

10 ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

10.1 Introduction

This section describes how the management plans and associated mitigation measures identified in this environmental and social impact assessment (ESIA) will be implemented and monitored. This section has been prepared in accordance with the requirements of the:

- National Environment Act, Cap 153, 1995
- Ugandan Environmental Impact Assessment Regulations, 1998
- Guidelines for Environmental Impact Assessment in Uganda (National Environmental Management Authority [NEMA] 1997)
- Environmental Impact Assessment Guidelines for the Energy Sector in Uganda, 2004 and the Environmental and Social Impact Assessment Guidelines for the Energy Sector in Uganda, 2014¹
- International Finance Corporation Performance Standard 1.

The project has taken every effort, informed by technical experience and industry knowledge, to evaluate all potential impacts and identify appropriate mitigation measures. Should unforeseen impacts arise during the implementation of the project, the project will undertake the necessary assessments, develop adequate mitigation measures and, inform NEMA.

In accordance with the Environmental Impact Assessment Guidelines for the Energy Sector in Uganda, 2004 and the Environmental and Social Impact Assessment Guidelines for the Energy Sector in Uganda, 2014, an environmental and social management plan (ESMP) has been developed. Normally, the ESMP would be presented in the main body of an ESIA; however, owing to the physical size of the ESMP, and to facilitate ease-of-use, the ESMP is presented as Appendix J. Section 10, Appendix E4 and Appendix J have also been issued as a stand-alone volume to further facilitate ease-of-use.

A suite of construction phase management plans will be prepared prior to construction activities commencing and a suite of operational phase management plans will be prepared prior to operational activities commencing. These management plans, described in Section 10.7 will support implementation of the ESMP.

The commitments register (Appendix E4) lists the management plans and the associated mitigation measures. The commitments will inform the management

¹ The Environmental Impact Assessment Guidelines for the Energy Sector (NEMA 2004) encompass all types of energy projects including oil pipelines, whereas the 2014 guidelines refer to oil only in the context of thermal generation. Nonetheless, the 2014 guidelines include text from both the 2004 guidelines and refinements, such as additional information on the ESMOP, and hence are considered current best practice.

plans which, once drafted, will control, manage and monitor the environmental and social impacts identified in this ESIA.

Stakeholder consultation has been ongoing and will continue during all project phases with lead agencies, local leaders and communities. The aim of continuous stakeholder consultation is to provide ongoing project information and receive feedback regarding the effectiveness of project mitigation. Received feedback will inform responsive and adaptive management of environmental and social impacts.

This section includes:

- health, safety, security, society and environment charter
- objectives and targets
- reporting system
- ESMP matrix reference
- roles and responsibilities
- supporting management plans
- supporting subplans
- training needs and capacity building
- management of change.

10.2 Health, Safety, Security, Society and Environment Charter

The project ESMP is guided by the Total East Africa Midstream (TEAM) BV Health, Safety, Security, Society and Environment (H3SE) Charter which has the following ten principles, and which TEAM:

1. Holds safety, security, health, respect for the environment, customer satisfaction, listening to all stakeholders by way of an open dialogue, as paramount priorities.
2. Complies with all applicable laws and regulations wherever it conducts its business and supplements them with specific requirements and commitments when necessary.
3. Promotes among its employees a shared culture of which the core components are professionalism, the rigorous compliance and application of regulations, skills management, incident feedback and continuous learning. This approach relies on the vigilance and commitment of all.
4. Expects each and every team member, at all levels, to be aware of their role and personal responsibility in the practice of their duties. Individuals must demonstrate the strictest discipline in preventing accidents and deliberate damage; in protecting health, the environment and product and service quality whilst addressing stakeholder expectations. Rigor and exemplarity in these fields are important criteria in evaluating the performance of each member of personnel, in particular for those in positions of responsibility.
5. Favours the selection of industrial and business partners on the basis of their ability to apply policies similar to its own concerning health, safety, security, the environment, quality and societal measures.

6. Implements, for all its operations, appropriate management policies regarding health, safety, security, the environment, quality, societal commitment and a periodic risk assessment of relevant policies and measures. Any development of a project or launch of a product is undertaken upon full lifecycle risk assessment.
7. Applies appropriate health, safety, environmental, quality and societal commitment management systems, which undergo regular assessment involving measurement of performance setting milestones, formulating relevant action plans and instituting suitable control procedures.
8. Implements incident response plans and means of intervention designed to face different types of events it may encounter. Such measures are periodically updated and reviewed during exercises.
9. Is committed to managing its energy consumption, emissions in natural environments (water, air and soils), production of final waste, use of natural resources and impact on biodiversity. It develops new processes, products and customer services to enhance energy efficiency and reduce environmental footprint.
10. Adopts a constructive attitude towards health, safety, security, the environment and quality, based on transparency and an open dialogue with stakeholders and outside parties. Through its societal commitment, TEAM is particularly keen on contributing to the sustainable development of neighbouring communities, with a focus on environment, human, economic and social matters. It conducts its operations in such a way as to responsibly ensure security, in compliance with the Voluntary Principles on Security and Human Rights.

10.3 Objectives and Targets

A project objective is to design, construct and operate a pipeline that does not present risk, injury or harm to personnel or host communities and their supporting ecosystem services.

The ESMP presents monitoring parameters and proposed performance indicators and targets that will steer environment and social performance toward continuous improvement.

10.4 Reporting System

A comprehensive reporting system will be developed including:

- internal reporting of environmental and social performance
- external reporting to government relating to:
 - permitting and licensing requirements, e.g., notification before starting an activity
 - monitoring results in accordance with the terms and conditions of any licences or consents
 - annual environmental and social compliance audits
 - environmental and social incidents as required by legal requirements.

10.5 Environmental and Social Management and Monitoring Plan Matrix

The ESMP (Appendix J) reflects the findings of the ESIA and is based on the detailed impact assessment tables presented in Appendices E2 and E3 and summarised in Section 8.

Typically, it is not a single mitigation that reduces an impact but the application of several mitigations that all contribute to the management of an impact. The key mitigation measures presented in this section, and the associated management plan and other measures that are included in Section 10.7 and Appendix E4, have been collectively used to assess residual impacts, and to determine their significance.

The ESMP has been developed so that an impact can be monitored using an appropriate monitoring parameter that will, by default, provide information about potential secondary impacts. For example, monitoring of “contamination of surface water” will, by default, address potential impacts to aquatic biodiversity and ecosystem services associated with surface water, thus simplifying the monitoring programme whilst maximising information and control of impacts.

Monitoring parameters and performance indicators are included in the ESMP.

Four different ESMP matrices have been developed, namely:

- construction generic impacts
- construction location-specific impacts
- operational generic impacts
- operational location-specific impacts.

10.6 Roles and Responsibilities

Roles and responsibilities of parties implementing management plans, associated mitigation measures and the ESMP are outlined below in Table 10.6-1.

Table 10.6-1 Roles and Responsibilities

Role	Responsibilities
The project	<p>Defining the minimum content of the ESMP and (see Section 10.7)</p> <p>Ensuring implementation and monitoring of the management plans and ESMP, and that negative impacts are adequately mitigated and positive impacts enhanced</p> <p>Allocation of adequate means within the project organisation for implementation of the plans and mitigation measures</p> <p>Ensuring that all contractors set up their management systems with consideration of the ESIA findings</p> <p>Approval of contractors' ESMP</p> <p>Ensuring compliance with the project commitments</p> <p>Notifying NEMA in case of changes to the design or activities that can result in changes to the ESIA findings</p> <p>Preventing pollution and actions that will harm or may cause harm to the environment</p> <p>Preparing for emergencies</p> <p>Notifying the relevant authorities in case of emergencies</p> <p>Ensuring continuous stakeholder engagements throughout the project lifetime</p> <p>Providing resources for adequate environmental and social training and awareness of its employees</p> <p>Ensuring adequate financing for implementation of the ESMP to ensure compliance and desired outcomes</p> <p>The implementation of some management plans and mitigation measures will depend, not solely on the project, but also on other parties including government agencies and third parties operating in the project area of influence</p>
Project representative	<p>Informing the H3SE team on changes in the design</p> <p>Ensuring development and approval of detailed management plans by respective contractors</p> <p>Performing periodic audits of contractor's activities jointly with H3SE team</p> <p>Reporting on the implementation of management plans and any nonconformances</p>

Table 10.6-1 Roles and Responsibilities

Role	Responsibilities
Project H3SE team	<p>Ensuring detailed management plans are produced are consistent with ESIA findings</p> <p>Ensuring implementation of the management plans including impacts monitoring</p> <p>Ensuring update of the H3SE Management System and ESMP on a periodic basis or in case of important changes to the impacts or mitigation measures</p> <p>Advising contractors on the ESIA findings</p> <p>Monitoring project activities on site, ensuring adherence to the management plans and reporting nonconformances</p> <p>Planning and undertaking stakeholder engagement throughout the project lifetime</p> <p>Performing audits of site activities and reporting accordingly.</p> <p>Reporting any significant environmental incidents to the responsible authorities as may be required</p> <p>Analysing incidents to prevent re-occurrence</p> <p>Assessing design changes for further notification to NEMA where it may result in changes to the ESIA findings</p> <p>Monitoring project related grievances according to grievance management procedure</p> <p>Undertaking regular environment and social reporting</p> <p>Providing environmental and social training and awareness to the employees</p>
<p>Project Responsible on Site for Safety and Environment (RSES)</p> <p>The RSES is a delegate of the project on site, and all personnel working on that site are answerable to the RSES on H3SE issues.</p>	<p>Ensuring H3SE leadership on site (training, site committees, managing site action plans)</p> <p>Ensuring risk assessment of project activities and management of risks on site</p> <p>Implementing the emergency preparedness system and managing on-site command posts in case of emergency</p>

Table 10.6-1 Roles and Responsibilities

Role	Responsibilities
Contractor on behalf of project	<p>Developing detailed management plans consistent with Section 10.7 and the requirements of the ESMP and project requirements relative to the scope of work</p> <p>Ensuring work conducted is done within the framework of the contractor's management plans, Tanzanian legislation and good international industry practice</p> <p>Ensuring that contractors' and sub-contractors' employees are aware of the contents of the management plans relative to the scope of work and their roles and responsibilities in its implementation</p> <p>Ensuring that all sub-contractors have a copy of, and are fully conversant with, the contents of the management plans and associated roles and responsibilities</p> <p>Providing regular reports to project representatives on implementation of contractor's management plans and nonconformances</p> <p>Participating in monitoring compliance and impacts upon the surrounding environment through independent audits or led by the project, implement corrective mitigation measures where required</p> <p>Appointing persons responsible on site for H3SE</p> <p>Informing project representatives on incidents or complaints from stakeholders</p> <p>Addressing concerns raised from the activities including activities-related grievances according to grievance management procedure</p> <p>Implementing the emergency response on site</p>

10.7 Management Plans

This section describes the management plans that will be drafted to support the implementation of the ESMP. Minimum content of these management plans are the mitigation commitments developed throughout the ESIA and used in Sections 8 and 9 and appendices E2 and E3 (to facilitate impact evaluation and calculate the significance ranking of residual impacts). The commitments are presented in Appendix E4.

The management plans are applicable during construction and operation, except for the decommissioning plan.

Where applicable, separate plans will be drafted for construction and operation that account for the activities and anticipated potential impacts.

Management plans will be revised annually as a minimum or more frequently as required in response to project changes, lessons learnt or adaptive management.

The project will be responsible for the content, drafting, implementation and revisions of the management plans described in this section.

A separate suite of management plans will be drafted for construction and operations.

An overview of each management plan is described in Section 10.7.1. The project will prepare management plans for the relevant phase of the project that include, but are not limited to, this minimum content in support of implementation of the ESMP.

10.7.1 MP01: Biodiversity Management Plan

The biodiversity management plan will define the approach to reduce impacts on biodiversity and will address:

- pre-construction surveys and pre-clearance surveys
- biodiversity action plan
- construction biodiversity considerations, such as signage, reducing habitat disturbance, habitat and species protection, biosecurity plan
- mitigation measures to be applied immediately before the onset of construction, such as translocation plan for flora and fauna and immediate pre-clearance checks.

10.7.2 MP02: Pollution Prevention Plan

The pollution prevention plan will define the approach to prevent pollution and will specify minimum requirements for:

- good international industry practice that will be used in project activities to attenuate impacts resulting from noise, light, dust, nuisances and other sources of pollution
- blast management
- energy management, including sources of emissions and project emission limits
- selection, safe management, use and disposal of chemicals
- handling and disposal of contaminated soil (from chance finds as well as potential project incidents)
- watercourse crossings addressing issues such as fuel and chemical handling and storage, surface run-off into watercourses at crossing points and management of potential project-related sediment loading of the watercourse.
- management of washwater from vehicles and concrete delivery trucks
- planned maintenance of facilities and equipment.

10.7.3 MP03: Waste Management Plan

The waste management plan will define the approach to reduce potential waste related impacts and will address:

- development of a waste management hierarchy
- identification and classification of project waste streams
- requirements for waste collection, segregation, treatment, storage and transportation
- final disposal options
- waste management documentation to demonstrate compliance with duty of care.

10.7.4 MP04: Natural Resource Management Plan

The natural resource management plan will define the approach to manage natural resource use and will address:

- aggregates management (sourcing, storage, use, reuse and disposal)
- water management including potable water and sharing community resources
- timber management.

10.7.5 MP05: Soil Management Plan

The soil management plan will define the approach to soil management and temporary erosion control and will address:

- construction planning surveys and assessments
- soil handling, including topsoil stripping and segregation of soil types during temporary soil storage
- disturbance of contaminated land
- temporary erosion control.

10.7.6 MP06: Cultural Heritage Management Plan

The cultural heritage management plan will define the approach to the identification, assessment and mitigation of potential impacts on tangible and intangible cultural heritage and will address:

- pre-construction surveys and assessments avoidance or preservation of known archaeological or cultural heritage assets
- chance finds procedure for tangible and intangible cultural heritage
- interface meetings.

10.7.7 MP07: Reinstatement Plan

The reinstatement plan will define the approach to manage reinstatement incorporating permanent erosion control and bio-restoration, and will address:

- permanent erosion control
- bio-restoration, revegetation and reseedling
- site reinstatement, including decommissioning of temporary work sites and facilities
- watercourse and wetland crossings reinstatement including vegetation removal and bank stabilisation
- the procedure to identify where location-specific reinstatement plans are required as per the findings of the ESIA
- exit surveys documenting site condition on construction completion.

10.7.8 MP08: Stakeholder Engagement Plan

The stakeholder engagement plan will define the approach to maintain a social licence to operate² among project-affected communities and will address:

- effective messaging, including: construction safety awareness, communicable diseases, employment opportunities and limitations, expectation management, grievance procedure
- activities of community liaison officers
- information sharing
- community relations training
- initiatives to establish good community relations
- the grievance procedure.

10.7.9 MP09: Resettlement Action Plan

The resettlement action plan will define the approach for addressing physical or economic displacement of project affected persons (PAPs) and will detail:

- the applicable national and international laws, policies and standards that will govern the resettlement programme and the land acquisition process
- the methods of identifying PAPs
- resettlement, valuation and compensation mechanism for planned activities and accidental damage
- livelihood restoration process for land and water-based livelihoods
- stakeholder engagement and participation.

10.7.10 MP10: Labour Management Plan

The labour management plan (LMP) will define the approach to ensure recruitment practices and working conditions comply with legal requirements and project standards.

The LMP will:

- comply with international labour standards, National labour laws and regulations concerning transparency, accountability, anticorruption and human rights
- recognise workers' right to trade union representations and organise collective bargaining
- provide suitable working conditions, including rest facilities and breaks
- provide a mechanism for compliance with the International Labour Organisation Maternity Protection Convention (2000)
- respect workers' rights to privacy including data protection requirements.

The LMP will include:

- recruitment policies and process, including guidance for local recruitment

² A social licence to operate exists when a project has ongoing approval or acceptance within the local community and other stakeholders.

- provision for national content, development of local enterprise and capacity development
- location and operation of recruitment centres
- labour contracts, including workers' rights, workers' conduct, camp rules and workers' grievance procedure
- disciplinary procedures
- a retrenchment plan to manage retrenchment at the end of the construction phase
- workforce environmental and social training and awareness programmes, and local skills development
- training to ensure workforce have the skills to perform their responsibilities.

10.7.11 MP11: Project Induced In-Migration Management Plan

The project induced in-migration management plan will define the approach to prevent project induced in-migration and manage associated impacts and will address:

- measures to avoid or minimise consequences associated with the in-migration of people into project areas due to the project's presence and activities.
- measures to manage planned and unplanned in-migration and the indirect impacts of this on biodiversity and host communities.

10.7.12 MP12: Procurement and Supply Chain Management Plan

The procurement and supply chain management plan will define the approach to supply chain management including environmental, social and quality considerations, maximise the purchase of local goods and services, and will address:

- procurement and supply standards
- national content policy for local business and community development
- third-party vendors of services, materials and products
- third-party aggregate extraction and batching facilities
- capacity development
- ring-fencing contracts
- workers' rights compliance.

10.7.13 MP13: Infrastructure and Utilities Management Plan

The infrastructure and utilities management plan will define the approach to monitor use of, or accidental damage to, infrastructure and utilities, define the process of corrective action and will address:

- crossing schedule and planning
- use of public roads and associated infrastructure
- utilities and service integrity
- irrigation and drainage systems
- flood control

- buildings.

10.7.14 MP14: Community Health, Safety and Security Plan

The community health, safety and security plan will define the approach to manage community health, safety and security matters and will address:

- community health including the management of sexual and communicable diseases, and vector control plan
- construction activity awareness and community safety
- community security.

10.7.15 MP15: Occupational Health, Safety and Security Plan

The occupational health, safety and security plan will define the management of workforce occupational health, safety and security and will address:

- camp workforce health and wellbeing
- drug and alcohol policy
- camp facilities, including health clinics and potable water provision
- workforce fitness for work, sexual and communicable diseases prevention plan, vaccine preventable diseases management plan and vector control plan
- pest control and appropriate measures to reduce workforce interactions with wildlife (e.g., reptile control at camp-sites)
- safe procedure should unexploded ordnance be encountered during construction and or operation activities.

10.7.16 MP16: Transport and Road Safety Management Plan

The transport and road safety management plan will guide project logistics and support community and driver road safety during project related transportation activities and will address:

- definition of project transport routes
- local road upgrades
- notification of over-sized loads
- payload monitoring
- journey management, including convoys and scheduling of traffic movements
- suitable diversions routes during temporary closure of roads
- safety awareness education for local communities
- signage of hazards.

10.7.17 MP18: Emergency Preparedness and Response Plan

The emergency preparedness and response plan will define the approach to emergency preparedness and response and will address:

- emergency risk analysis, emergency preparedness and response planning and definition of the relationships with contractors' emergency response plans

- incident management, including spill response planning, location of emergency response equipment and personal protective equipment (PPE), material recovery and remediation techniques
- the type and content of emergency response exercises and the minimum personnel participation in these exercises
- the location of emergency response equipment; minimum equipment and PPE at these locations
- roles and responsibilities and specify communication and notification requirements (according to Tier 1, 2 and 3 thresholds).

10.7.18 MP19: Monitoring and Reporting Plan

The monitoring and reporting plan will define the approach to ensure that:

- monitoring, inspections and audits are undertaken in a systematic way
- the implementation of the environmental and social mitigation measures is monitored
- monitoring programmes would involve appropriate external stakeholders such as local government and civil society
- data on environmental and social conformance is gathered
- investigation of non-conforming monitoring results
- internal and external reporting requirements are met

The monitoring approach for potential impacts is described in the ESMP matrix (Appendix J), with monitoring parameter(s), target criteria and monitoring frequency. The plan will address:

- a monitoring programme identifying monitoring locations (based on sensitive valued environmental and social components and receptors) and monitoring methodologies
- environmental and social inspections and audit programme
- non-compliance management
- monitoring results tracking system
- responsibilities for reporting, content, level of detail and format of reports and reporting deadlines
- internal and external notifications and reporting.

10.7.19 MP20: Decommissioning Plan

The decommissioning plan will define the decommissioning of operation³ infrastructure at the end of the life of the project and will:

- identify applicable laws and standards that will guide the decommissioning process
- define a schedule during the project life for developing a decommissioning process, including financing arrangements
- outline the approvals process for decommissioning

³ Decommissioning of construction phase infrastructure will be addressed in the reinstatement plan (see Section 10.7.1.7).

- define the environmental and social evaluation process.

10.8 Supporting Subplans

The management plans described in Section 10.7 define the minimum requirements based on the findings of the ESIA.

There will be a requirement for other, more specialised supporting subplans to be developed, including but not limited to:

- location-specific biodiversity management plans specifying features and species for retention and protection, translocation, bioremediation requirements
- plans for erosion and sediment control and reinstatement for areas of fragile, sensitive or thin topsoil, side slopes or narrow ridges and at watercourse crossings
- management of chemicals
- radiation protection plan to manage risks from the use of radiography to test pipeline welds, includes emergency procedures, contingency plans and emergency response training
- OHSSP subplans, addressing, amongst other things, substance misuse, malaria (and vector controls) and communicable diseases.

The subplans, as with all the primary management plans, will be revised annually or more frequently if required, in response to project evolution, new information and or adaptive management.

10.9 Training Needs and Capacity Building

10.9.1 Training Needs

An environmental and social training programme will be implemented and will include a system for assessing the competence and training needs of staff.

The environmental and social training programme will include:

- induction training – both worksite induction and construction camp induction
- worker awareness training, including:
 - toolbox talks to be conducted as a minimum prior to any new work activity or work at a new site to include site-specific requirements such as sensitive vegetation, features of biodiversity and cultural heritage value to be protected
 - workers' rights and grievance procedure
 - health awareness
- financial literacy
- skills training to:
 - ensure competent and safe performance of duties, appropriate to the work being performed
 - training that optimises skills development for local staff.

10.9.2 Capacity Building

The LMP and the procurement and supply chain management plan will identify priorities for capacity development and measures to increase the capacity of the project workforce, contractors and sub-contractors. Capacity development priorities include:

- waste management
- safe driving
- handling of chemicals
- rules of engagement for security personnel
- basic health and safety training
- first aid training.

10.10 Management of Change

Changes to the project may occur subsequent to preparation and submission of this ESIA. A management of change procedure will be implemented, that includes:

- environmental and social appraisal of the change, including the identification of new or revised mitigation measures
- health and safety evaluation
- consultation with engineering and H3SE disciplines
- consultation with NEMA on the need for amendments to the ESIA permit
- management of change approval process.

Following management of change approval, changes to the ESMP and supporting management plans will be implemented.

10.11 Estimated Costs

Estimated costs have been developed before finalisation of the HGA between the Government of Uganda and the project, detailed project engineering and other associated commercial agreements. These costs should therefore be considered as estimates and are most likely to change with further definition of the project.

The costs are based on technical experience from implementation of similar projects. As it is challenging to monetise financial costs associated with some environmental loss or disturbance and costs to communities, the costs considered are those associated with mitigation and monitoring of potential impacts. The costs considered include:

- RAP planning and implementation in excess of USD 50 million (subject to final approval of valuation reports and signing of the agreements with project affected persons)
- Environmental mitigation through design and engineering for an estimated USD 10.7 million other environmental mitigation measures for an estimated USD 0.6 million per year and environmental monitoring for an estimated USD 1.3 million
- Management and mitigation of community impacts for an estimated USD 2.9 million including livelihood restoration initiatives.

Responsibilities for stakeholders, especially regulators, is expected to include:

- site inspections during construction and operation
- compliance audits associated with the ESMP during construction and operation
- review of routine reporting submissions such as those associated with permits and licenses
- as necessary, review of change management submissions.

As the project progresses and there is clarity on approval, permitting and licensing requirements, the project will collaborate with regulators on the planning of joint ESMP implementation responsibilities.