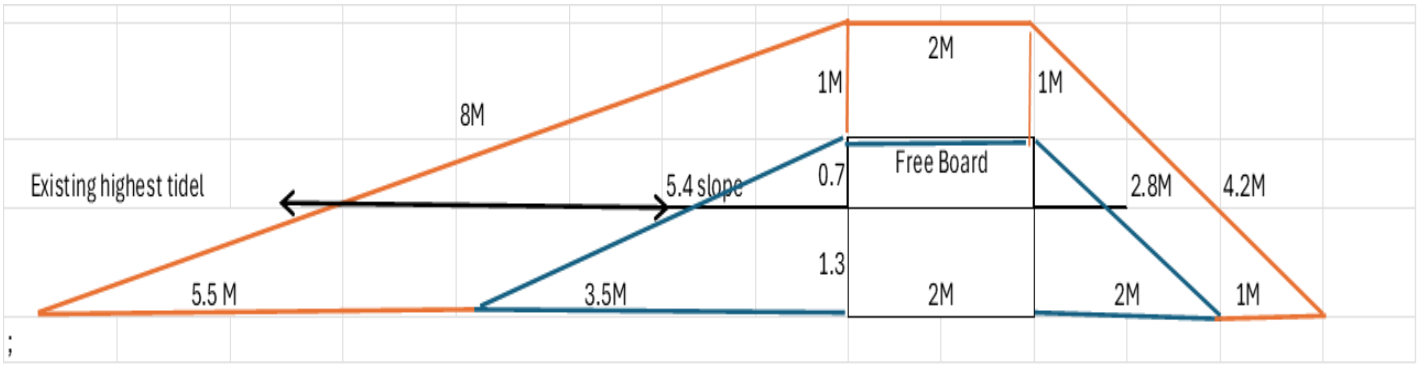
ANNEX 3: STAKEHOLDER CONSULTATION FORMS & REGISTERS

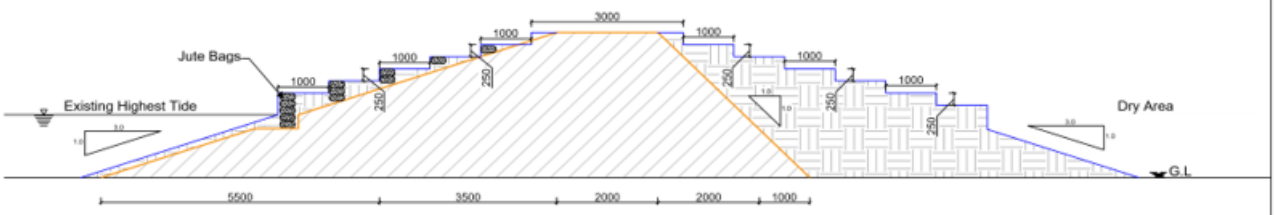
Stakeholder Consultation forms attached separately.

ANNEX 4: ENGINEERING DRAWING

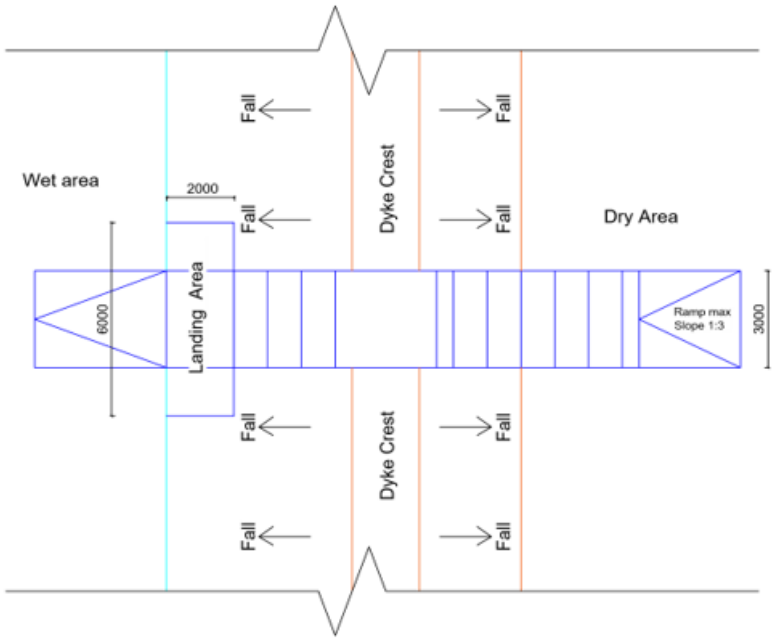


Cross Section of a Dike
Scale 1:25





Cross Section of Dyke Crossing Point
Scale 1:40



Plan View of Dyke Crossing Point
Scale 1:60

GENERAL NOTES:

N

1. All dimensions are in millimeters unless otherwise stated.
2. All dimensions are to checked and confirmed on site before commencement of any work.
3. Depth of pad foundation 1200mm.
4. Depth of strip foundation 750mm.
5. Any discrepancy or changes is to be reported to IOM site Engineer/Project manager before proceeding

Rev:	Date	Description:	Approved
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Program

Enhancing Community Resilience and Local Governance Project

Client:

GOVERNMENT OF SOUTH SUDAN

Implemented By:

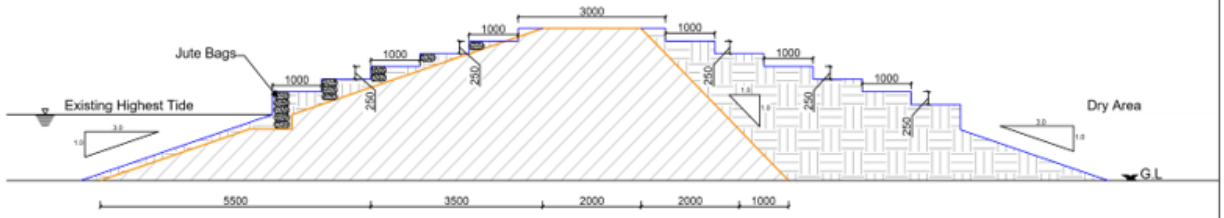
IOM UN MIGRATION

DYKE CONSTRUCTION

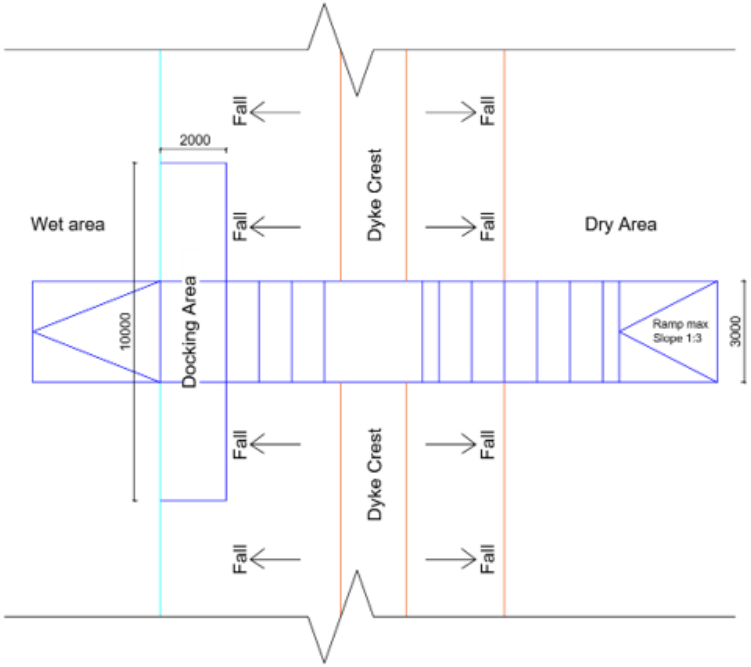
Drawing Title

DYKE CROSSECTION

Designed By: P.H	Drawn by: S.S.D
Checked: F.E & G.O	Approved: ----
Sheet #: 2/2	Scale: AS SPECIFIED
Date: 13 August 2024	Rev: 2



Cross Section of Docking point
Scale 1:40



Plan View of Docking Point
Scale 1:60

GENERAL NOTES:

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1. All dimensions are in millimeters unless otherwise stated.
2. All dimensions are to checked and confirmed on site before commencement of any work.
3. Depth of pad foundation 1250mm.
4. Depth of strip foundation 750mm.
5. Any discrepancy or changes is to be reported to IOM site Engineer/Project manager before proceeding

Rev.	Date	Description.	Approved
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Program

Enhancing Community Resilience and Local Governance Project

Client:

GOVERNMENT OF SOUTH SUDAN

Implemented By:

IOM UN MIGRATION

Project:

IN

Drawing Title

DYKE CROSSECTION

Designed By: P.H	Drawn by: S.S.D
Checked: F.E & G.O	Approved: ----
Sheet #: 2/2	Scale: AS SPECIFIED
Date: 13 August 2024	Rev: 2

ANNEX 5: CHANCE FINDS PROCEDURE

This procedure was developed in accordance with the mandate of the Ministry of Youth, Culture and Sports (Directorate of Archives and Antiquities) of protecting and preserving both tangible and intangible cultural heritage records of South Sudan and the requirements of the World Bank's ESS 8 (To protect cultural heritage from the impacts of project activities and support its preservation, to address cultural heritage as an integral aspect of sustainable development, to promote meaningful consultation with stakeholders regarding cultural heritage and to promote the equitable sharing of benefits from the cultural heritage).

This procedure is included as a standard provision in the implementation of ECRP II Public Works contracts to ensure the protection of cultural heritage (Archaeological and Historical Sites). All Implementing Partners as well as sub-contractors and implementers will be required to observe this procedure as documented hereafter.

Excavation in sites of known archaeological interest will be avoided, including sites where ESS would require FPIC due to impacts on cultural heritage. Where this is unavoidable, prior discussions must be held with the concerned officers from the Ministry of Youth, Culture & Sports in order to undertake pre-dike construction excavation or assign an archaeologist to log discoveries as dike construction proceeds. Where historical remains, antiquity or any other object of cultural or archaeological importance are unexpectedly discovered during dike construction in an area not previously known for its archaeological interest, the following procedures should be applied:

Stop dike construction activities.

- Delineate the discovered site area;
- Secure the site to prevent any damage or loss of removable objects. In case of removable antiquities or sensitive remains, a full-time guard should be present until the responsible authority takes over;
- Notify the responsible foreman/archaeologist, who in turn should notify the responsible authorities, the concerned officers from the Directorate of Archives and Antiquities and local authorities (within less than 24 hours);
- Responsible authorities are in charge of protecting and preserving the site before deciding on the proper procedures to be carried out;
- An evaluation of the finding will be performed by the concerned officers from the Ministry of Youth, Culture & Sports in the Directorate of Archives and Antiquities. The significance and importance of the findings will be assessed according to various criteria relevant to cultural heritage including aesthetic, historic, scientific or research, social and economic values;
- Decision on how to handle the finding will be reached based on the above assessment and could include changes in the project layout (in case of finding an irrevocable remain of cultural or archaeological importance), conservation, preservation, restoration or salvage;

- Implementation of the authority decision concerning the management of the finding;
- Dike construction work can resume only when permission is given from the concerned officers from the Ministry of Youth, Culture & Sports after the decision concerning the safeguard of the heritage is fully executed;
- In case of delay incurred in direct relation to archaeological findings not stipulated in the contract (and affecting the overall schedule of works), the contractor may apply for an extension of time. However, the contractor will not be entitled for any kind of compensation or claim other than what is directly related to the execution of the archaeological findings works and protections.

ANNEX 6: SCREENING REPORTS

ES screening for Dike works

SECTION A: GENERAL INFORMATION

	Environmental and Social Screening Report - ECRP II
Subprojects are screened for their inherent social and environmental risks regardless of planned mitigation and management measures. It is necessary to identify potential inherent risks in the event that mitigation measures are not implemented or fail. This means that risks should be identified as if no mitigation or management measures were to be put in place.	
SECTION A: General Information	
Date of screening	10-25 February 2026
Subproject title	**Upgrading of Disaster Risk Management (DRM) Infrastructure (Dikes) in Greater Pibor Administrative Area, South Sudan**
Subproject component	I
Implementing Agency	IOM
Proposed subproject budget	Approximately 1.2M
Proposed subproject duration	3-6 Months
ES Screening Team Leader and Contact Details	GADA Brian – Environmental and Social Specialist
ES Screening Team Members	James Korok Mama-*Program Assistant (ECRP)* Thomas AMATHA-*National Operations Officer(ECRP)* John Obuni Ali-*Senior Field Engineer* Joel Bolloch-*Community Outreach Assistant* Yohana Sebit-*Community Outreach Assistant* John Keriru-*Community Outreach Assistant* Desta Yoseph Wodebo-*DRM Programe Officer (ECRP)*
Program/Site/ Subproject location	Pibor
Subproject Description. Describe subproject activities in detail showing activities that interact directly with the host biophysical, social, cultural environments. Attach drawings, maps and pictures where available (planning, construction, operation and decommissioning where necessary). ***NB: Should be at most 2 pages***	**Upgrading of Disaster Risk Management (DRM) Infrastructure in Pibor Administrative Area, South Sudan** Pibor Town is one of the selected locations for Disaster Risk Management (DRM) interventions under the ECRP II Project. The selected DRM subprojects include: **Finalization of 2025 Dike Upgrading Works** Flood protection works initiated in 2025 will be finalized and strengthened in 2026 to address residual flood risks identified during high-water events.

Technical assessments indicate that certain dike sections remain at risk of overtopping, particularly where crest levels are inconsistent or where erosion has reduced effective height.

Scope of Works:

- Completion and strengthening of partially executed dike segments;
- Crest level adjustment where required to reduce overtopping risk;
- Repair of erosion-affected sections;
- Compaction and surface finishing to improve durability;
- Integration with adjacent drainage structures to prevent localized ponding.

These works are explicitly designed as continuation and risk-reduction measures, not new alignments.

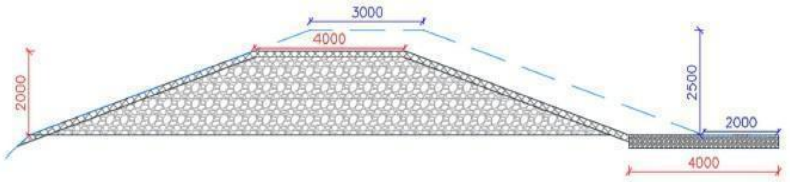
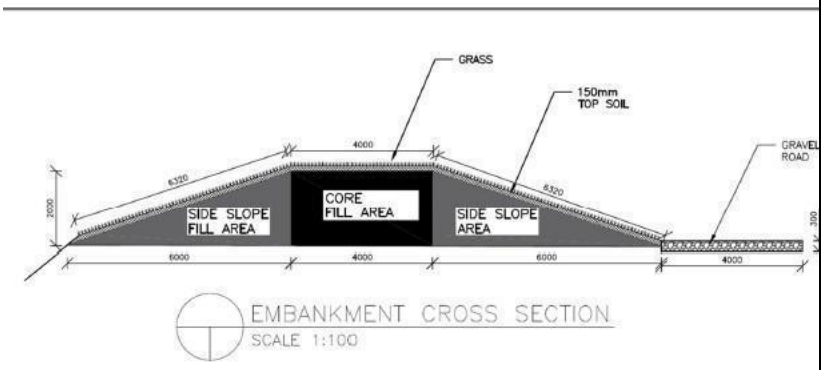


Figure 3-3: Dyke footprint after raising by 500mm



Pibor Town Drainage System Improvement and Minor Road Embankment Rise

This sub-project addresses storm-water driven flooding within Pibor Town by improving drainage conveyance and selectively raising road embankments that currently obstruct natural flow paths.

Drainage improvements will be implemented in combination with minor key road embankment rises, ensuring that surface water is effectively conveyed toward designated outfalls without causing backflow or overtopping.

Key Components:

- Rehabilitation and extension of open drainage channels;
- Raising of selected road embankments to align with culvert invert levels;
- Improvement of storm-water flow continuity across road crossings;
- Integration of drainage works with existing and upgraded culverts.

The total indicative length of roads requiring minor embankment rise is expected to be approximately 5–10 km, subject to final confirmation by technical assessments led by GWR. These locations and lengths will be clearly identified and mapped within the G-ESMP.

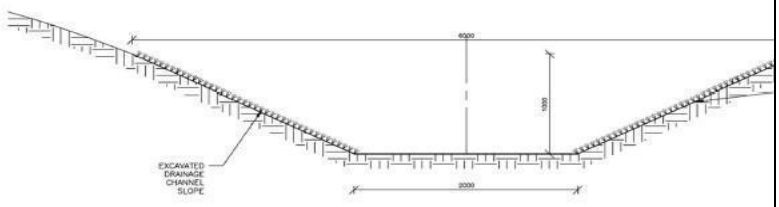


Figure 4-1: New Drainage Channel Cross Section

Culvert Wing Wall Construction (Reinforced and Non-Reinforced)

Several culverts within Pibor Town currently lack adequate end protection, increasing vulnerability to erosion, undermining, and structural failure during high-flow events.

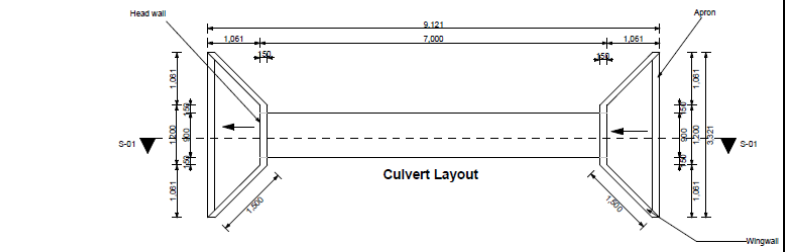
This sub-project will implement wing wall works, categorized as follows:

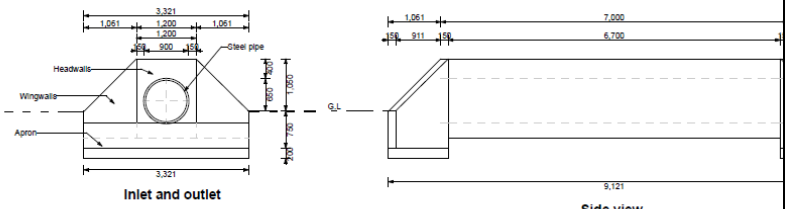
- Reinforced concrete wing walls at high-flow or critical crossings.
- Non-reinforced masonry or stone wing walls at lower-risk locations.

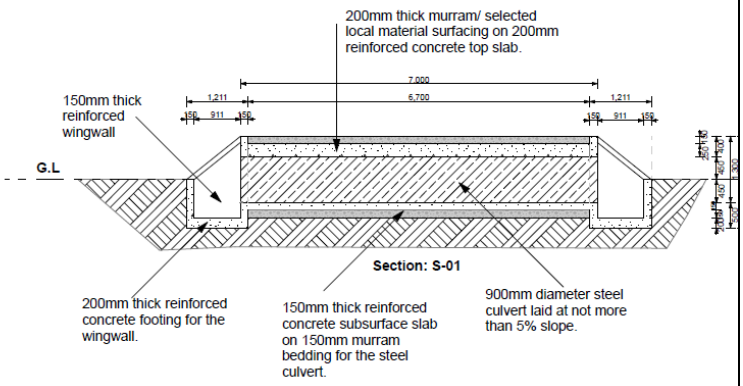
Scope of Works:

- Construction of inlet and outlet wing walls.
- Erosion protection at culvert ends.
- Integration with raised embankments and drainage channels.

- Structural differentiation is clearly defined in design and G-ESMP documentation.







Landscaping and Minor Embankment Works near Market and Port Area

Localized flooding near the market and river-port area disrupts economic activity and access during the rainy season.

This sub-project includes:

- Landscaping works to stabilize surfaces and improve drainage.
- Minor road embankment rises to prevent water accumulation.
- Surface shaping guides run off away from market and port facilities.

	These works are designed as low-impact, flood-mitigation measures that complement the broader drainage and access improvements.

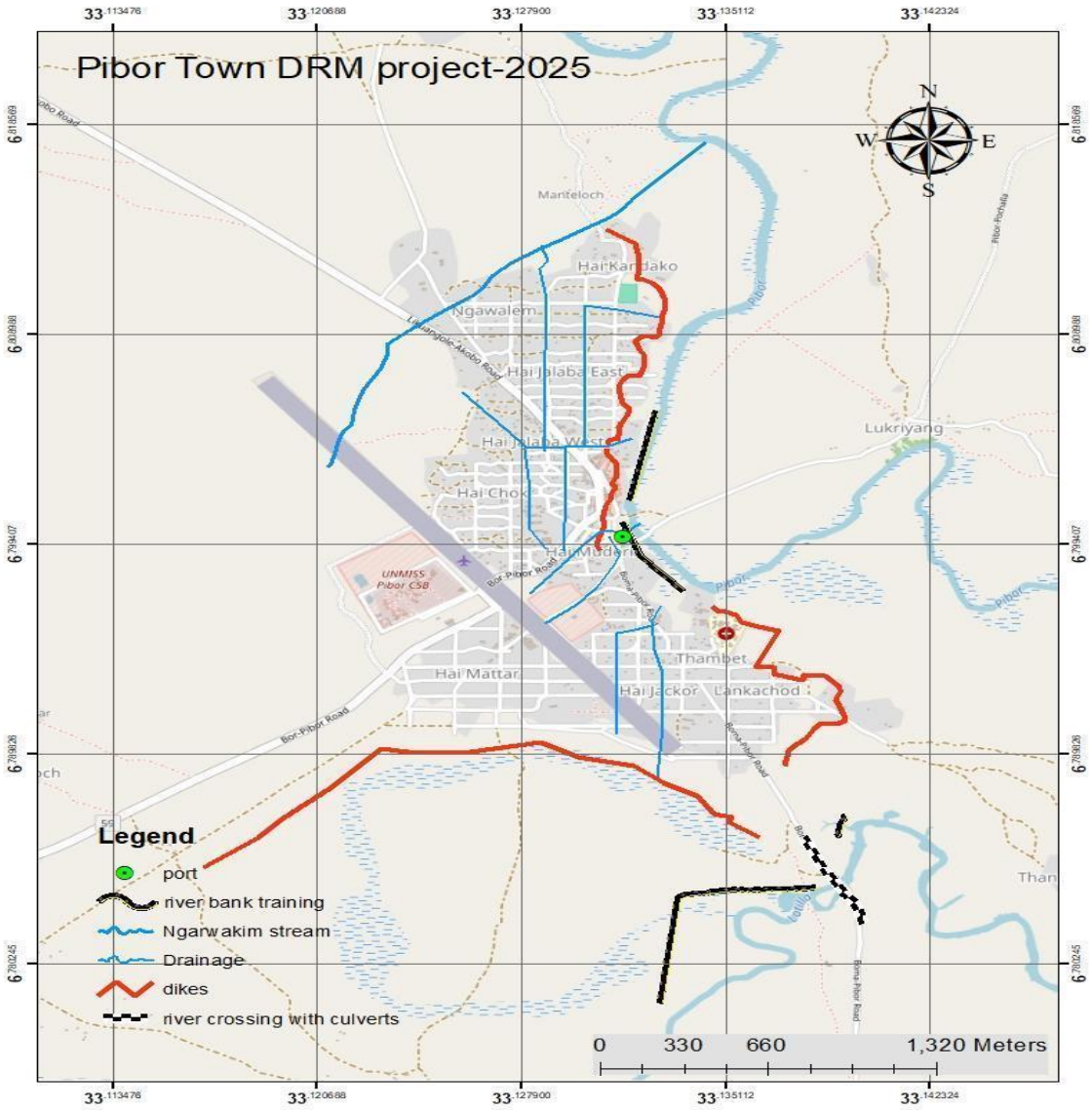


Figure 24 Site map showing proposed DRM infrastructure in Pibor.

Categorize subproject Activities into List A, List B , List C or List D. Refer to subproject Description and Project Categories under section C of this screening format.	**List B the project has moderate environmental or social risks and/or impacts. IOM will put up appropriate management and mitigation measures for all the identified risks or impacts.**

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
	ESS 1: Assessment and Management of Environmental and Social Risks and Impacts					
1.	Is an Environmental and/or Social Assessment required?	☒	☐	☐	ESMF	All subprojects under ECRP II are subjected to ES screening to allow IOM to identify possible Environmental and Social risk to determine which environmental and social management tool to develop to ensure sustainable project implementation.
2.	Is there a risk of subproject beneficiaries not getting the subproject benefits?	☐	☒	☐	Stakeholder Engagement Plan (SEP), Grievance Redress Mechanisms (GRM)	The proposed DRM infrastructure will benefit the targeted communities.
3.	Is there a risk of lack of monitoring of the subproject activities due to remoteness of location and insecurity?	☐	☒	☐	Security Management Plan (SMP)	IOM shall deploy an engineer on ground for the supervision of the work.
4.	Is there a risk that the subproject benefits may not reach truly vulnerable populations?	☐	☒	☐	Stakeholder Engagement Plan (SEP)	
5.	Is there a risk that activities may be influenced by other groups?	☐	☒	☐	Stakeholder Engagement Plan (SEP)	All the stakeholders of the project are engaged inclusive of all youth groups. IOM shall take measures to ensure that the proposed subprojects are

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
						note captured by specific groups.
6.	Is there a risk that the selection of any location/beneficiaries in the activity will lead to a conflict?	☐	☒	☐	Security Management Plan (SMP) Grievance Redress Mechanisms (GRM)	
7.	Does the activity pose a security risk for local staff?	☐	☒	☐	Security Management Plan (SMP)	
8.	Is there a risk that the subproject activity will further facilitate disputed authority structures or will cause an increase in local disputes?	☐	☒	☐	Stakeholder Engagement Plan (SEP)	
9.	Is there any risk of the subproject activity to natural habitat, Nile Basin, or SUDD Wetland?	☐	☒	☐	ESMF	
	ESS 2: Labour and Working Conditions					
10.	Does any subproject activity include any of the known labour rights /ESS 2 non-compliance risks in South Sudan risk of child and forced labour use?	☐	☒	☐	Labour Management Procedures (LMP) Occupational Health and Safety Plan (OHS)	The community are aware of child labour.
11.	Does the subproject include a construction component?	☒	☐	☐	Labour Management Procedures (LMP) Following documents yet to be prepared: C-ESMP Occupational Health and Safety Plan (OHS)	The scope of work will include: • Sitting • Excavation

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
12.	Does the subproject include labour-intensive activities?	☐	☒	☐	Labour Management Procedures (LMP)	The activity is executed with earth moving equipment (Excavator)
13.	Does the subproject include or influence primary agricultural activities?	☐	☒	☐	Labour Management Procedures (LMP) Occupational Health and Safety Plan (OHS)	
14.	Will the subproject require a larger contractor workforce?	☐	☒	☐	Labour Management Procedures (LMP) Occupational Health and Safety Plan (OHS), C-ESMP	The project is a small-scale project and will require a small workforce with the majority of the work being largely mechanised.
15.	Is there a security risk for subproject Workers?	☐	☒	☐	Security Management Plan (SMP)	The site is surrounded by households living in the area as well there are existing structures where workers can be accommodated.
16.	Is there a risk that the subproject facilities cause OHS issues?	☒	☐	☐	Occupational Health and Safety (OHS) management Plan	The sub project activities will include the following key aspects: ● Excavation of trench with moving machine. ● Dust by moving vehicles transporting materials.

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
						• Noise during machine operation. • Chemicals during servicing of hydraulic machines. • Lifting during machine repair.
17.	Is there a risk of labour induced in migration?	☐	☒	☐	Labour Management Procedures (LMP)	
18.	Is there a risk of lacking OHS for workers at the construction site?	☒	☐	☐	Occupational Health and Safety management Plan (OHS) Pest Management Plan (PMP) (yet to be prepared)	Contractors may not follow OHS Plan
19.	Is there a risk of delayed payment of workers?	☒	☐	☐	Labour Management Procedures (LMP	Contractors may not pay workers on time due to delay of payment by client
20.	Is there a risk that workers are underpaid?	☒	☐	☐	Labour Management Procedures (LMP)	Contractors may not follow LMP Plan
21.	Is there a risk that women will not be employed?	☐	☒	☐	Labour Management Procedures (LMP) GBV Action Plan	Women and men are equally participating in community activities.
22.	Is there a risk that provision of contracts causes conflicts?	☐	☒	☐	Security Management Plan (SMP) Grievance Redress Mechanisms (GRM)	If not contracts awards criteria are not brought to the understanding of stakeholders.

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
	ESS 3: Resource Efficiency and Pollution Prevention Management					
23.	Will the subproject result in the production of solid waste? (Directly by the subproject or by workforce)	☒	☐	☐	Following documents yet to be prepared: Waste Management Plan, based on *WBG Environmental, Health, and Safety General Guidelines* Pest Management Plan (PMP), C-ESMP	Solid waste will be produced e.g., bags of used cement, off-cuts, debris from demolition works
24.	Will the subproject result in the production of toxic or hazardous waste? (e.g., used oils, inflammable products, pesticides, solvents, pharmaceutics, industrial chemicals, ozone depleting substances)	☒	☐	☐		Contractor to adhere to the G-ESMP and Waste management guidelines
25.	Will the subproject result in the generation of dust and noise?	☒	☐	☐	Following documents yet to be prepared: C-ESMP	Noise from operation of earth moving equipment. Dust produced from material mixing, and movement of trucks bringing material to site
26.	Will the subproject result in soil erosion?	☐	☒	☐	Following documents yet to be prepared: C-ESMP	
27.	Will the subproject produce effluents (wastewater)?	☒	☐	☐	Following documents yet to be prepared: C-ESMP, Waste Management Plan	Wastewater will be produced from cleaning of tools on site.
28.	Will the subproject result in increased levels of vibration from construction machinery?	☐	☒	☐	Following documents yet to be prepared: C-ESMP	No use of heavy-duty construction machinery will be used

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
29.	Will the subproject produce air pollution? (e.g. significant greenhouse gas emissions, dust emissions and other sources)	☒	☐	☐	Following documents yet to be prepared: C-ESMP	Air pollutants will be released from various sub project activities which include: Vehicles to be used will generate exhaust gasses and fumes.
30.	Will the subproject disturb any fauna and flora?	☒	☐	☐	Following documents yet to be prepared: C-ESMP	Because of unusual noise and smell of gases from the excavator some wild animals may migrate.
31.	Will the subproject result in polluted irrigation water?	☐	☒	☐		
32.	Will the subproject affect the surface or groundwater in quantity or quality? (e.g., discharges, leaking, leaching, boreholes, etc.)	☐	☒	☐		
33.	Will the subproject require use of chemicals? (e.g. fertiliser, pesticides, paints, etc.)	☐	☒	☐	Following documents yet to be prepared: C-ESMP Waste Management Plan	
34.	Is there any risk of accidental spill or leakage of material?	☐	☒	☐		Large volumes of fuel that may be stored on site for small equipment may be accidentally spilled.
35.	Will the subproject require (during execution or after completion) significant amounts of water, energy, materials, or other natural resources?	☐	☒	☐	ESMF	
	ESS 4: Community Health and Safety					
36.	Is there any risk of increased GBV/SEA cases due to labour influx?	☐	☒	☐	GBV/SEA Action Plan Labour Management Procedures (LMP	
37.	Is there any risk of spread of communal diseases due to labour influx?	☐	☒	☐	Labour Management Procedures (LMP); C-ESMP	

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
38.	Is there a security risk to the community triggered by subproject activities?	☐	☒	☐	Security Management Plan (SMP)	
39.	Does the subproject have the potential to upset community social dynamics?	☐	☒	☐	Stakeholder Engagement Plan (SEP) Grievance Redress Mechanisms (GRM)	
40.	Will the subproject include payments or cash transfers among the community/workers?	☒	☐	☐	Stakeholder Engagement Plan (SEP) Grievance Redress Mechanisms (GRM)	During payment of local staffs and procurement of local materials for construction
41.	Will the subproject expose community members to physical hazards on the subproject site?	☒	☐	☐	Following documents yet to be prepared: C-ESMP	Excavations pose safety risks to the community as injuries of both people and livestock can occur. Fall protection barriers, Hazard tapes and informing the community about the excavations must be done in a timely manner.
42.	Will the subproject pose traffic and road safety hazards to the people?	☒	☐	☐	Following documents yet to be prepared: C-ESMP	There will be increased movement at the site
43.	Is there a possibility that the subproject activities contaminate drinking water sources i.e. open wells?	☐	☒	☐	Following documents yet to be prepared: Waste Management Plan; C-ESMP	
44.	Is there a possibility that the subproject activities cause spread of pathogens and other pollutants (e.g. latrines)	☐	☒	☐	Following documents yet to be prepared: Waste Management Plan; C-ESMP	
45.	Will the subproject contribute to the spread of disease (e.g. health facilities)?	☐	☒	☐	Following documents yet to be prepared: Waste Management Plan	

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
	ESS 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement					
46.	Will the subproject lead to physical displacement (relocation, loss of residential land, or loss of shelter)	☐	☒	☐	See negative list	
47.	Is the subproject located in a conflict area, or has the potential of social problems which may cause social conflicts, for instance, land tenure and access to resources issues (e.g. a new road providing unequal access to a disputed land)?	☐	☒	☐	Stakeholder Engagement Plan (SEP) Grievance Redress Mechanisms (GRM)	
48.	Would the subproject potentially discriminate women and girls based on their gender vulnerability, especially their participation in subproject implementation and/or access to the opportunities and benefits of subproject?	☐	☒	☐	Stakeholder Engagement Plan (SEP) Grievance Redress Mechanisms (GRM)	
49.	Is there a risk that the associated subproject activities lead to economic displacement (loss of land, assets, or access to assets leading to loss of income sources or other means of livelihood) to any of the stakeholder?	☐	☒	☐	See negative list	
50.	Will the subproject lead to disputes over land ownership?	☐	☒	☐	ESMF	The land belongs to the government. The project will secure wayleaves to ensure that the Dike will transverse through areas that agreed between the project and the government.
	ESS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources					
51.	Will the subproject affect sensitive areas such as habitats, wetland area?	☐	☒	☐	ESMF	
52.	Is there a risk that the subproject causes ecological disturbances?	☐	☒	☐	ESMF	

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
53.	Is there a risk that the subproject causes changes in land form and habitat, habitat fragmentation, blockage or migration routes, water consumption and contamination?	☐	☒	☐	ESMF	
54.	Is there a risk that the subproject causes loss of precious ecological assets?	☐	☒	☐	ESMF	
55.	Does the subproject involve harvesting or depletion of natural resources (e.g. forest, fisheries, etc)?	☐	☒	☐	ESMF	
56.	Can the subproject cause disruption of wild life migratory routes?	☐	☒	☐	ESMF	
57.	Can the subproject introduce alien species or GMOs?	☐	☒	☐	ESMF	
58.	Can the subproject impact ecosystems upon which communities rely for food, water, fibres or other basic needs, including cultural and spiritual needs?	☐	☒	☐	ESMF	
59.	Is the subproject likely to cause soil erosion, siltation or degradation?	☒	☐	☐	ESMF	When it rains before backfilling excavated foundation and poor management of debris.
60.	Is the subproject located directly on river embankments?	☒	☐	☐	ESMF	Construction shall be done along the riverbank to mitigate spilling of floods from the main river.
61.	Will construction, operation or decommissioning of the subproject involve physical changes, such as topography or land use (e.g. construction camps, housing, etc.)?	☐	☒	☐	ESMF	
	ESS 8: Cultural Heritage					
62.	Will the subproject be located in or close to a site of cultural value, any archaeological or naturally important site?	☐	☒	☐	Chance Find Procedures (ESMF)	The proposed sub-projects area is not known for cultural or natural remains.

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
63.	Is the subproject site known to have the potential for the presence of cultural and natural heritage remains?	☐	☒	☐		
64.	Will the subproject adversely impact the intangible cultural heritage? This includes practices, representations, expressions, knowledge, and skills including, objects, artefacts, and cultural spaces?	☐	☒	☐		
65.	Is there a risk that the subproject will have negative impacts on movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance?	☐	☒	☐		
	ESS 10: Stakeholder Engagement and Information Disclosure					
66.	Is there a risk that the subproject fails to incorporate measures to allow meaningful, effective and informed consultation of stakeholders, such as community engagement activities?	☐	☒	☐	Stakeholder Engagement Plan (SEP)	Series of stakeholder engagement have been carried out and frequent consultation will continue
67.	Is there a historical exclusion of disabled persons in the area?	☐	☒	☐	Stakeholder Engagement Plan (SEP)	
68.	Are women likely to participate in decision-making processes in regard to the subproject?	☒	☐	☐	Stakeholder Engagement Plan (SEP)	Women are part of BDCs. The BDCs form part of the key decision- making administrative structures in the area in terms of the Local Governance Act.
69.	Is there a risk that exclusion of beneficiaries leads to grievances?	☒	☐	☐	Stakeholder Engagement Plan (SEP)	There is a GRM box selected with the BDCs where Stakeholders and

	Potential Environmental/Social Risks Impacts of Subprojects					
	Risk Category *(Please check each line appropriately. At this stage, questions are answered without considering magnitude of impact – only yes, no or I don't know are applicable answers)*	Yes	No	Don't know	If these risks ('yes') are present, refer to:	Comment
					Grievance Redress Mechanisms (GRM) – see ESMF	communities can channel their complaints/ grievances.
70.	Is there a risk that the subproject component will have poor access to beneficiaries?	☐	☒	☐	Stakeholder Engagement Plan (SEP) Grievance Redress Mechanisms (GRM) – see ESMF	
71.	Will the Covid-19 outbreak hamper proper stakeholder engagement and information disclosure?	☐	☒	☐	WB and FGS guidance and regulations on Covid-19	
72.	Is there a risk that the subproject activities will not provide affected parties with accessible and inclusive means to raise issues and grievances, including provision to respond and to manage such grievances?	☐	☒	☐	Stakeholder Engagement Plan (SEP) Grievance redress Mechanism (GRM)	
73.	Is there a risk that appropriate project information on environmental and social risks and impacts will not be disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format?	☐	☒	☐	Stakeholder Engagement Plan (SEP) Grievance redress Mechanism (GRM)	

SECTION B: SUMMARY OF THE SCREENING PROCESS

E&S SCREENING	RESULTS AND RECOMMENDATION			
Screening Results: Summary of Critical Risks and Impacts Identified	**Risk/Impact**	**Individual Risk**	**Impact Rating**	**Mitigation**
	Occupational Health and safety	medium	medium	THE ECRP II PROJECT to have occupational, health and safety management in place. Dust protection masks for concrete batching teams and all necessary appropriate PPE shall be provided for working teams. Development and implementation of HIV/AIDS, Gender/GBV, PSEA/H awareness programmes for workforce and community. Ensure provision of potable water and ablution facilities for workers
	Gender mainstreaming	Medium	High	Gender mainstreaming during recruitment and allocation of work packages
	Uncovered borrow pit areas	Medium	High	The borrow pit shall be fenced and labelled. Systematic abstraction of soil shall be done according to an agreed plan. Backfilling shall be done prior to decommissioning the borrow pits.
	Recurrent natural disasters	Medium	Medium	Design and construction of robust and resilient dike structures which can withstand anticipated floods.
	Social Conflict	medium	high	Inclusive planning of labour-based works with specific gender inclusion strategies. Stakeholder engagement in planning.
	Dust Pollution	Low	Low	Provision of appropriate safety clothing for workforce including dust masks, a watering down schedule will also be provided
	Solid Waste	Medium	Medium	Availing bins for refuse segregation and collection
	Sustainability	Medium	Medium	Involve the beneficiaries and community leadership in all project related work. Support capacity building on dike infrastructure management. Establish and train the PDRMCs, & CDRMCs
	Screening Result (see Table 7: Sub-projects Risk Level for further details)			**Summary of Screening Result Justification**

E&S SCREENING	RESULTS AND RECOMMENDATION	
	No further ES Assessment required.	
	No further ES Assessment required but requires simple G-ESMP.	
	Detailed G-ESMP and/or RAP or VLD. Done internally.	ES Screening results revealed that most of the impacts are moderate but require mitigation measures to ensure that the potential impacts are minimised. A detailed G-ESMP will be drafted and implementation of the G-ESMP should be done for compliance to the applicable ESS standards, and national laws.
	Detailed G-ESMP and/or RAP. Contracted to Consultancy.	
	ESIA and/ or RAP required. Contracted to consultancy.	
Is Additional Assessment Necessary?	Yes	No

ES Screening Conducted by

ES Screening Team Leader and Contact Details	GADA Brian – Environmental and Social Specialist
ES Screening Team Members	James Korok Mama-*Program Assistant (ECRP)* Thomas AMATHA-*National Operations Officer(ECRP)* John Obuni Ali-*Senior Field Engineer* Joel Bolloch-*Community Outreach Assistant* Yohana Sebit-*Community Outreach Assistant* John Keriru-*Community Outreach Assistant* Baba Ali-*DG of Land & survey (Ministry of Physical Infrastructure)* Desta Yoseph Wodebo-*DRM Programe Officer (ECRP)*

Recommended by IOM Project Manager BARTOLONI Alexander:

Review and Approved by PMU

Reviewed by: Senior Environmental Safeguards Specialist Eluzai John Matata

Reviewed by: Environmental and Social Safeguards Officer Makuach L John

Reviewed by: Senior Social Safeguards Specialist Samuel Manyok

Approved by Project Manager: Guyson Adikobaa

ANNEX 7: REPORT FORMAT

Summary of Key E&S Aspects during the Reporting Period

Project Status, E&S Incidents, E&S Changes, E&S Initiatives

Project Status

- Provide a brief description of any new developments in relation to operations and facilities over the reporting period.

E&S Incidents

- Please provide a summary of all the notifiable E&S incidents.

Please expand or collapse the table where needed.

Date	Incident description	Class	Reports sent to lenders	Corrective action / remedial plan	Status of Corrective Action

E&S Changes

- Please provide a summary of all the notifiable E&S changes.

- Please expand or collapse the table where needed.

Date	Change description	Reports sent to lenders	Implementation status

Improvements/initiatives regarding E&S performance

- Briefly describe improvements/initiatives implemented during the reporting period on the management of E&S aspects (e.g. energy/water savings, sustainability reports, waste minimization, etc.)

ESS1: Assessment and Management of Environmental and Social Risks and Impacts

E&S Impact / Risk Assessment

- Have any supplemental environmental, social, health and safety impact/risk studies been conducted during the reporting period? (Please provide copies).

E&S Regulatory Reporting, Permits and Supervision

- Please list any environmental reports submitted to the South Sudan authorities.

☐ Copies attached with this report ☐ Copies available upon request

- Please summarize South Sudan authority monitoring and inspections.

Management of contractor (IOM and others)

- Please illustrate with a chart or table on contractor's organizational structure to manage environment, health and safety, labour and social aspects during the reporting period. Please name the individuals in contractor who hold responsibility for environmental, social, health and safety, human resources, security performance and give their contact information.

Compliance with Environmental and Social Management Plans

- The status of the G-ESMP implementation should be described and any issues that remain outstanding should be detailed.

ESS2. Labour and Working Conditions

Human Resources Management

- Have IOM and other contractors changed/updated their Human Resource (HR) policy and procedures, HR manual, and Health & Safety (H&S) procedures, during the reporting period?

☐ Yes ☐ No

If yes, please provide details.

- Provide the following information regarding the workforce:

	# community workers	# direct workers	# Female direct workers	Turnover	# Contracted workers
Previous year					
Reporting year					

- List the worker-related court cases and describe their status.

Occupational Health and Safety

- Describe the main changes implemented in terms of Occupational Health and Safety (OHS) during the reporting period, e.g. revision of the OHS management procedures, action plans for technical improvements, leading/lagging indicators used/introduced, identification of hazards, new controls, etc.

- Please attach Health & Safety audit reports available for the reporting period.

☐ Copies attached with this report ☐ Copies available upon request ☐ Not Available

Accident Statistics Monitoring

Report total numbers for each parameter	This reporting period			Last reporting period (not cumulative		
	Community workers	Direct workers	Contracted workers	Community workers	Direct workers	Contracted workers
Total number of workers						
Total manhours worked annual						
Total number of lost times occupational injuries						
Total number of lost workdays due to injuries						
Lost time injury frequency						
Vehicle collisions						

- Provide details for the non-fatal lost time injuries during this reporting period.

contractor/ Subcontractor employees?	Total workdays lost	Description of injury	Cause of accident	Corrective measures to prevent reoccurrence

- Provide details for fatal accidents during this reporting period, if any, (and provide copies of accident investigation and respective corrective plan).

Date of Accident	Type of Accident	Description of Accident	# of Fatalities	Preventive measures taken after the incident

OHS Training

- Describe Health and Safety training programs carried out in the reporting period.

Date	Type of audience	Description of training (and duration)	Number of attendees

Workplace Monitoring

- Please provide a copy of any Workplace Monitoring reports developed for the reporting period.

ESS3. Resource Efficiency and Pollution Prevention

Environmental Monitoring

- Provide a copy of environmental monitoring data reports for this reporting period, collected consistent with the G-ESMPs for the subprojects.

- Briefly describe environmental mitigation measures implemented during the reporting period to comply with E&S requirements.

Resources Efficiency: Energy and Water

- Provide data on energy and water consumption during the reporting period. If the data requested are available in another format, they can be submitted instead.

- Describe the concessionaires' resources efficiency measures/efforts being implemented to minimize fuel, energy, and water consumption.

Hazardous and non-Hazardous Waste

-Provide detailed information of the generated amount of hazardous and non-hazardous waste and its disposal system.

- Erosion Control, Slope Stability and Reinstatement.

- Please describe status and actions implemented in terms of erosion control, slope stability, and

reinstatement within the project's footprint and area of influence.

ESS4 Community Health, Safety and Security

Community Health and Safety

- Please list and describe any initiatives implemented in relation to community health and safety during the reporting period.

- Please provide the list and description of the actions, the expected or actual dates of implementation, progress/status, results obtained. You can use a tabular format (as below) or provide the information as an attachment of the report.

Issues	Mitigation Measures	Expected or Actual Date of Implementation	Results/Current Status

- During the reporting period, have any emergency drills been conducted with participation of the local authorities, public emergency organizations or local communities? Are the communities aware of the emergency response plans?

Accident Reporting

- Provide details for the non-fatal casualties, involving third parties, during this reporting period.

Date of Accident	**Type of Accident**	Description of Accident	# of People Injured	Preventive measures taken after the incident

- Provide details for fatal accidents during this reporting period (and provide copies of accident investigation and respective corrective plan).

Date of Accident	Type of Accidents	Description of Accident	# of fatalities	Preventive measures taken after the incident

GBV/SEA and Child Protection Action Plan

- Please provide an update on the status and progress of the actions as defined in the GBV/SEA Action Plan.

You may attach relevant monitoring reports.

ESS5 Land Acquisition and Involuntary Resettlement

- Report any activities guided by the Resettlement plan

- Have any specific instruments in regard to land and resettlement been prepared in the reporting period

- Report on the implementation of specific land-related instruments (e.g. RAPs)

- Report any activities that are using voluntary land donations and assess compliance with the protocol

- **Provide summary of voluntary land donations**

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

Biodiversity Management

- Please report on the mitigation measures included in the ESMF and G-ESMPs.

- As needed, using the table below describe any new activities or expansions that have increased the project footprint into new areas of habitat during the reporting period.

New activity/expansion	**Total area covered**	**Habitat type**

ESS7 IP/SAHUTLUC

- List any information dissemination and consultation events vis-à-vis land donors that have been undertaken to fulfil free, prior and informed consent (FPIC) in land donations.

- List any cultural issues identified in subprojects, corrective actions, and lessons learned for future projects.

ESS8 Cultural Heritage

- Report if chance find procedures have been applied if not, please indicate Not Relevant.

ESS 10 Stakeholder Engagement and Information Disclosure

Stakeholder Engagement, Public Consultation and Disclosure

- List any stakeholder engagement events, including public hearing, consultation and disclosure, liaison with non-governmental organizations, civil society, local communities on E&S.

Date	Participant(s)	Formats of Interaction	Issues Discussed	Contractor response/ Agreement reached (attach minutes if any)	Actions Taken (if any)/ Remarks

Grievance Mechanism and Court Cases

- Report the number and type of requests and/or grievances received from project affected people / local communities / local organizations.

- How many have been resolved and how many are pending? (Please attach a log of the grievance redress registry.

Report the number and type of court cases on E&S grounds, if any (Please attach a log of all court cases and their status)

ANNEX 8: GRIEVANCE REPORT FORM

Reference No: _____

Details of Complainant:

Full name: _____

❑ I wish to raise my grievance anonymously

❑ I request not to disclose my identity without my consent Contact

_____

❑ By Mail: Please provide mailing address:

_____

Gender of Complainant:

Age of Complainant:

❑ By Telephone: _____

❑ By Email _____

Preferred Communication: ❑, ❑, ❑ English

❑ One-time incident/grievance Date ____/_____/

❑ Happened more than once (how many times) _____

❑ On-going (currently experiencing problem)

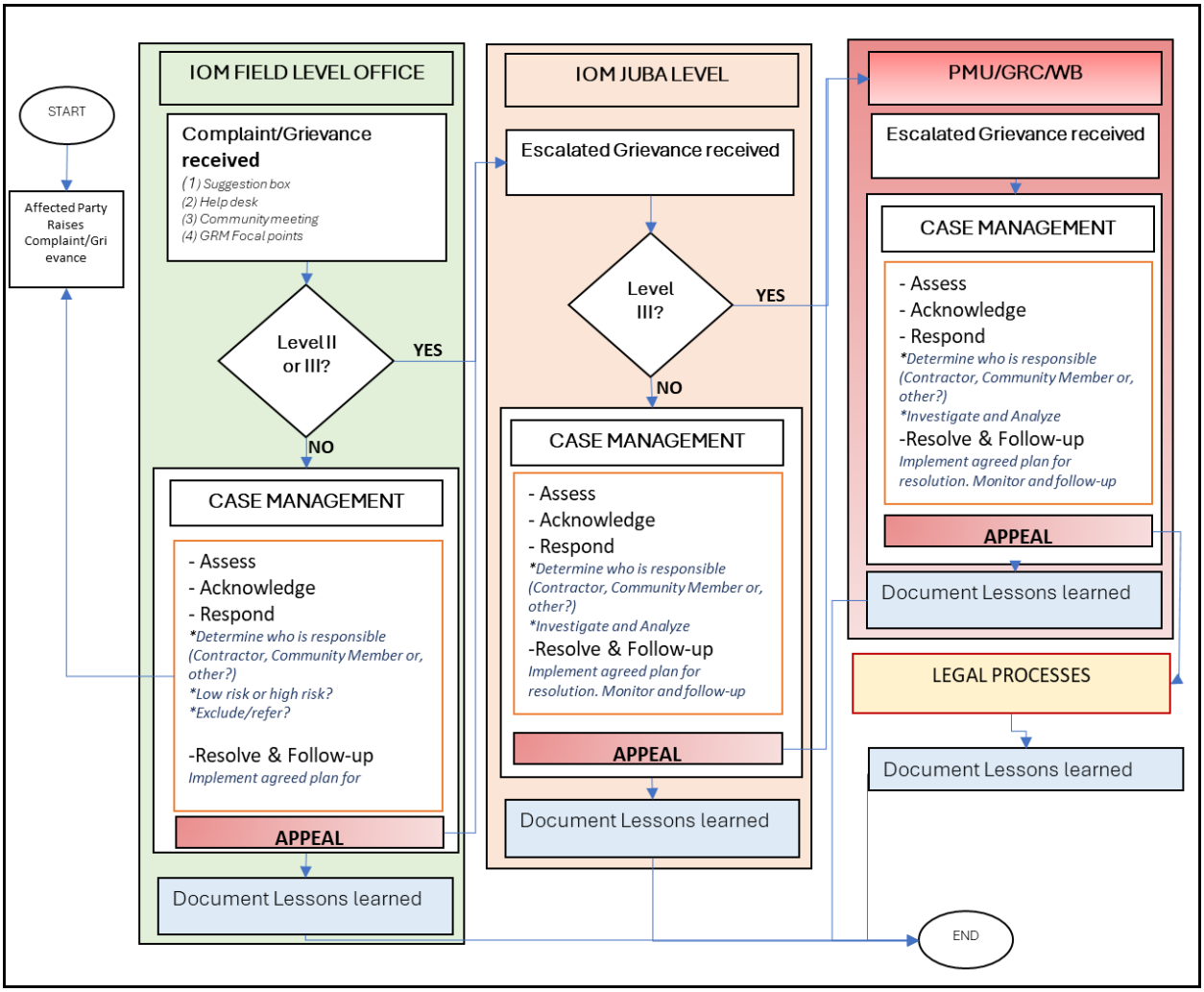
Description of Incident or Grievance:

Location of grievance:

What happened? Where did it happen? Who did it happen to? What is the result of the problem?

What would you like to see happen to resolve the problem?

ANNEX 9: GRIEVANCE CASE MANAGEMENT



ANNEX 10: BORROW PIT MANAGEMENT PLAN (BPMP

INTRODUCTION

Borrow pits serve as temporary extraction sites for soil, gravel, and aggregates essential to infrastructure delivery. However, decades of global practice consistently show that poorly planned or abandoned borrow pits contribute to slope instability, loss of life, land degradation, and contamination of water resources (e.g., Nwachukwu 2017; World Bank 2018). Studies identify risks such as frequent sliding, ecosystem service loss, groundwater pollution, and increased vector breeding when pits remain unrehabilitated. Soil erosion is further accelerated by excavation activities, particularly in landscapes facing unsustainable land use practices or climatic stressors, with FAO identifying erosion as one of the greatest global soil threats (FAO 2020).

Under ECRP II, this Borrow Pit Management Plan (BPMP) provides a comprehensive, evidence-based framework to ensure environmentally responsible excavation, rehabilitation, and safe integration of borrow pits into surrounding landscapes.

OBJECTIVES

a) Ensure environmentally sound sourcing of construction materials.
b) Reduce soil erosion, sedimentation, and hydrological disruption.
c) Safeguard community health and safety from pit-related hazards.
d) Prevent vector breeding in abandoned pits.
e) Support progressive rehabilitation using ecological best practice.
f) Align with World Bank ESF requirements (ESS1, ESS3, ESS4, ESS6).

SITE SELECTION & PLANNING

Principles for Borrow Pit Siting

International guidance stresses that improper site selection is a major contributor to long-term safety and environmental impacts (Csiap 2018). In view of this, ECRP II shall carefully consider the selection of the borrow pit sites guided by this BPMP. Moreover, consistent with FAO recommends, ECRP II shall avoid areas with high erosion sensitivity, wetlands, or hydrologically important zones to prevent degradation and water quality decline (FAO 2020).

Required Baseline considerations

PARAMETER	METHODOLOGY	EVIDENCE BASIS
Soil classification	Geotechnical sampling	Soil instability → excavation collapse risk (OSHA 2015; CDC 2026)
Hydrology & topography	GPS, DEMs	Protects drainage and reduces erosion impacts (FAO 2020)
Vegetation & biodiversity	Ecological survey	Topsoil & seed banks critical for natural regeneration (DBCA 2020)
Social context	Community assessment	Prevents exposure of vulnerable groups to hazards (GR4W 2021)

OPERATIONAL MANAGEMENT

Excavation Controls

For all ECRP II borrow pits, excavation shall follow engineering controls such as sloping and benching. Excavation literature shows that vertical faces and unsupported soils significantly increase collapse risks (Wahocho 2026). Progressive extraction is preferred, minimizing open exposed areas (OSSGA 2026).

Topsoil Conservation

The contractors shall ensure that topsoil must be removed, stockpiled, and protected. Research by the Department of Biodiversity Conservation and Attractions shows that natural regeneration depends heavily on topsoil preservation, even in degraded landscapes (DBCA 2020). Thus, keeping the topsoil will provide a good platform for the decommissioning and final management of the borrow pits.

Health & Safety Requirements

Studies highlight that borrow pits without fences or signage pose significant risks of drowning, falls, and animal entrapment. Fencing and controlled access drastically reduce these risks (GR4W 2021). Thus, all borrow pits under ECRP II shall be fences to ensure that they are protected.

Minimum safety measures that shall apply to all ECRP II borrow pits are as follows:

a) Perimeter fencing
b) Local-language hazard signage
c) Barricaded steep edges
d) Supervised entry
e) UXO-safe excavation procedures (where relevant)

ENVIRONMENTAL MANAGEMENT

Soil Erosion Control

FAO classifies soil erosion as the leading global soil degradation driver, intensified by construction and excavation activities (FAO 2020). ECRP II shall apply the following mitigation measures:

a) Diversion drains
b) Contour banks
c) Rapid vegetation cover
d) Silt traps downstream

Pollution Prevention

Groundwater contamination is frequently observed in abandoned borrow pits due to seepage and unregulated dumping (Nwachukwu 2017). ECRP II shall take the following measures

a) Banning on-site maintenance and re-fuelling
b) Spill response readiness
c) Proper waste segregation and transport

REHABILITATION AND CLOSURE

Possible progressive rehabilitation

All ECRP II borrow pits that shall be subject to rehabilitation, the contractors shall ensure that rehabilitation should occur throughout the pit's operational life, not after abandonment. Aggregate industry guidelines highlight improved safety, reduced costs, and better ecological outcomes when progressive methods are used (OSSCA 2026).

Required Rehabilitation Actions

Step	Action	Evidence Basis
Backfilling	Stabilize to prevent hazardous voids	Csiap (2018) highlights risks of unfilled pits
Regrading & contouring	Slope ≤1:3	Geomatics-based models stress slope stability (Nourddine 2025)
Topsoil reinstatement	Spread 20–30 cm layer	High success rate for vegetative regeneration (DBCA 2020)
Revegetation	Native species only	Supports biodiversity & long-term stability (GCCA 2020)
Drainage restoration	Prevent stagnant water	Reduces mosquito breeding (GR4W 2021)

ALTERNATIVE END USES

ECRP II Borrow pits may be converted to ponds, wetlands, or community aquaculture systems following properly planned and engineered approaches. However, such transitions require long-term ownership and site-specific safety measures (GR4W 2021) thus ECRP II shall ensure close coordination with local communities when borrow-pits are to be converted in this manner. Given the context of South Sudan, the conversion of a borrow pit into a temporary water-storage pond can provide short-term community benefits—such as emergency water supply, livestock watering, or drought buffering—provided the process is engineered, ecologically safe, and socially supported. Global guidance on borrow-pit safety, hydrological management, and pit-to-pond conversion highlights several critical steps for ensuring that such ponds remain safe, functional, and environmentally sustainable (Green Roads for Water 2021; Csiap 2018).

Site Stabilization and Earthworks

ECRP II shall ensure that before storing water, the pit must be reshaped and stabilized. Research shows that poorly graded pits lead to unstable slopes, erosion, and contamination risks (Csiap 2018; FAO 2020). Essential stabilization measures include:

a) Regrading internal slopes to ≤1:3 to prevent collapse and allow safe access for water users.
b) Compacting the pit floor to reduce seepage and improve water retention.
c) Installing perimeter berms to prevent inflow of contaminated runoff.

d) Constructing controlled inlet channels to capture rainwater or floodwater without causing erosion.

Water Quality Protection and Contamination Control

Open water stored in pits is vulnerable to pollution and disease vectors. Studies warn that unmanaged borrow-pit ponds often become mosquito-breeding and contamination hotspots (Green Roads for Water 2021; Nwachukwu 2017).

Mitigation actions include:

- Separating livestock watering points from human-use zones using fencing or designated access ramps.
- Vegetation management around pond margins to remove small water-filled depressions that support mosquito larvae.
- Encouraging water movement, where feasible, as stagnant water increases vector risk.
- Optional biological control using larvae-eating fish such as *Tilapia*, documented to reduce mosquito larvae by >90% (Green Roads for Water 2021).

Safety Measures for Community Protection

Converted pits remain hazardous without proper safeguards. Evidence shows children and animals are most at risk of falling into open pits with deep water (Green Roads for Water 2021).

Minimum safety measures:

a) Perimeter fencing using natural materials or posts and rails.
b) Warning signage in local languages around the pond perimeter.
c) Gentle access ramps for supervised water collection.
d) Prohibition of steep, vertical banks that increase drowning risk.
e) Regular inspections to detect erosion, slope failure, or unsafe conditions.

Hydrological Management

Temporary water-storage ponds must be hydrologically controlled to avoid overflow, erosion, and downstream damage. FAO research emphasises proper drainage and erosion-control structures for all landscape-water interactions (FAO 2020).

Key actions:

a) Spillway construction to manage overflow safely.
b) Sediment traps to prevent silt accumulation reducing storage capacity.
c) Controlled draw-down systems (e.g., simple outlet pipes or channels).
d) Seasonal monitoring to assess evaporation, seepage, and water quality.

Ecological and Social Integration

Well-designed borrow-pit ponds can serve short-term community needs while supporting landscape functions.

- Native vegetation planting around the pond helps stabilize soils and enhance biodiversity (DBCA 2020).
- Community management committees may be established to ensure shared responsibility and prevent misuse.
- Clear definition of allowed uses (e.g., livestock watering, small-scale aquaculture, emergency domestic supply).

International experience shows that ponds remain safe and productive only when governance arrangements are sustained and roles clearly assigned (Green Roads for Water 2021).

Decommissioning After Use

Since water storage is temporary, long-term plans must be established:

a) Backfilling or reshaping once the pond is no longer required.
b) Restoring natural drainage paths.
c) Revegetating the entire footprint with native species.
d) Final inspection is conducted as part of handover of borrow pit from contractor back to IOM and to the Local Authority who takes over custody onwards. Once all rehabilitation measures are certified completed, the contractor, IOM and Local Authority will sign the handover certificate.
e) Monitoring for at least 12–24 months to confirm the site is stable (Nwachukwu 2017).

MONITORING & REPORTING

Minimum monitoring period: 24 months post-closure, due to delayed erosion and instability risks documented in reclamation studies (Nwachukwu 2017).

Key indicators:

- Vegetation ≥70% cover
- No erosion gullies
- Stable slopes (no slumping)
- No stagnant water
- No community grievances
- Biodiversity presence documented

COMPLIANCE MATRIX (BPMP vs Global Standards)

REQUIREMENT	ESS1	ESS3	ESS4	ESS6	BEST PRACTICE EVIDENCE
Site selection	✓	✓	✓	✓	FAO soil/erosion guidance
Baseline studies	✓	✓	✓	✓	OSHA/CDC excavation safety
Community safety	✓	—	✓	—	Borrow pit safety research
Erosion control	✓	✓	✓	✓	FAO + DBCA guidance
Progressive rehab	✓	✓	✓	✓	Quarry rehabilitation science
Biodiversity restoration	—	—	—	✓	GCCA biodiversity standards

ANNEX 11: TRAFFIC MANAGEMENT PLAN (TMP)

INTRODUCTION

Construction activities, including borrow-pit operations and material haulage, substantially increase traffic movement, interaction between heavy vehicles and pedestrians, and safety risks on public and community roads. Transport-related incidents are internationally recognized as one of the leading causes of construction-site fatalities and serious injuries if not properly managed (SafetyWise, 2025; Safety Notes, 2026).

This Traffic Management Plan (TMP) provides a structured framework to identify, prevent, and control traffic-related risks arising from construction activities while ensuring full compliance with South Sudan traffic legislation and international best practice for work-zone traffic management.

This TMP applies to:

- Borrow pit access roads and haul routes
- Internal construction site traffic
- Interfaces with public roads, footpaths, and community tracks
- Loading, unloading, and material stockpile areas

LEGAL AND REGULATORY FRAMEWORK (SOUTH SUDAN)

South Sudan Traffic Act, 2003

The Traffic Act, 2003 is the primary legal instrument governing road use in South Sudan. It defines drivers, commercial vehicles, heavy vehicles, livestock on roads, and sets obligations for licensing, vehicle inspection, obedience to traffic signs, speed control, and enforcement powers of the Traffic Police.

Southern Sudan Roads Authority Act, 2011

This Act establishes the South Sudan Roads Authority (SSRA), assigns responsibility for road classification, construction oversight, hazard elimination, and requires approval and coordination for works affecting inter-state, feeder, and public roads.

National Motor Vehicle Rules

Nationally applied traffic rules include:

a) Mandatory vehicle registration and licence plates
b) Mandatory valid driving licences
c) Speed limits of 50 km/h (urban), 80 km/h (rural), and 100 km/h (highways)
d) Mandatory seatbelt use
e) Prohibition of mobile phone use while driving (except hands-free)
f) Legal blood-alcohol limit of 0.08% BAC

Parliamentary Clarification on Enforcement

The Transitional National Legislative Assembly has clarified that Traffic Police must enforce only legally approved requirements under the Traffic Act, 2003, and that unauthorised fees or ad-hoc permits are unlawful.

TMP OBJECTIVES

The objectives of this TMP are to:

1. Protect workers, communities, and road users from traffic hazards.
2. Ensure compliance with South Sudan traffic laws and enforcement mandates.
3. Prevent vehicle–vehicle and vehicle–pedestrian conflicts.
4. Manage borrow-pit haulage safely and predictably.
5. Minimise disruption to public and community traffic.
6. Align construction practices with international traffic-safety standards (SafetyWise, WorkSafe, Procore).

DRIVER AND VEHICLE COMPLIANCE REQUIREMENTS

Driver Licensing

All drivers must:

- Hold a valid South Sudan driving licence issued by the Traffic Police
- Meet the minimum legal driving age of 18 years
- Hold an International Driving Permit or converted local licence if foreign nationals

Vehicle Compliance

All project vehicles must:

- Be registered with valid licence plates
- Have a valid inspection certificate
- Be roadworthy and fit for purpose
- Comply with load-security requirements under the Traffic Act, 2003

SPEED MANAGEMENT (LEGAL ALIGNMENT)

Statutory Speed Limits

Under South Sudan law:

- Urban areas: 50 km/h
- Rural roads: 80 km/h
- Highways: 100 km/h

ECRP II -Imposed Speed Limits

In accordance with international best practice for construction zones (Safety Notes, 2026):

a) Internal construction and haul roads: **≤20 km/h**
b) Near settlements, pedestrians, schools, markets: **≤10 km/h**

Stricter project limits supplement national limits for safety and do not override statutory requirements.

TRAFFIC HAZARD IDENTIFICATION

Major traffic hazards include:

a) Vehicle–pedestrian collisions
b) reversing vehicle incidents
c) poor visibility due to dust and weather

d) falling loads during loading/unloading
e) speeding and driver fatigue

These are consistent with internationally documented construction-traffic risks (Safety Notes, 2026; WorkSafe, 2026).

TRAFFIC CONTROL MEASURES

Traffic Zoning and Segregation

In line with WorkSafe and SCAL guidance:

- Vehicle-only zones for haulage and plant
- Pedestrian-only walkways
- Restricted loading/unloading zones
- Controlled shared-use crossings with banksmen
- No-go zones at active excavation edges

Traffic Flow Management

- One-way traffic systems where feasible
- Designated entry and exit points
- Minimization of reversing movements
- Mandatory spotters during reversing
- Scheduled deliveries to avoid peak community movement times

BORROW PIT HAULAGE CONTROLS

- Use only ECRP II approved haul routes on public roads
- Prohibit shortcutting through villages and pedestrian paths
- Prohibit overtaking on haul roads
- Maintain road surfaces through grader maintenance
- Apply dust suppression to maintain visibility
- Restrict night haulage unless adequate lighting and supervision are provided

SIGNAGE, BARRIERS, AND VISIBILITY

All temporary traffic signs must:

- Follow recognized shapes and colours compatible with national standards
- Be reflective and visible day and night
- Be placed at adequate sight distances
- Be bilingual where communities are affected
- Be removed once activities are completed
- Barriers, cones, rumble strips, and barricades must supplement signage, not replace it.

PEDESTRIAN AND COMMUNITY SAFETY

The Traffic Act, 2003 recognises pedestrians and cattle as lawful road users.

Mandatory measures:

- Clearly defined pedestrian routes
- Safe crossings with traffic marshals

- Speed calming near settlements
- Community awareness and advance notification
- Special care near livestock crossing points

ROLES AND RESPONSIBILITIES

ACTOR	RESPONSIBILITY
Traffic Manager	TMP implementation and supervision
Site Supervisor	Daily enforcement and coordination
Banksmen / Spotters	Control reversing and crossings
Drivers	Legal driving behaviour and compliance
Security / Gate Staff	Access control
Community Liaison	Community communication

TRAINING AND AWARENESS

All drivers and workers shall receive:

- TMP induction
- Legal responsibilities under Traffic Act, 2003
- Defensive driving training
- Refresher training when traffic conditions change (SafetyWise, 2025)

EMERGENCY MANAGEMENT

- Maintain clear emergency access routes
- Display emergency contact information
- Stop traffic during incidents
- Report all accidents to Traffic Police as required by law

MONITORING AND COMPLIANCE

- Daily inspection of signage and controls
- Weekly TMP compliance checks
- Speed monitoring
- Incident and near-miss tracking
- Corrective actions and TMP updates

ALIGNMENT MATRIX

TMP ELEMENT	SOUTH SUDAN LEGAL BASIS	INTERNATIONAL PRACTICE
Licensing & registration	Traffic Act, 2003	SafetyWise
Speed management	Motor Vehicle Rules	WorkSafe
Community safety	Traffic Act & SSRA Act	SCAL
Haul route approval	SSRA Act, 2011	Procore
Training & supervision	Traffic Act enforcement	SafetyWise

CONCLUSION

This Traffic Management Plan ensures that construction traffic operations are:

a) Legally compliant with South Sudan laws,
b) Consistent with international safety best practice, and
c) Protective of communities, workers, and road users.

ECRP II DRIVER CODE OF CONDUCT

PURPOSE

This Driver Code of Conduct establishes mandatory rules of behaviour for all drivers engaged in ECRP II related to transport activities. It ensures compliance with the South Sudan Traffic Act, 2003, protects communities, and reduces road-traffic incidents associated with construction and borrow-pit haulage operations. Under the law, a "driver" includes any person in physical control of a vehicle on a road, and compliance with traffic rules is mandatory at all times.

LEGAL OBLIGATIONS OF DRIVERS

All drivers shall:

- Hold a valid South Sudan driving license, issued by the Traffic Police, in accordance with the Traffic Act, 2003.
- Drive only registered and inspected vehicles displaying valid number plates and inspection certificates, as required by law.
- Obey traffic signs, signals, and directions of Traffic Police and other authorized officers at all times.
- Respect statutory speed limits (50 km/h urban, 80 km/h rural, 100 km/h highways), and any lower limits imposed by the project Traffic Management Plan.

PROHIBITED CONDUCT

Drivers are strictly prohibited from:

- Driving under the influence of alcohol or drugs; the legal BAC limit is **0.08%**, and penalties include suspension or imprisonment.
- Using mobile phones while driving unless hands-free devices are used.
- Overloading vehicles or carrying unsecured loads that may fall onto the roadway, contrary to safe-loading provisions of the Traffic Act, 2003.
- Speeding, reckless overtaking, or driving in a manner dangerous to the public or livestock on the road, which constitutes an offence under the Act.

COMMUNITY SAFETY RESPONSIBILITIES

Drivers shall:

- Slow down and give way near schools, markets, settlements, livestock crossings, and pedestrian areas.
- Stop when instructed by authorized project marshals, banksmen, or Traffic Police.
- Exercise particular caution where cattle and domestic animals use roads, as these are explicitly recognized road users under the Traffic Act, 2003.

ENFORCEMENT AND DISCIPLINARY ACTION

Failure to comply with this Code may result in:

- Immediate removal from driving duties by the contractor.
- Reporting to Traffic Police for statutory penalties under the Traffic Act, 2003.
- Termination of contract for repeated or serious violations.

ROAD-SIGN LAYOUT SHEET

LEGAL BASIS

The Traffic Act, 2003 requires all road users to obey lawful traffic signs, and permits the use of internationally recognised road-sign conventions compatible with national standards. Temporary traffic signage must not conflict with permanent regulatory signs.

REQUIRED SIGN CATEGORIES

Advance Warning Signs

Installed **100–300 m** before the work zone, depending on road speed:

"ROAD WORKS AHEAD"

"TRUCKS ENTERING ROAD"

"SLOW DOWN"

Regulatory Signs

Installed at control points:

"STOP"

"GIVE WAY"

"SPEED LIMIT 10 / 20 km/h" (temporary, project-controlled)

All regulatory signs must follow standard shapes and colours recognisable to South Sudanese Road users

Directional and Guidance Signs

"DIVERSION →"

"SITE TRAFFIC ONLY"

"PEDESTRIAN ROUTE"

Hazard and Community Safety Signs

"MEN AT WORK"

"SCHOOL CHILDREN" (near settlements and schools)

"ANIMAL CROSSING" (where livestock movement is common)

PLACEMENT PRINCIPLES

- All signs must be **reflective** and visible day and night.
- Signs must be bilingual (English + local language) where communities are affected.
- Signs must be removed once the hazard no longer exists, to avoid misleading drivers.
- Installation on public roads requires coordination with Traffic Police and the South Sudan Roads Authority (SSRA).

BARRIERS AND PHYSICAL DEVICES

- Traffic cones and drums to channel vehicles.
- Barricades at pit edges and excavations.
- Rumble strips near pedestrian crossings. These devices complement, but do not replace, lawful road signs.

COMMUNITY LEAFLET ON CONSTRUCTION-TRAFFIC SAFETY

STAY SAFE AROUND CONSTRUCTION TRAFFIC!

Important message for all community members

Construction activities involve trucks, machines, and heavy vehicles that can be dangerous if people are not careful. South Sudan's Traffic Act protects all road users, including pedestrians and livestock.

WHAT YOU SHOULD KNOW

- Trucks may enter and leave the area at any time.
- Heavy vehicles take longer to stop.
- Dust and noise may reduce visibility.

HOW TO PROTECT YOURSELF AND YOUR FAMILY

- Use **designated pedestrian paths and crossings**.
- Keep **children away from roads and construction areas**.
- Do not walk or herd animals close to moving trucks.
- Obey traffic signs and instructions from traffic marshals.

Domestic animals are recognized as road users under the Traffic Act, and drivers are required to take care—but community awareness is essential to prevent accidents.

WHAT DRIVERS MUST DO

Drivers are required by law to:

- Drive only with a valid license.
- Obey speed limits and traffic signs.
- Avoid drunk driving and phone use while driving.
- Respect pedestrians, children, and livestock on the road.

REPORTING SAFETY CONCERNS

If you see:

- Speeding vehicles
- Dangerous driving
- Missing or damaged signs

Report immediately to:

- ECRP II Staff
- IOM Staff and IOM Offices
- Community leaders
- Project grievance desks
- Traffic Police

Unsafe driving is punishable under South Sudan law.

REMEMBER

Road safety is everyone's responsibility.

Protect yourself, protect your family, protect your community.

#SAFETY BEGINS WITH YOU

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