ESIA Update for Kasulu Sugar Project, Tanzania

Supplementary Lenders Information Package

PREPARED FOR

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ESIA Update for Kasulu Sugar Project, Tanzania

Supplementary Lenders Information Package

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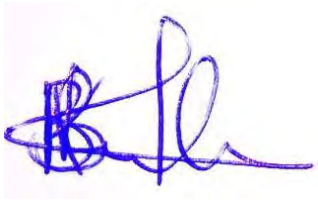
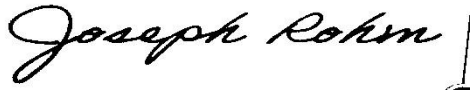


Boaz Bett
Project Manager



Joseph Rohm
Partner in Charge

ERM Consulting Tanzania Limited
1st Floor, Kimbiji House, 344 Ghuba Road,
PO Box 23197, Kinondoni, Dar Es Salaam,
Tanzania

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ACRONYMS AND ABBREVIATIONS

Acronyms	Description
CFP	Chance Find Procedure
E&S	Environment and Social
ECDP	Effluent Control Discharge Plan
EDL	Effluent Discharge License
EHS	Environment Health and Safety
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
EP	Equator Principles
ERM	Environmental Resources Management East Africa Limited
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
GHG	Greenhouse Gases
GIS	Geographic Information System
GRM	Grievance Redress Mechanism
IBP	International Best Practice
ICP	Informed Consultation Participation
IFC	International Finance Corporation
ILO	International Labour Organization
KDC	Kasulu District Council
KSP	Kasulu Sugar Plantation
kV	Kilovolt
MW	Megawatt
MPM	Mufindi Paper Mills
NEMC	National Environment Management Council
OECD	Organization for Economic Cooperation and Development
PSs	Performance Standards
SEP	Stakeholder Engagement Plan
TCD	Tonnes of Cane per Day
TWBO	Tanganyika Water Basin Office
TIC	Tanzania Investment Council
WBG	World Bank Group

1. INTRODUCTION

1.1 PROJECT CONTEXT

Mufindi Paper Mills Limited (MPM or the Proponent) and Horizon Africa (the Client) commissioned ERM Consulting Tanzania Limited (ERM) to undertake a Gap Analysis of the Environmental and Social Impact Assessment (ESIA) Report carried out in 2022 for the proposed Sugar Plantation and Production Plant located in Kasulu District, Kigoma Region Tanzania (the Project), and therefore update the ESIA Report to meet international requirements.

A Gap Analysis Report was therefore prepared by ERM in October 2023 which screened the 2022 ESIA against the International Finance Corporation's Performance Standards on Environmental and Social Sustainability, 2012 (IFC PSs) and identified Environment and Social (E&S) risks and impacts of varying materiality (high, medium, and low). This Document is therefore a Supplementary Lender Information Pack (SLIP), designed to address the material risks and impacts, such that the E&S information available as part of the financing package is acceptable to the international financial institutions approached by Horizon Africa.

1.2 CONTENT OF THE SLIP

The SLIP is divided into the following Chapters and Appendices outlined in Table 1.1 below and should therefore be read in conjunction with the 2022 ESIA report (PaulSam, 2022) and the ESIA Gap Analysis (ERM, 2023).

TABLE 1.1 STRUCTURE AND CONTENT OF THIS SLIP

Section	Contents
Chapter 1	*Introduction* Provides a brief description of the Project background and context and describes the purpose and the structure of this information pack.
Chapter 2	*Project Description* Provides general Project information and a detailed description of the proposed activities and associated project facilities and suppliers.
Chapter 3	*Policy, Legal and Institutional Framework* Presents the legal framework applicable to this agricultural projects and International Finance Institution context. It also includes a Permitting Matrix.
Chapter 4	*Stakeholder Engagement* Provides a summary of stakeholder engagement undertaken during the 2022 EISA and introduces the Kasulu Sugar Plantation Project Stakeholder Engagement Plan commitments
Chapter 5	*Baseline Environment* Describes the key components of the existing physical, biological, and socio-economic environment that could potentially be affected by the Project.
Chapter 6	*Impact Assessment and Proposed Mitigation Measures* Describes and assesses the potential impacts related to phase 1 activities and operations of the Kasulu Sugar Plantation Project on the affected physical, biological, and socio-economic environments.
Chapter 7	*Environmental and Social Management and Monitoring Plan (ESMMP)*

Section	Contents
	Presents the ESMMP prepared for the proposed Project, which sets out the implementation, management, and control of the mitigation measures, as well as the monitoring and reporting requirements.
Appendices	Appendix A: MPM Certificate of Occupancy Appendix B: MPM Water Use Permits Appendix C: MPM Certificate of Registration of Factory/Workplace Appendix D: Resettlement Documentation Appendix E: Stakeholder Engagement Plan Appendix F: Climate Change Risk Assessment Appendix G: Greenhouse Gas Assessment Appendix H: Site Photos Appendix I: Baseline Reports Appendix J: ERM Gap Analysis Report, 2023

1.3 PROJECT BACKGROUND

MPM intends to establish sugarcane plantations and a production plant in nine villages namely Kitanga, Kiyungwe, Heru Ushingo, Nyarugusu, Nyamidaho, Mvugwe, Kumkambati, Kumtundu and Kigadye. The villages are located in three wards, specifically Kitanga, Heru Ushingo and Nyamidaho in Kasulu District Council, Kigoma Region, Tanzania.

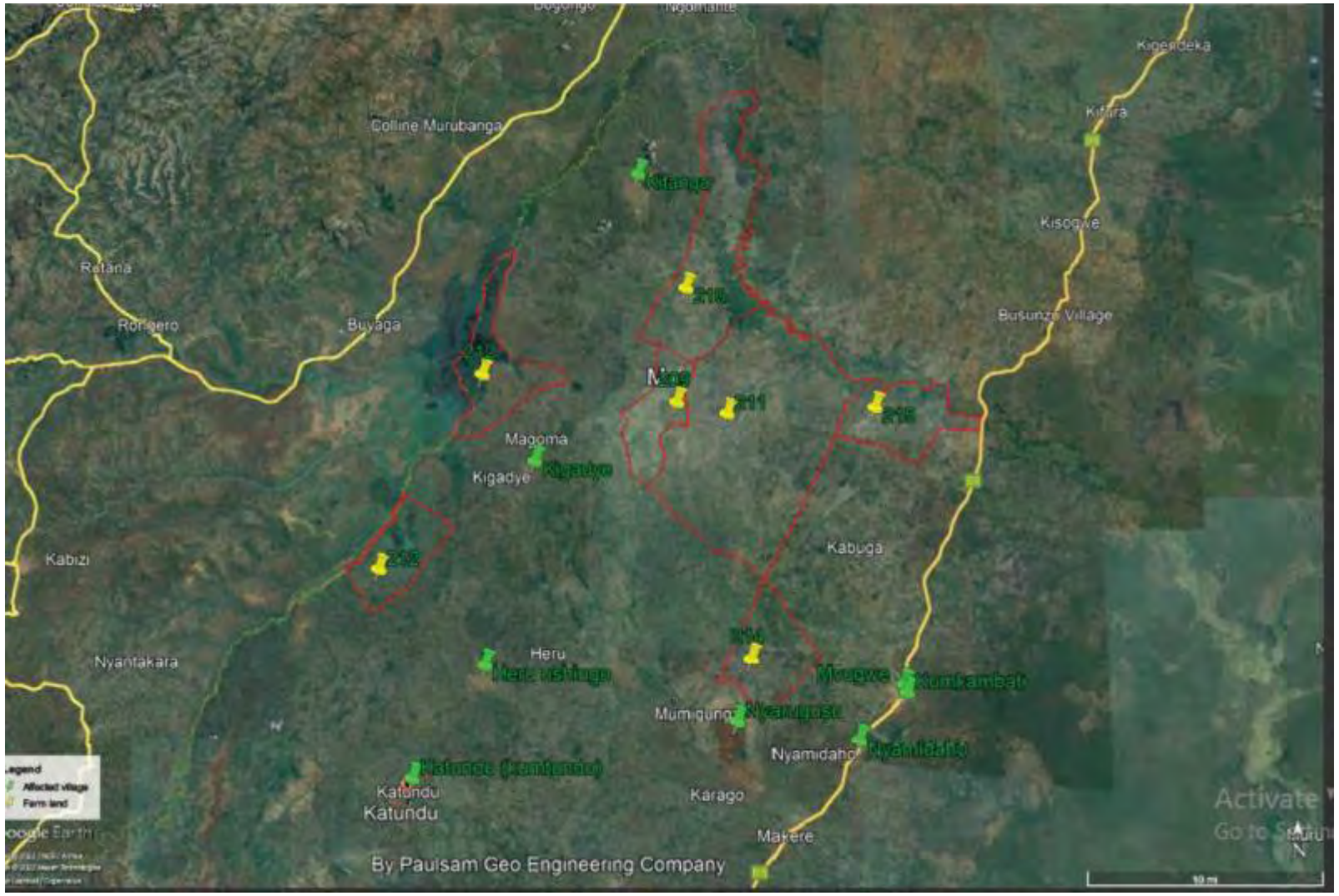
The aim of the Project is to produce sugar to meet the existing national sugar demand in Tanzania and export the excess to various countries. The Project will be developed on approximately (approx.) 37,662 hectares (ha) and will be accessed from either Kigoma town via the Kasulu-Makere road, from Tabora through Uvinza-Kasulu-Makere road or from Kahama through Kibondo-Kasulu-Makere- road. (see *Figure 1 1* below for the Project location).

The Project will be implemented in three phases over a period of seven years as follows:

- **Phase One**: preparation and development of sugarcane plantations, mobilization of material and equipment, clearing of access roads, water intake, construction of sugarcane nursery, workshop buildings, offices, and residential building. This will be implemented during the first three years.
- **Phase Two**: establishment of a sugar processing factory, will be implemented in a period of two years.
- **Phase Three**: expansion of the sugar processing factory, set-up, and operationalization of the ethanol plant as well as associated investments. This phase will be implemented over a period of two years.

It is however important to note that the ESIA Report and SLIP are for Phase One and Phase two of Project development and it is assumed that additional ESIAs will be undertaken for Phase Three by the Proponent, in line with both national legislation and international best practice (IBP).

FIGURE 1.1 SITE LOCATION



1.4 LAND OWNERSHIP

The MPM Project Site has been leased from the Government of Tanzania through the Tanzania Investment Centre (TIC). The lease agreement was issued on 20 October 2021 and will remain valid for 99 years. The lease agreements are attached in Appendix A (Certificate of Occupancy) of this SLIP. The lease was issued under the following special conditions:

- Maintain the land for only farming.
- Use Group 'R' use class (a) and (c) as Group 'R' use class (a) and (c)[1] as defined in the National Urban Planning (Use Groups and Use Classes) Regulations, 2018.
- Demarcate the boundaries of the land to the satisfaction of the Kasulu District Council and maintain the demarcation so that the boundaries are always easily identifiable.
- Preserve the environment, specifically protect the soil, preserve soil fertility, and prevent soil erosion on the land and use the land so as not to cause soil erosion within and outside the boundaries.
- Protect/maintain the beacons on the land throughout the term of the lease.

1.4.1 BACKGROUND TO THE PROJECT LAND OWNERSHIP

Stakeholders consulted during an ERM site visit in October 2023 highlighted that the current KSP area was initially under the ownership of the Mvugwe Village Council as per the Village Land Act of 1999, and later changed ownership to Kasulu District Council (KDC) for investments purposes under Tanzania Investment Council (TIC). Due to the prolonged wait of a prospecting investor to occupy the area and with no visible boundaries allocated, the surrounding communities encroached the area for agricultural activities.

Between 2021 and 2022 KDC identified a prospective investor and began the relocation of informal settlers in the TIC area prior to signing the lease agreements with MPM to develop the Project. Documentation indicates that a total of 472 households were resettled in the KSP area, and a total of 1,000 ha was allocated for compensation to affected households in line with national regulations. Individual affected households received three acres of land for farming as well as one plot (35 x 35 feet) for building a residential structure in Mkuyuni area. Copies of correspondence attached in Appendix D of this Report indicate that TIC requested MPM to pay for the sensitization undertaken by the local administration and village representatives, as well as for the relocation process in December 2021). However, this process was not documented and only a summary of the payments made has been provided.

Kasulu District Council with support from MPM later surveyed and registered all 472 households in Mkuyuni area and developed a land use plan for the area which was then registered as a village through the official registration process. Most households have already received necessary documentation although others are yet to receive due to delays associated with title deeds processing.

[1] [1] Use Group 'R' defines use class (a) cultivation of crops, horticulture, viticulture, floriculture, plant stirpiculture including medicinal and cosmetic herbs; and use class (c) farm homesteads. carrying out of activities in use class (a) and (b) associated with residential accommodation; and use class (b) rearing of cattle, goats, sheep, piggeries, poultry, rabbits, dogs, horses, and animal stirpiculture.

More relocation of households was undertaken in early 2023 by KDC to informal settlers occupying Kitengera area, to discourage informal settlements that were emerging in the area. MPM reported that the resettlement was conducted by the relevant authorities of the Government. MPM as a lessee of the land indicated that they have no control over the compensation process by the Government of Tanzania. MPM reported that all the PAPs have been relocated in through the government led relocation process in compliance with the national legislations

2. PROJECT DESCRIPTION

This *Chapter* provides a general description of the Project and presents an overview of the key elements and activities involved in the construction and operation phases, as well as resource requirements and Project schedule.

2.1 INTRODUCTION

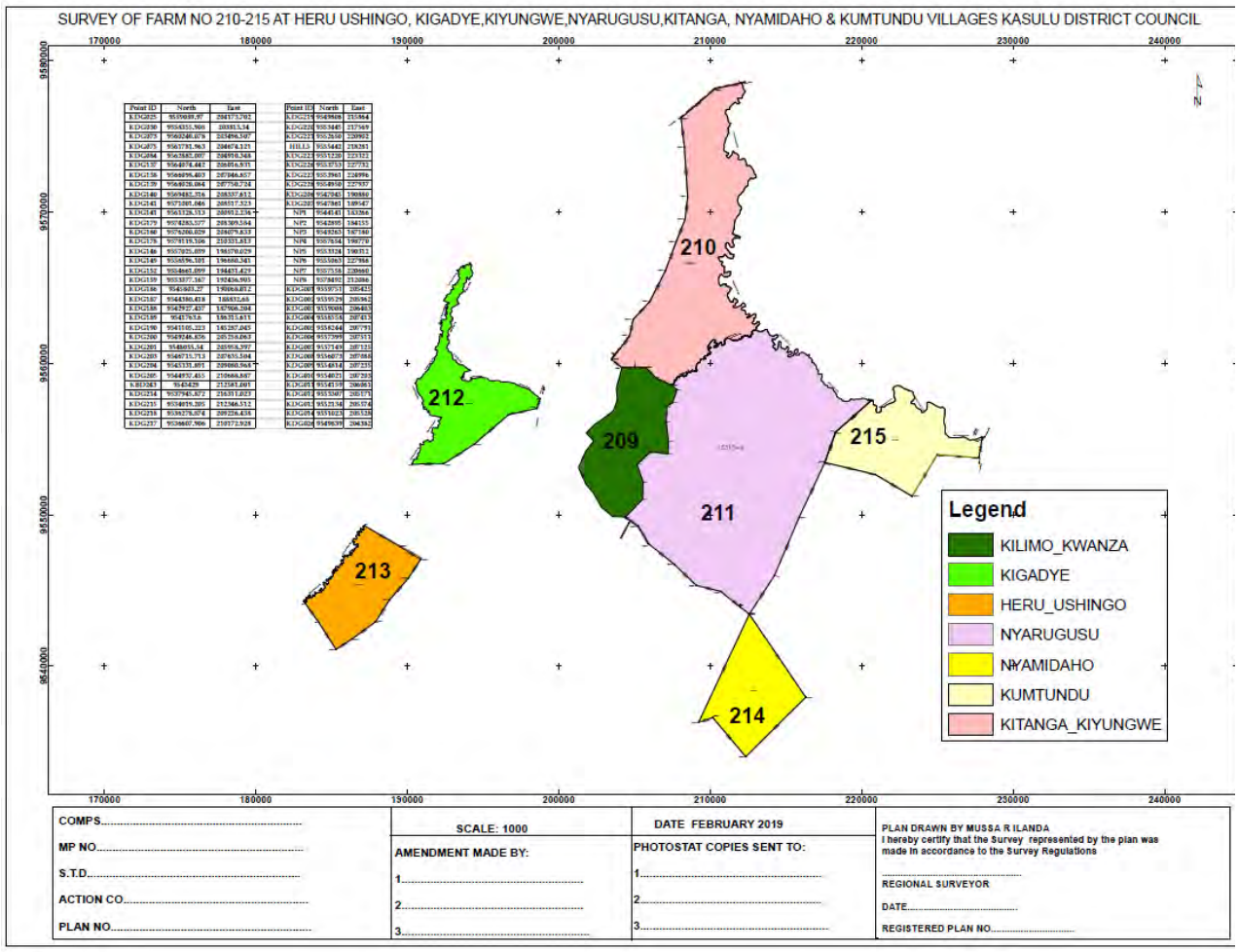
The proposed Project activities will be implemented in three phases as indicated below:

- Phase One (2022-2024): will constitute investments in land development, irrigation facilities and related infrastructure and development of land in cultivatable area into sugarcane farming. Sugarcane farming is expected to employ the sub-surface drip irrigation technology to effectively irrigate the land after development. This would be followed by planting improved varieties of sugarcane into a commercial crop. After year 3, further investments in irrigation and infrastructure would continue, in line with the progress of sugar factory installations. During the October 2023 site visit undertaken by ERM, it was confirmed that Phase One activities commenced.
- Phase Two (2024-2026): construction of sugar factory with an installed capacity of 9,000 tonnes of cane crushed per day (TCD), with an expandable capacity to 15,000 TCD to coincide with the cane development and availability. The Sugar Factory is expected to be commissioned and operational from Year 4. The development of the factory will also result in co-generation of power, by using bagasse (generated out of sugarcane crushing operation) as fuel in the boiler. The power generated, after internal consumption at the sugar factory, would have excess power that can be exported to the state grid on a commercial basis.
- Phase Three (2026 onwards): Further cane development and ramping up of sugar factory production volumes and capacity utilisation.

2.2 EXISTING PROJECT CONDITIONS

The Proponent intends to develop the 37,662 ha of land progressively in line with the Project phases. The Project is currently in Phase One of the development on plot no. 215 (See *Figure 2*.1), and the Proponent has already begun site clearance, deployment of required tools and machinery for the land clearance work, recruitment of construction crew, development of temporary worker camps, construction of access roads for Nursery A, and deployment of construction materials to the Project site. The Nursery Area of 100 ha has already been developed and Nursery B is in the process of implementation. MPM has engaged the following contractors: Netafim Supplier of Irrigation Equipment, and Materials and Technology and Fair Construction Limited for internal road construction. These contractors will be responsible for Phase One activities with supervision from the Project Proponent's management.

FIGURE 2.1 FARM AREA



2.3 SUMMARY OF PROJECT DESIGN

Figure 2.2 – Figure 2.12 present the maps and layout designs for the Project.

FIGURE 2.2 PROJECT MASTER PLAN

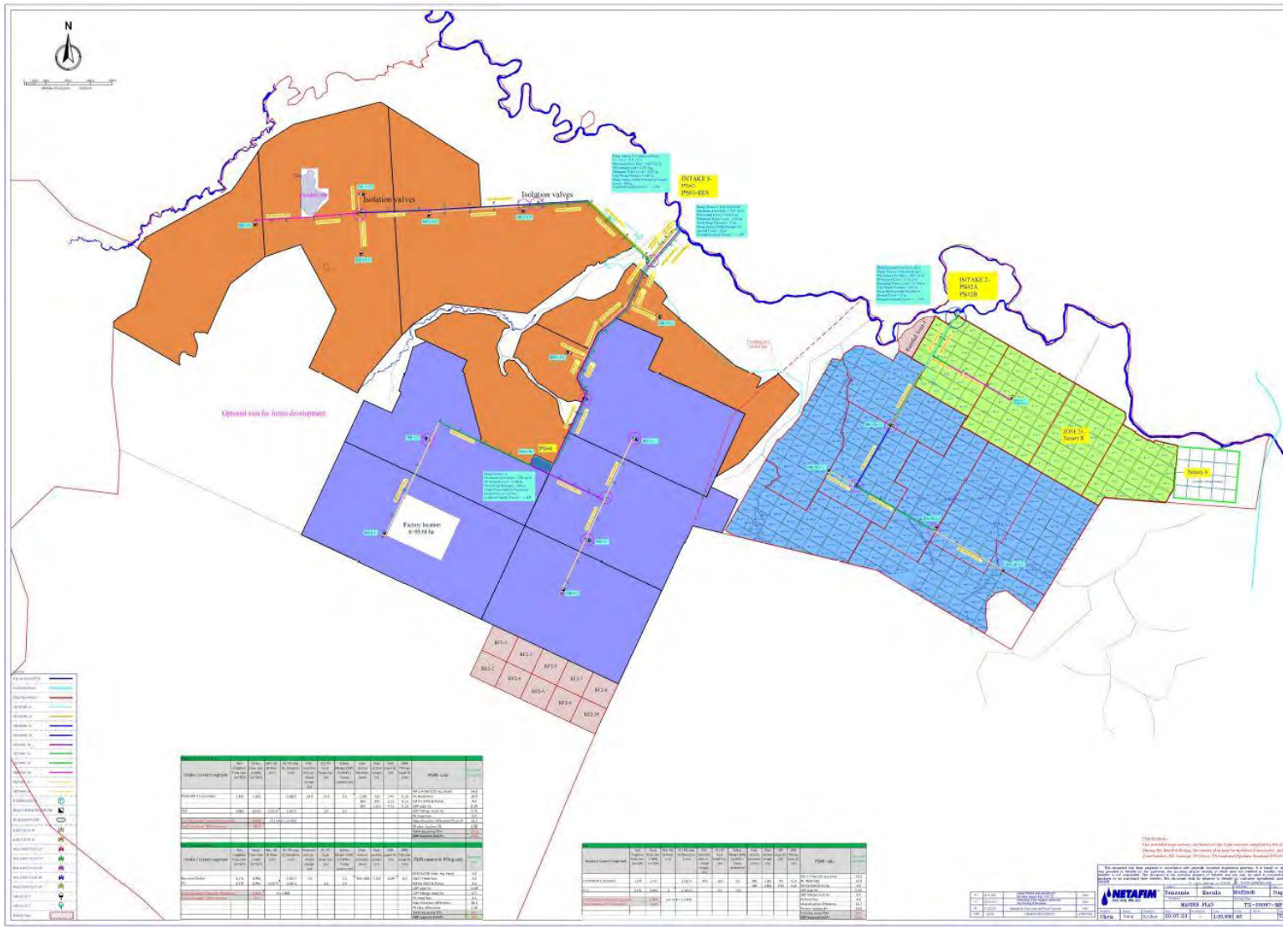


FIGURE 2.3 LAYOUT SHOWING LOCATION OF CANE NURSERY, OFFICE AND WORKSHOP PREMISES

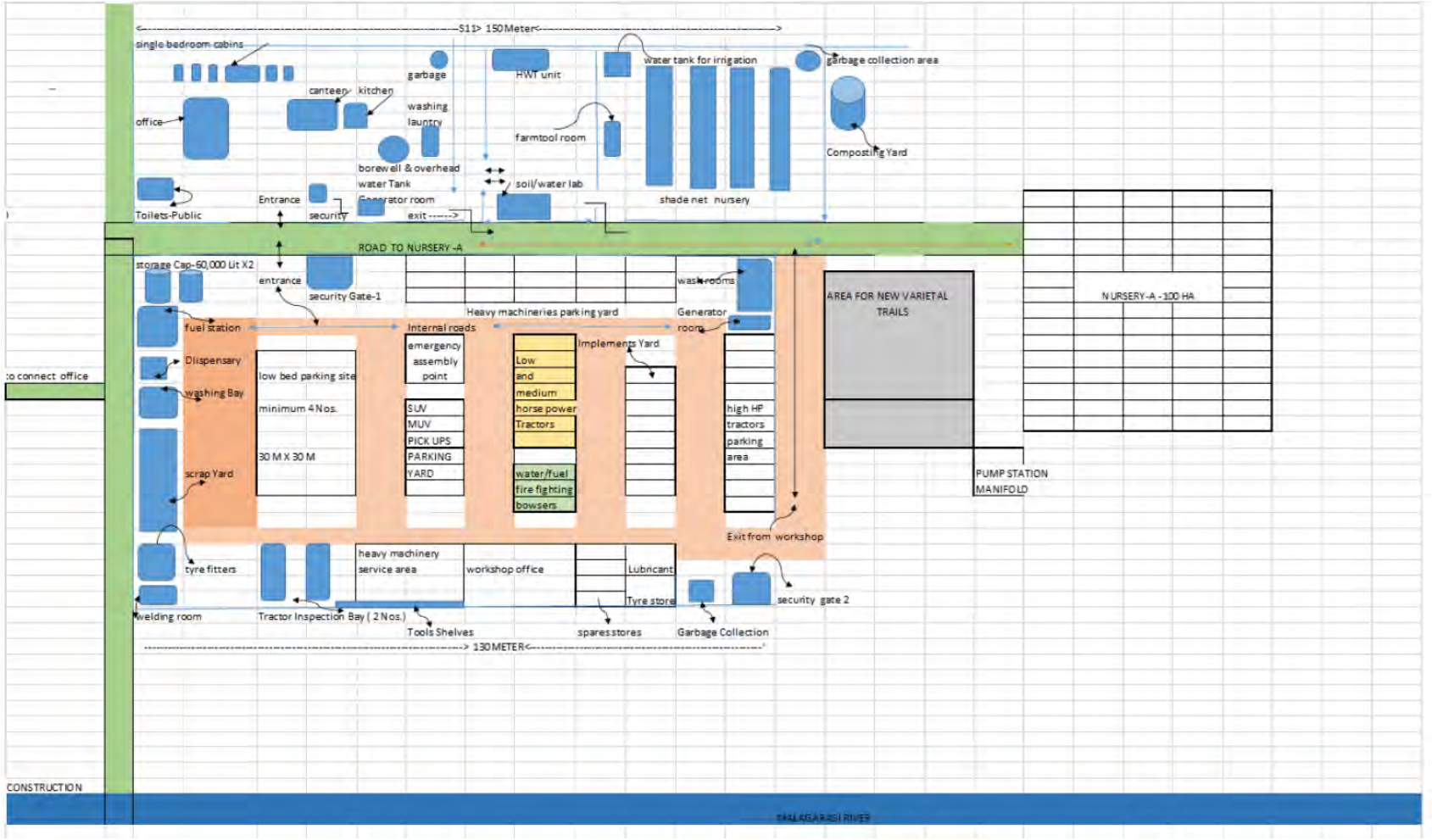


FIGURE 2.4 NURSERY A IRRIGATION DESIGN

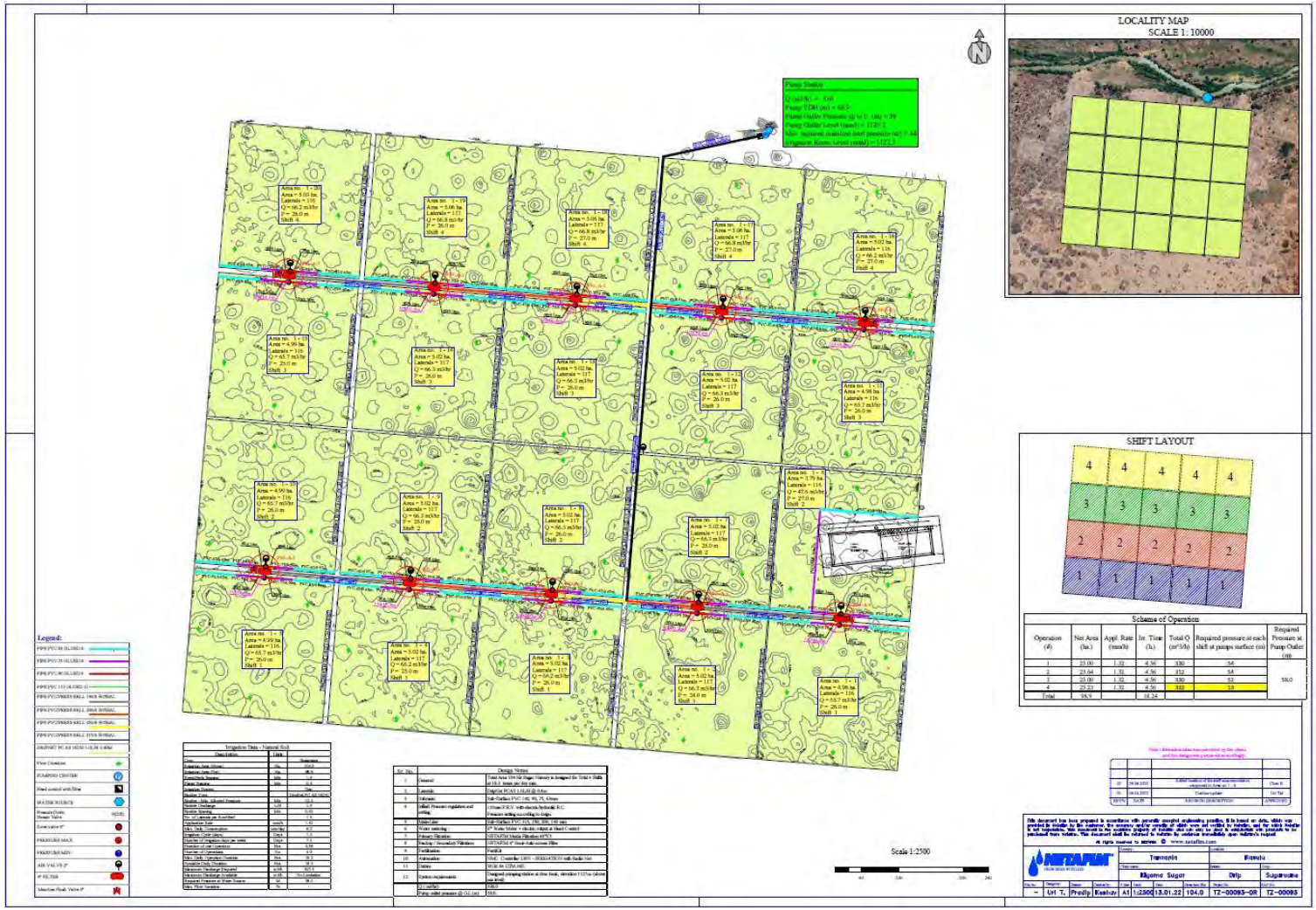


FIGURE 2.5 NURSERY B IRRIGATION DESIGN

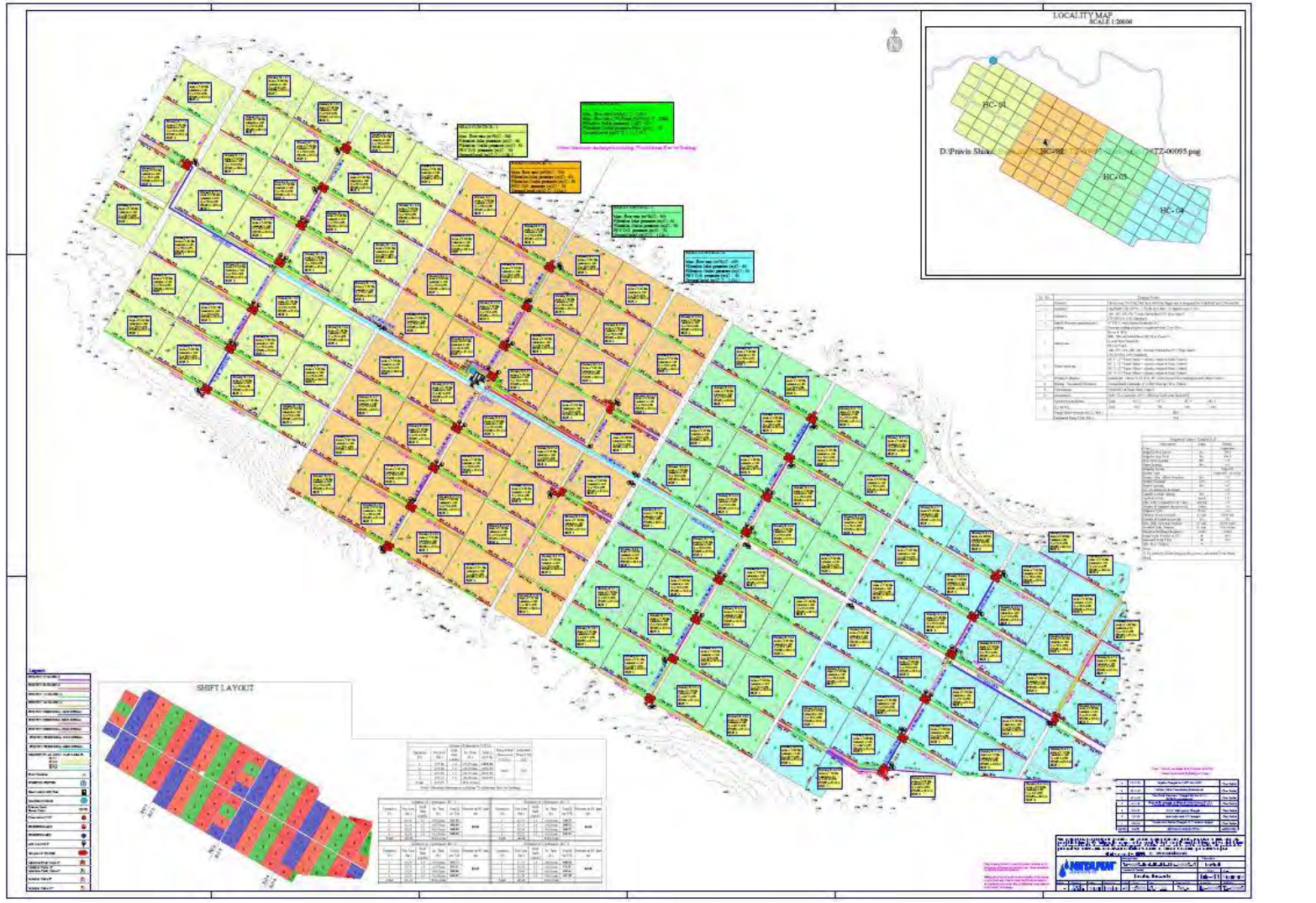


FIGURE 2.6 NURSERY B ROADS LAYOUT

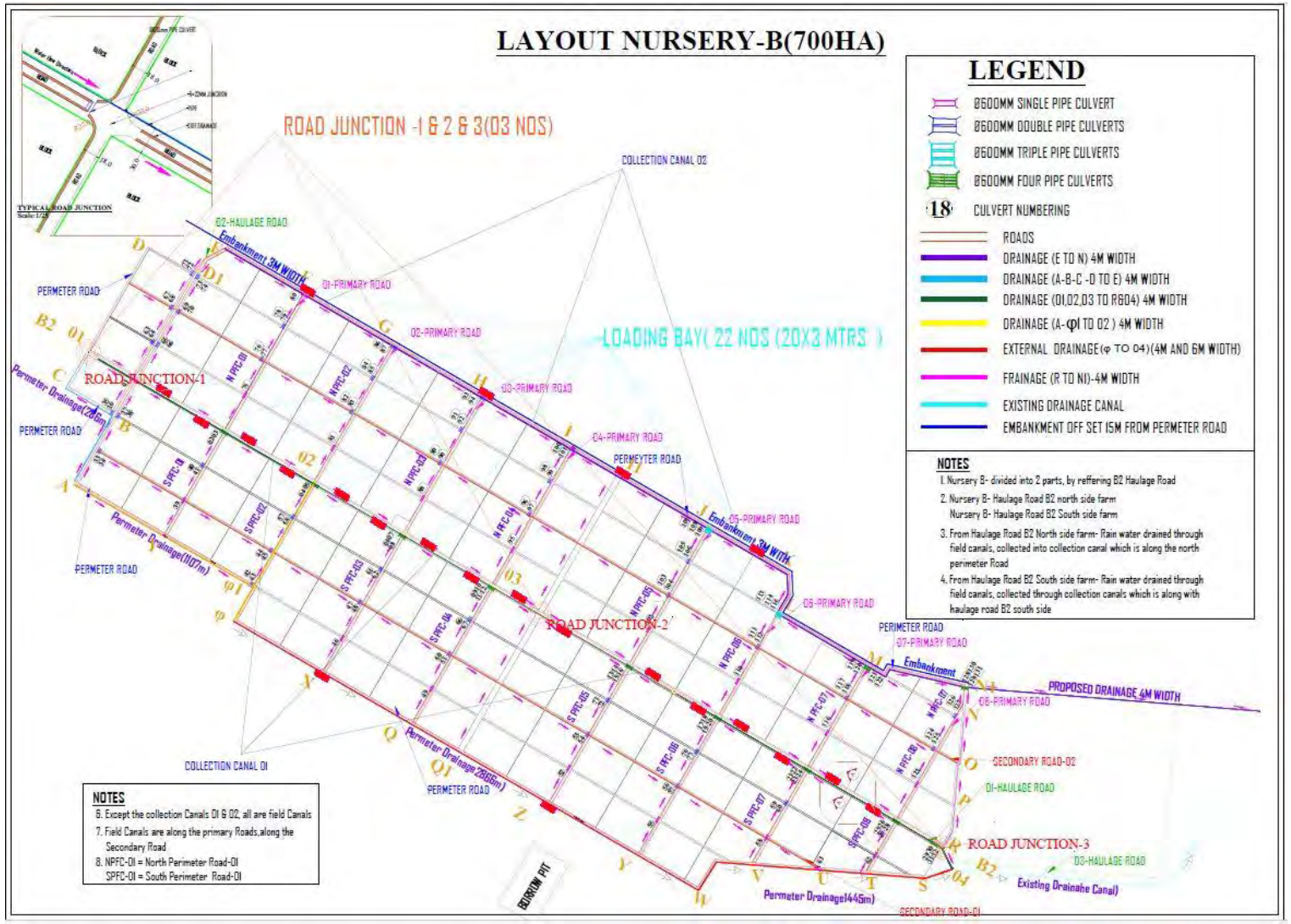


FIGURE 2.7 INTAKE 2 DEVELOPMENT PLAN

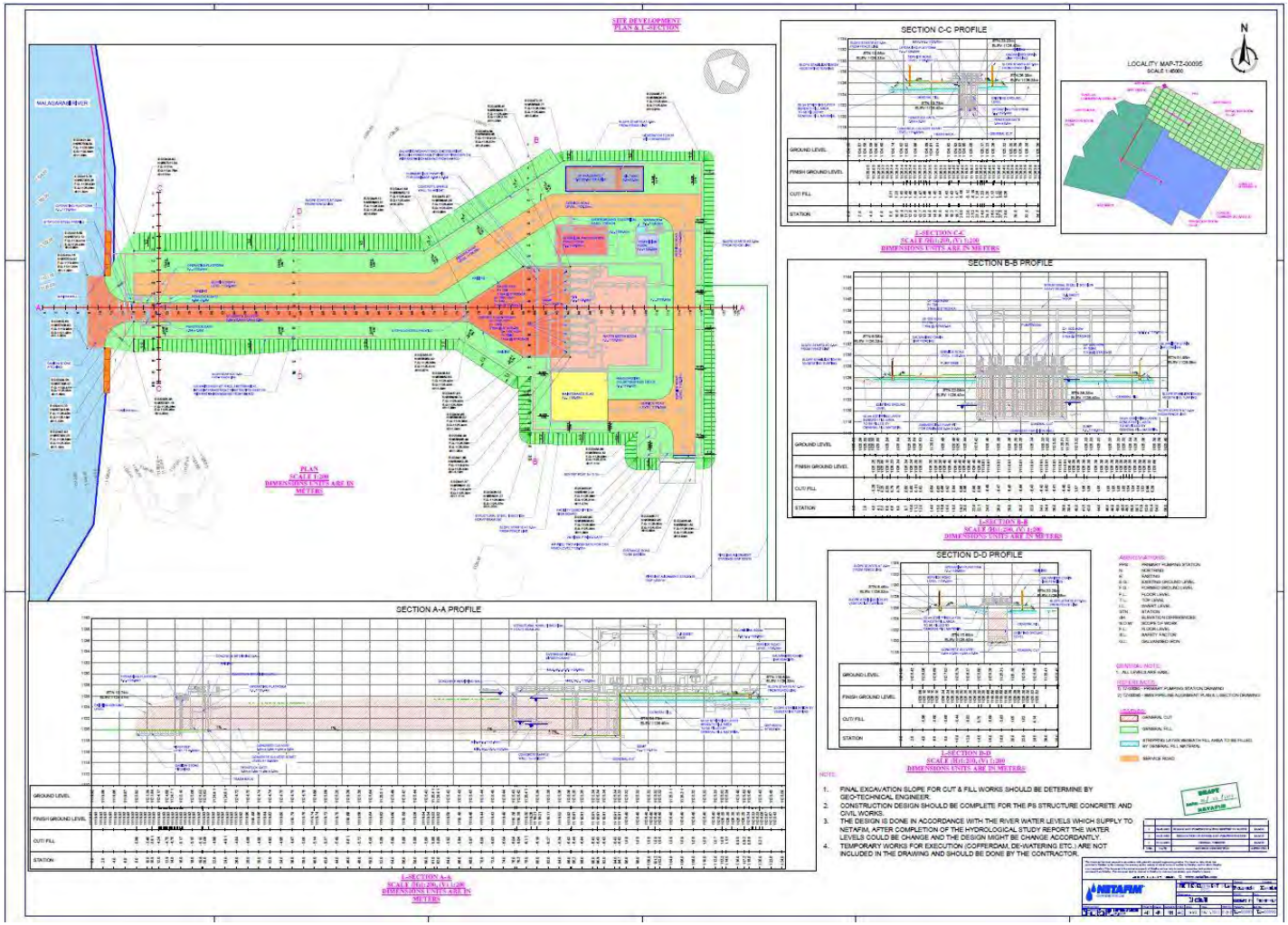


FIGURE 2.8 INTAKE 2 SITE DEVELOPMENT PLAN

FIGURE 2.9 INTAKE 2 ENTRANCE STRUCTURE PENSTALK STRUCTURE

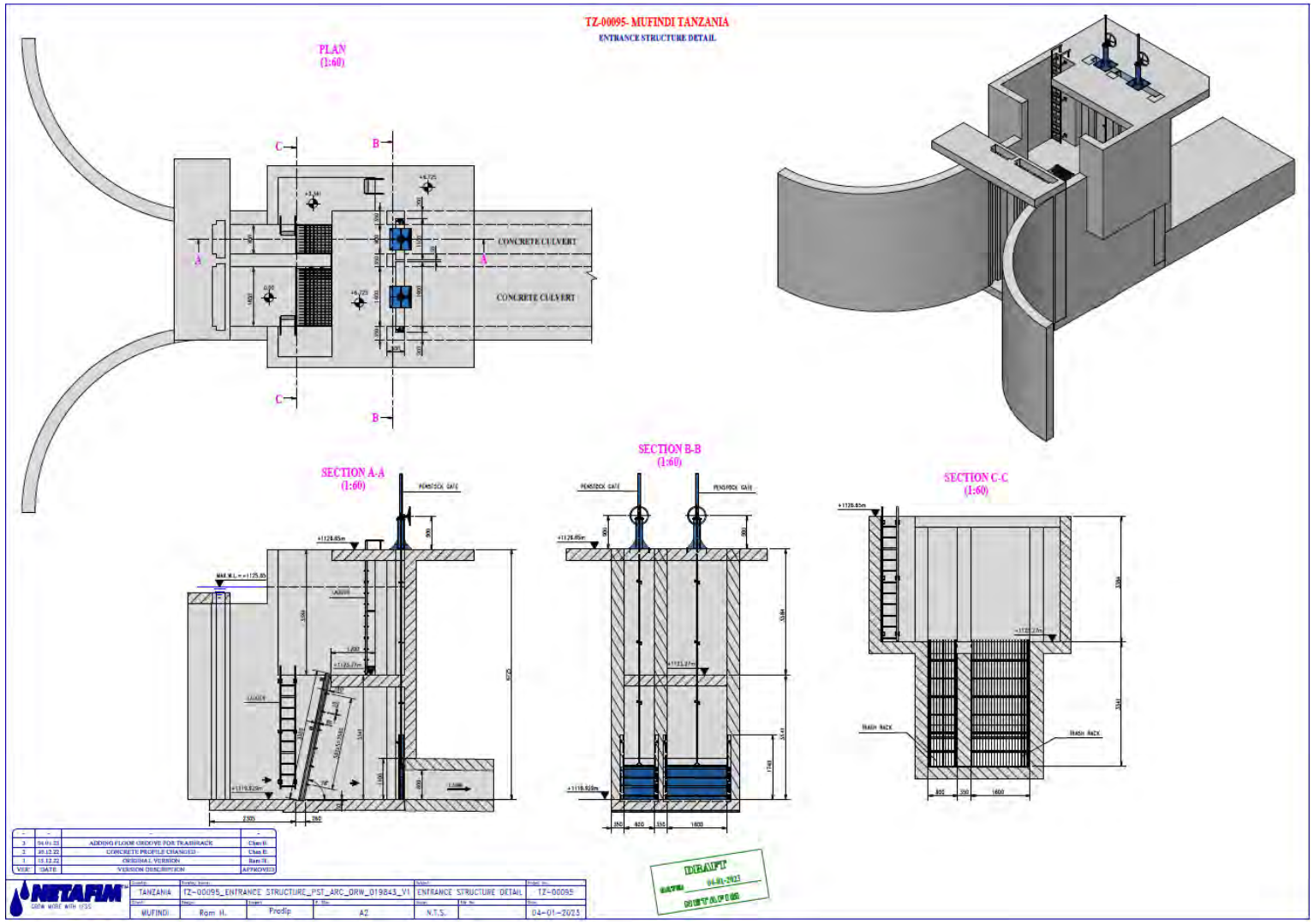


FIGURE 2.10 PRIMARY PUMPING STATION - CONCRETE

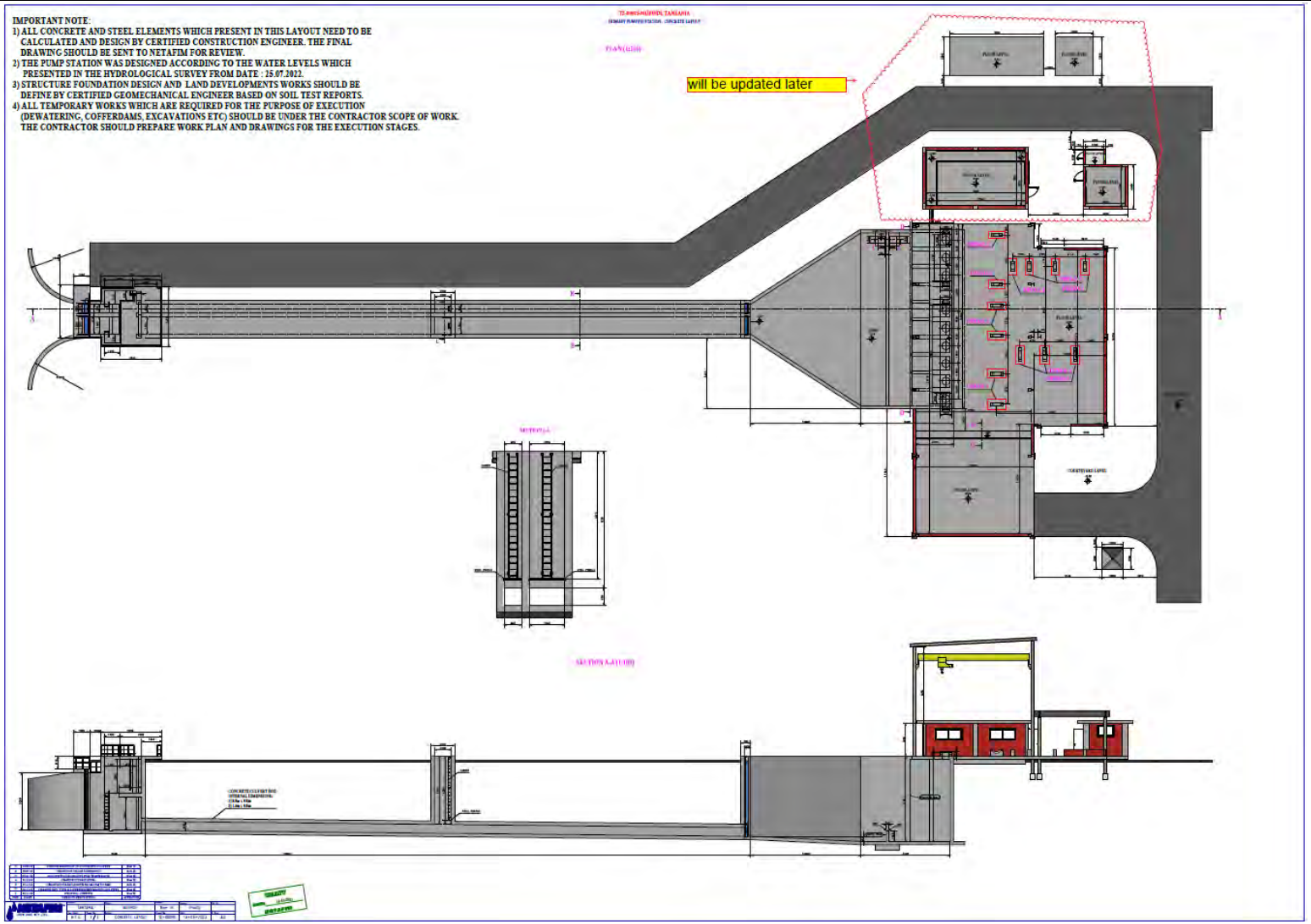


FIGURE 2.11 PRIMARY PUMPING STATION - CONCRETE

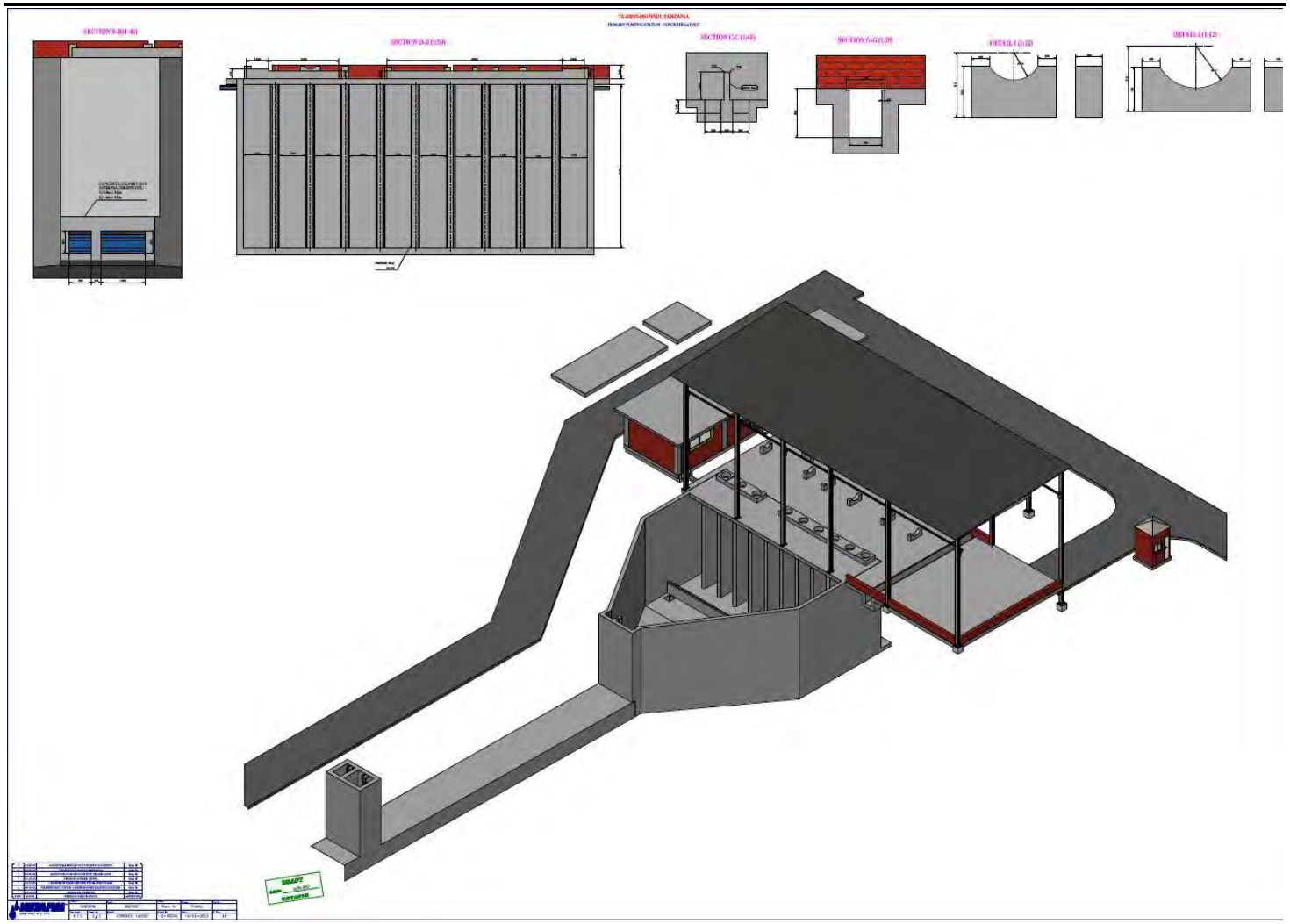
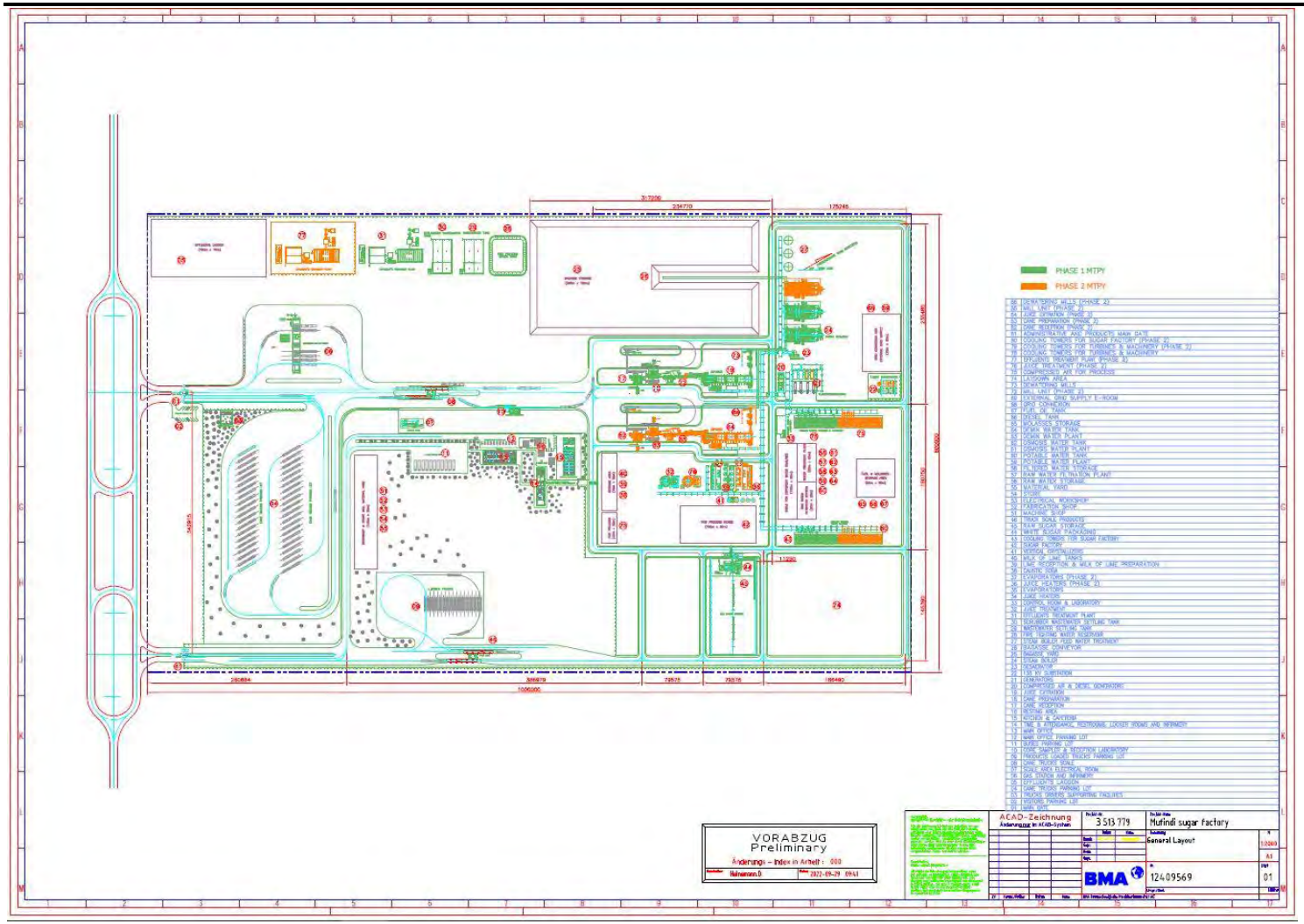


FIGURE 2.12 FACTORY DESIGN AND LAYOUT



2.3.1 PROJECT ACTIVITIES DURING CONSTRUCTION:

Phase One of the Project is comprised of the following activities:

2.3.1.1 LAND PREPARATION

Heavy machinery such as bulldozers, excavators, front-end loaders, graders, and tractors were used in the land preparation activities and activities involved in this stage include vegetation clearing, topsoil stripping and stockpiling, and development of sugarcane nursery and seedbed sites. Clearing of the land involves the following:

- Uprooting of tree stumps;
- Removal of vegetation cover; and
- Collection of cut wood, shrubs and other vegetation material for disposal to allow for further land preparation. The disposal of vegetation material will be done off site.

Other land preparation activities include land survey and demarcation of cane and irrigation fields based on the planned Project designs and layouts. During the site visit undertaken by ERM in October 2023, contractors responsible for construction of seven access roads and installation of irrigation infrastructure were present at site. At the time of the site visit, the following activities were in progress: construction of site offices, including the laboratory, site clinic, staff temporary housing and workers' camp; sugarcane plantation on Nursery A, irrigation infrastructure which includes the laying of drip irrigation pipes to Nursery A cane field, River Malagarasi intake one (including the water pipes, pump, fertigation tanks and control panel for the drip irrigation); the grading of access roads within the active site (Plot no. 215 Figure 2.1) and cane variety seed beds.

TABLE 2.1 DESCRIPTION OF ACCESS ROADS

Description	Length in metres
Haulage Roads	6,729.45
Primary Roads-P1,P3,P5,P7	5,931.64
Primary Roads-P2,P4,P6,P8	5,543.00
Secondary Roads	9,555.63
Perimeter Roads – N&S	10,301.34
Perimeter Roads – E&W	2,185.00
Maintenance Road	17,975.15
Total Roads	17,975.15

2.3.1.2 CONSTRUCTION OF INTERNAL FARM ACCESS ROADS AND PATHS

Internal access roads and paths required to access the temporary construction camp sites, nurseries, and plantations are under development. The access roads are being constructed as per the specification and design of the road construction engineers as demonstrated in Figure 2.6. The road from Kigoma to Kasulu where the Project site is located is tarmacked and is maintained by the Government of Tanzania. At the time of carrying out the site visit in October 2023, the tarmac road was in good condition.

2.3.1.3 DEVELOPMENT OF TEMPORARY CONSTRUCTION CAMP, WORKERS' HOUSING, STORES, OFFICES AND OTHER ASSOCIATED FACILITIES

Offices and management staff houses have been constructed from prefabricated containers of galvanised sheet metal with concrete floor slab. The casual labourers' quarters have been completed and consist of two ground-level blocks demarcated by a corridor which separates male quarters and female quarters. Each block has an approximate of five cubicles which can house 7-10 persons. The security quarters consist of one block where male security guards are accommodated. These housing quarters (for labourers and guards) are made from galvanised iron sheets (both walls and roofing) and concrete floor slab. Storage facilities have been constructed with steel shipping containers.

Material used for the construction of these facilities on site have been sourced locally e.g. iron sheets and wood/ timber, concrete blocks, cement, and ballast all obtained from nearby suppliers or from Kasulu and Kigoma Municipality. All the temporary buildings and facilities present at the site have been constructed in accordance with the contractor specifications and the architect's architectural plans and layout designs.

The following buildings and facilities required in the first phase of the Project that have been developed include[2]:

- Workshops.
- Administrative offices.
- Parking lots.
- Garage.
- Powerhouse.
- Offices.
- Agriculture experts' offices.
- Staff Houses.
- Laborers' and security personnel camp.
- Stores.
- Filling station.
- Firefighting equipment.

The office blocks include separate waterborne toilets for use by male and female workers. For staff houses, these are self-contained with each house having a bathroom and a toilet. For workers' camps, they have separate toilets and bathrooms for male and female workers. Water is connected to all these areas. At present, water for domestic use is from an on-site borehole. The borehole water goes through a filtration treatment process before being pumped to taps to the above listed areas for use.

2.3.1.4 CONSTRUCTION OF WATER INTAKE AND PIPELINE FROM MALAGARASI RIVER TO THE SITE.

This process involved construction of water intake pump stations (2 locations identified so far) by digging trenches and laying of water pipes that draw water directly from River Malagarasi.

[2] The cane yard has not been developed yet.

The pump house has an automated control system where the river water is pumped to a treatment unit where it then flows inside of three tanks containing soluble fertiliser for fertigation to the irrigation pipes in the cane nurseries. Trenches shall be dug using excavators and tractors.

2.3.1.5 SETTING UP WATER RESERVE TANKS AND LAYING OF DRIP IRRIGATION SYSTEM

Once the field preparation is complete, the irrigation specialists lay main pipelines, sub main pipelines and leave the raiser to connect with the drip line that is inserted into the field through a special plough at a depth of 15-20 cm based on the guidelines furnished in the Netafim– Irrigation service provider company design. The center-to-center drip line is 1.9 meters (m) with a dual row of 50 cm apart, to enable the use of mechanization concept in sugarcane farming. Sub Surface Drip irrigation system, which is considered the most advance irrigation system available worldwide has been proposed for this Project owing to the scale of irrigation and water availability in the region. Water reserve tanks will be constructed to facilitate irrigation throughout the farm.

2.3.1.6 LAND CULTIVATION, LEVELLING AND HARROWING

Sugarcane cultivation for this Project will be done on a greenfield site. The Project will follow the following steps during land cultivation in preparation for cane plantation:

a) Initial deep ploughing will be carried out immediately after clearing of vegetation by the use of excavator and a mould-board plough or tractor;

b) Exposing the land to the sun for one or two months;

c) Crushing of clods with a harrow;

d) Second crosswise ploughing will be done using heavy duty disc ploughs and an offset heavy disc harrow attached with clods crushing rollers behind;

e) Harrowing will again be carried out two to three times to ensure the soil is clod free; and

f) Levelling the land using tractors in preparation for the drip irrigation infrastructure.

2.3.1.7 SOIL PREPARATION PRIOR TO SUGARCANE GROWING

Conventional soil preparation will be carried out with ploughs and harrows. However, where there are signs of compactions, subsoiling or chiselling to a depth of 50 to 75 cm would be adequate to break the hard compact sub-pan layer. Disc shall be used to break clods. Sugarcane does not require a fine tilt, with excessive use of machinery damaging soil structure. Land shaping should be done to provide the required gradient for draining excess water during rainy season.

2.3.1.8 FIELD LAYOUT AND DESIGN

This step will involve the initial levelling of the sugar plantation field, establishment of drainage systems, contour planning and the construction of roads which ensures ease of access to the field. Drip irrigation system setup is made during this part of land preparation. Sugarcane is planted by adopting two systems, i.e. the ridges and furrows system and flat system. In all

these systems sugarcane sets are directly planted in the plantation fields. Refer to *Section 2.3* for Project design and layouts.

2.3.1.9 CANE NURSERY ESTABLISHMENT

This process has already been carried out and involved developing sugarcane seedbeds and nurseries A. At the time of ERM's site assessment, planting in Nursery B had not commenced. Sugarcane growing requires seedlings developed from established nurseries. Sugarcane nursery location is usually determined by the following criteria:

a. Areas whose soils are without problems like alkalinity, salinity, water logging etc.;

b. Areas with adequate irrigation facility;

c. Accessible areas for easy distribution;

d. Areas with good road for easy and quick transport; and

e. Areas close to the factory farm/research station farm/Government seed farm.

Refer to *Figure 2.3* for location of cane nurseries.

Preparations of nursery soils involved:

a. Proper ploughing and harrowing;

b. Application of 25 to 30 tonnes of FYM or cured press mud about 15 days before planting;

c. Application of high amounts of organic manures; and

2.3.1.10 FACTORY CONSTRUCTION

As part of the construction activities of the Project, a sugar factory with an installed capacity of 9,000 tonnes of cane crushed per day (TCD), with an expandable capacity to 15,000 TCD will be developed such that it will coincide with the cane development and availability. The key components of the factory to be constructed will include but not limited to:

The sugar processing plant will consist of:

- Cane yard & weighment
- Cane handling and preparation equipment
- Milling Section
- Bagasse handling facilities
- Bagasse yard
- Juice purification and filtration
- Evaporator station
- Crystallization and centrifugal
- Sugar drying / cooling
- Process water distribution
- Compressed air supply
- Sugar processing and packing
- Sugar bag storage and shipping

- Milk of lime preparation
- Condensation and water recooling system
- Molasses Storage
- Compressed air supply system
- Sugar storage
- Boiler & Turbine
- Raw water treatment plant
- Effluent treatment Plant
- Fire Protection system
- Administrative offices
- Technical offices
- Staff quarters & colony, etc.

The factory machinery and buildings will be constructed in accordance with the machinery supplier's specifications and the architectural plans layout. All the constructions will be done under the guidance of the Project Engineer.

The project is an integrated sugar processing factory project which comprises of various units such as plant & machinery, administrative building, residential colony, garden, etc.

The various activities as part of the Project are outlined below.

Detailed Engineering and Design

This activity involves engineering and design of the sugar plant and machinery as per the technical specifications and approved engineering standards.

Fabrication and Supply of Equipment and Machinery to Site

This activity includes the manufacturing and fabrication of plant machinery and equipment as per the approved specifications, quality standards and supply to the project site.

Sourcing and transportation of building, materials

Building materials will be transported to the project site from their extraction, manufacture or storage site using transport tracks. While the sourcing of the materials will be done from the neighbourhood, great emphasis will be laid on procurement of material from within the local area which will make both economic and environmental sense as it will reduce negative impacts of long-distance transportation of material to the project site. In case where materials are not available locally or nationally, they will be sourced oversea and transported by an appropriate means to the construction site.

Storage of materials

Bulky building materials such as rough stones, ballast, stones, and steel will be carefully pilled on site. Contractor will also put up a temporary structure where some equipment and materials such as paints, cements and others that are vulnerable to weather will be stored.

Excavation and foundation work

Excavation will be carried out to level the ground, prepare the site for construction of foundations, pavements, drainage system, water treatment and septic system. Use of heavy earthmoving machinery will be necessary more so during excavations.

Masonry, concrete, steel works and related activities

The construction of the factory and all its related components will involve a lot of masonry works and related activities. General masonry and related activities will include stone shaping, concrete mixing, plastering, slab construction and curing of fresh concrete surfaces. These activities are known to be labour intensive hence will be supplemented by machinery such as concrete mixers and vibrators. A lot of steel and civil works including sheet metal cutting, raising the roofing such as galvanized iron sheets, structural steels columns and trusts to the roof and fastening as will be undertaken. As such all the component of the project will be constructed as detailed in the approved structural and architectural plans. This will also be to the satisfaction of the proponent and all the approving authorities / agencies.

Plumbing

Installation of pipe work for water distribution, foul water and storm water draining will be carried out within the Project components. Plumbing will include wire and plastic cutting, the use of adhesives, metal grinding and wall drilling among others.

Electrical Work

Electrical work during construction of the premises will include installation of electrical gadgets and appliances including electrical cables, lighting apparatus, sockets etc. In addition, there will be other activities involving the use of electricity such as welding and metal cutting.

Removal of construction wastes from the sites

Once the construction will be complete, all waste generated at the site and remaining surplus materials will be removed for recycling, reuse in other projects or for safe disposal at a legal disposal site.

Landscaping

To improve the aesthetic value or visual quality of the factory once construction ceases, the proponent through contractor will carry out landscaping. This will include planting of trees, flowers, grass and hedges as will be applicable. It is noteworthy that the proponent will use plant species that are available locally preferably indigenous ones for landscaping.

Installation and Commissioning

This activity involves the installation and commissioning of the sugar plant and machinery as per the standards and procedures and quality norms provided by the various machinery suppliers under the supervision of the Project Engineer

2.3.2 PROJECT ACTIVITIES DURING OPERATION

The operation phase will involve planting, irrigation, propagation, fertilizer application and harvesting. This is likely to take place once KSP commences propagation of the sugarcane from the Nurseries to the commercial farm area. It is anticipated that the cane will be planted for 8-to-12 months to allow for stem cutting and mature from the nurseries to the commercial field.

2.3.2.1 SUGARCANE PLANTING

KSP intends to employ two sugarcane production systems, as follows:

- The sugar factory shall primarily rely on cane developed from own farm which is sufficient for the factory needs.
- It is anticipated that the surrounding communities will over time develop interest in commercial cane farming based on the economic opportunities presented by the factory.
- The cane harvested from out growers will supplement cane availability and raise sugar factory capacity utilisation.

Drip irrigation shall be applied on the land that will be graded and levelled. Areas with elevated terrain shall depend on rainfall for their growth. The cane varieties that will be grown in the proposed Project area will depend on whether the variety shall be grown on drip irrigated land or rainfed area. Table 2.2 shows sugarcane varieties that will be grown by the Project in the three phases of the project.

The Project shall utilize two methods of planting, i.e. manual and mechanical. The cane setts will be manually placed end to end (or overlapping) together with fertilizer in the furrow and then covered with soil. KSP will apply mechanical planting method, while running three operations simultaneously, i.e. Opening the furrow, planting the setts and application of fertilizers.

Closer spacing tends to result in higher yields, provided there is adequate moisture in the soil. For normal mechanical operations, the best row spacing is between 1.4 and 1.6 m. The setts shall be planted at a degree angle or laid horizontally in a furrow and thereafter covered lightly with soil until they sprout then the sides of the furrow are turned inwards. Optimum cover is 50 mm of soil.

Furrows for planting should be approximately 100 mm deep. Sets should be cut into five bud lengths.

TABLE 2.2 SUGARCANE VARIETIES TO BE GROWN BY KSP

No.	Variety Name
1.	R-579
2.	N-41
3.	N-25
4.	N-49
5.	N-53
6.	KQ-228

No.	Variety Name
7.	R-570
8.	MN-1
9.	Miscellaneous new Varieties
10.	N-41
11.	Nco-376

2.3.2.2 TIMING OF THE PLANTING OPERATION

The planting schedule differs depending on whether it for irrigated or rain fed land. The ideal time for planting is from mid-May to October under irrigation conditions when adequate moisture is present for a quick canopy and optimum use of dry season. Rain-fed conditions planting will be carried out from September to December once the rain has soaked the soil.

2.3.2.3 SUGARCANE PROPAGATION

Sugarcane growing requires seedlings developed from established nurseries. The cane seedlings shall be chemically treated before planting. Propagation shall be done by stem cutting off sections of the stalks called "setts" or seed pieces. Stem cutting has become the most common reproduction method, and each cutting must contain at least one bud. Stem cuttings of immature canes 8 to 12 months old will be used. Single node settlings will be used as a planting material in spaced transplanting technique. When the settlings are of about 6 weeks old, they will be transplanted in the commercial field. The KSP has developed seed multiplication plan for all three phases of the Project to ensure ample seedling supply. Table 2.3 presents the seed multiplication development plan.

2.3.2.4 FERTILIZER APPLICATION

Fertilisers will be applied with mechanical distributers. Sugarcane crop producing huge quantity of biomass generally demands higher amounts of nutrient elements. For producing higher cane and sugar yields on a sustainable basis application of adequate amounts of fertilizer nutrients viz., N, P and K shall be applied. Only water-soluble straight fertilizers shall be applied on drip irrigated plantations. The basal fertilizer that will be used will be Di-Ammonium Phosphate (DAP) while the top-dress type will be involve Urea. For rainfed plantations basal fertilizer will be DAP while top dress will utilize Urea and Muriate of Potash (MOP). He Project will ensure adherence to WBG EHS Guidelines for agribusiness and Food Production in its fertilizer use. Distribution of the types of fertilizer required for the Project for the entire three-phase seven years of Project development is shown on Table 2.3 and Figure 2.5

TABLE 2.3 TYPE AND DISTRIBUTION OF FERTILIZERS

				Phase 1		Phase 2		Phase 3	
Type	Name of fertiliser	Qty Per Ha (In Kgs)	Quantity in tons	Plant	Ratoon	Plant	Ratoon	Plant	Ratoon
Basal	Di ammonium Phosphate	100	3000	1100	0	1100	0	800	0
Top dress	Urea	400	26000	4400	0	4400	4400	4000	8800
	Muriate of Potash (MOP)	200	14800	2600	0	2600	2600	1800	5200

2.3.2.5 IRRIGATION SYSTEM LAYOUT

Drip irrigation design contains information on the location of cluster houses containing automatic valves which will regulate and control the irrigation process. These cluster houses cover an area of 100-150 Ha with 10-15 number of valves which are fully controlled by a computer located in the main irrigation control room.

The drip irrigation design has various pump stations which will monitor and control the irrigation process. All primary and secondary filtration units shall be available in the Control room. Additionally, each cluster house shall be fitted with one filtration unit to ensure the irrigation water is filtered thoroughly and ensure zero blockage.

The drip irrigation design indicates how the drip shall be implemented in the field, depending on direction of cane rows, drainage, and road design. The fertigation, which is an important aspect of this Project, will have a special automatic device that will mix the required quantity of specific fertilizers into the irrigation water and inject into each block as specified by the agronomy team to every fields/blocks. See Figure 2.4 and Figure 2.5for irrigation design for Nursery A and Nursery B.

2.3.2.6 WEED AND PEST CONTROL

The Project will apply herbicides to control weeds both in the nursery and plantations at various sugarcane growth stages. It is necessary to spray herbicide (weed killer) in order to prevent weed competition and losses in sugarcane production. Sugarcane is most susceptible to weed competition during the first eight to 10 weeks after cane begins to sprout. Approximately 8–10 weeks after the herbicide application it may be necessary to follow with a hand-weeding operation. Young sugarcane needs plenty of moisture and protection from weeds. The reference standards for pesticides use will be WBG EHS Guidelines for agribusiness and Food Production.

Farmers will use a cultivator implement which is hitched to a tractor to break up the soil and uproot weeds. When the sugarcane is taller, sunlight can’t reach the ground, preventing most weed growth. KSP shall apply a series of herbicides to control weeds at various stages of sugarcane growth and throughout the three phases of the project. Additionally, some weeds grown alongside the drainage system outside the sugarcane plantation will be controlled using

the same methods. Table 2.4 provides specified herbicides, dosage, and the stage of sugarcane growth when the chemicals shall be applied.

TABLE 2.4 CHEMICAL HERBICIDES TO BE APPLIED AT VARIOUS STAGES OF THE PROJECT

	Recommended Dose/Ha (in Ltrs)	Total area	Quantity Required (Ltrs)	Unit	Phase 1	Phase 2	Phase 3
Pre-emergence							
Ametryn+attrazine	3	30,000	90,000	LTR	33,000	33,000	24,000
Acetachlor/Metalachlor	3	30,000	90,000	LTR	33,000	33,000	24,000
Pendymethylene	3	30,000	90,000	LTR	33,000	33,000	24,000
Post-emergence							
2,4 D	3	30,000	90,000	LTR	33,000	33,000	24,000
Metribuzyne	3	30,000	90,000	LTR	33,000	33,000	24,000
Spot Application							
MSMA (30 % of the area)	2	10,000	20,000	LTR	7,000	7,000	6,000
2,4 D (30% of the Area)	3	10,000	60,000	LTR	22,000	22,000	16,000
Clearing of weed growth in Drainages/Roads							
Glyphosate	3	5,000	15,000	LTR	5,000	5,000	5,000

2.3.2.7 PEST CONTROL AND DISEASES CONTROL

Sugarcane can become infested by a variety of diseases and pests. Prior to seedling planting the seedlings will be treated for pests and diseases. Specific chemicals that will treat the seeds are presented in Table 2.4. Pesticides and other disease treating chemicals shall be sprayed aerially using drones mounted with a container of 350 litters capacity, two in the first phase and an additional two in the second phase of the Project development. Table 2.8 presents some of implements that will aid in chemical preparation and spraying in the sugarcane plantation.

2.3.2.8 HARVESTING

Sugarcane can be harvested after 12 to 16 months when it is 2 to 4 m tall. It is ideal to harvest sugarcane when rainfall is less frequent and the plant's sugar content is at its highest.

The KSP Project will apply a fully mechanized method. There will be no burning of cane prior to harvesting.

2.3.2.9 FIRE FIGHTING

Sugarcane plantation and various accommodation and office buildings that will be developed in Phase One and Phase 2 of the Project will require safety mechanism against fire hazards and

risks. In the residential area the Project will make use of a fire hydrant system and the conventional ABC powder fire extinguishers placed at strategic points. In the farm there will be two fire-fighting tankers attached with high pressure pumps of hose length 200-400-meter distance fitted with jet nozzles. The tank capacity will be 10,000 litres each.

The factory will install a fire ring line along the factory perimeter with risers equipped with hydrants and break glass points holding 50m long fire hoses and 250-300m hoses for bagasse yard. The ring line will be connected to a 2500m^3 fire hydrant water tank with an automatic pump that will be used for firefighting in case of a fire outbreak. The boiler and the bagasse yard will be equipped with firefighting sprinklers overhead with automatic nozzles that will release powerful jets of water to quench any fires in these areas backed up by the fire ring line.

Other firefighting equipment will include a fire alarm; various types of firefighting canisters mounted along the walls of the buildings and fire hoses with lengths of 50 m to 80m in strategic places in the factory and the factory grounds.

2.3.2.10 WATER SUPPLY

The Malagarasi River and several other tributaries are perennial surface water sources of good quality water. Such water sources shall be used for industrial purposes. The Project will use borehole water for domestic and industrial purposes. The Project has obtained permission to sink boreholes by Lake Tanganyika Basin Water Board vide Permit No.84300141 Dt.05.10.2023. The water usage plan during operational phase of the Project is summarized in Table 2.5.

TABLE 2.5 WATER REQUIREMENT FOR KASULU SUGAR PROJECT DURING OPERATION

Targeted Use	Unit	Volume
Farm	Million M3/annum	200*
Industrial	per annum M m3	1.58
Domestic	per annum M m3	0.02
Permitted water abstraction volumes	Per annum M m3	536

* The daily requirement is 17 m^3 per second with the maximum irrigation period of 20 hours which comes to 1,224,000 m^3 per day. The Company shall require a minimum of 135 days of irrigation in a year.

The Project has obtained approval from Lake Tanganyika Water Basin Board to abstract 1,468,800m^3/day of surface water from Malagarasi River vide permit number 84100371 dated 16th February 2022 (Appendix B) for irrigation and 11,232 m^3/day for institutional uses via permit number 84100373.

2.3.2.11 ELECTRICITY

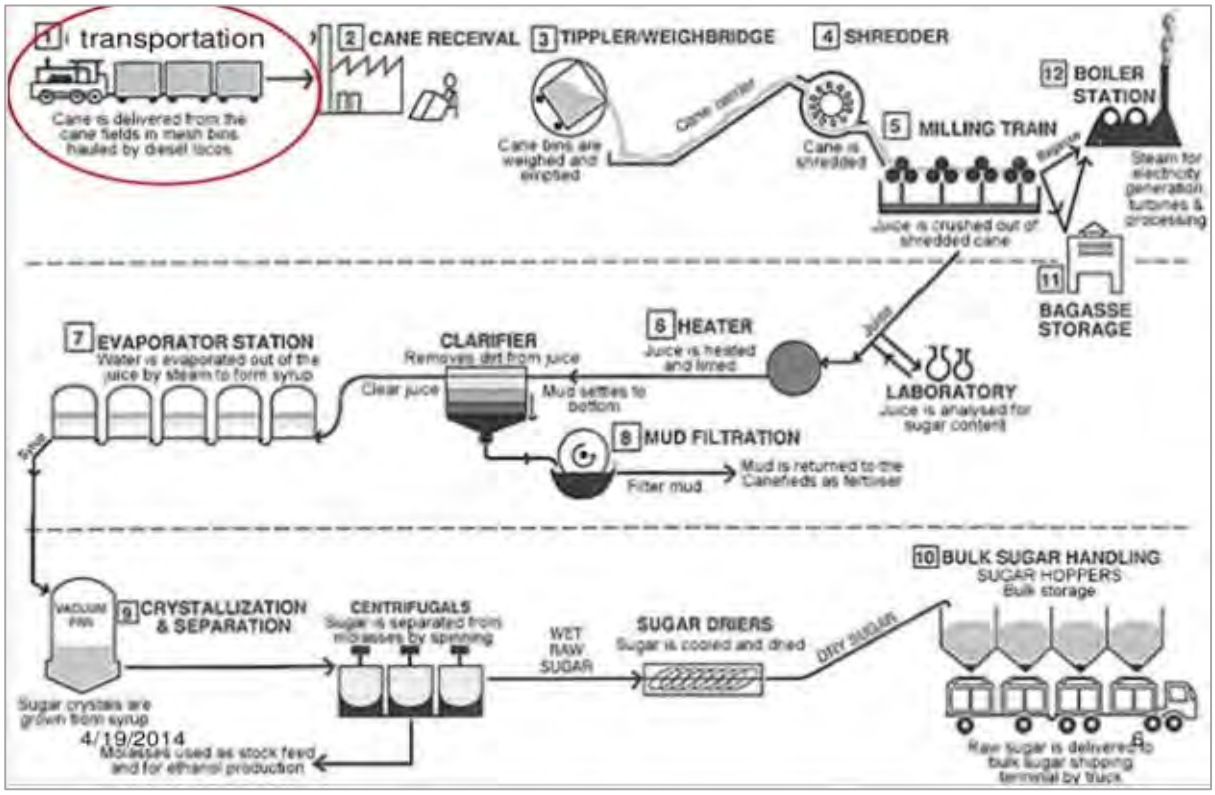
The main source of power is Tanzania Electricity Supply Company (TANESCO). This will mainly be a power backup as the factory is expected to generate sufficient power for its own needs. The total power requirement will be 22.5 MW with 12.5 MW for factory and domestic usage and 10 MW for irrigation and agriculture usage. The sugar factory will have a green power

cogeneration plant with capacity of 38 MW. The excess power will be available for export to the national power grid.

2.3.2.12 FACTORY OPERATIONAL ACTIVITIES

The key sugar processes will involve collection and transportation of sugarcane from fields/sugar plantations to the factory, receiving sugar cane and processing the sugarcane to white/brown sugar. The factory operations will be as shown in Figure 2.13 below:

FIGURE 2.13 SUGAR PROCESSING FLOW CHART



The key cane processes are as highlighted below:

Cane weighment, handling and preparation

The cane harvested from farm will be transported by trucks and tractors to the factory. Cane will be weighed and fed into carrier and cut into fine pieces by means of sets of knives and Fibrizor / shredders. The prepared cane is then fed to a series of mills to extract the maximum quantity of juice.

Juice Extraction and handling

The prepared cane is then crushed by passing through mills. Hot water is added in the course of crushing as imbibition's water for better extraction of juice from sugarcane. After crushing, the bagasse is sent to boiler as fuel and juice is sent for purification and recovery of sugar.

The bagasse will be burnt in the boiler furnace to heat water in the boiler to generate steam which is channelled to steam turbines to generate power to run the sugar manufacturing plant. In each ton of sugarcane processed, bagasse will be between 28%– 32% of the total cane.

Juice clarification

Upon receiving the raw juice from the mill, the raw juice from the mills is weighed before processing. The juice will then be heated to a temperature of 75°C and treated with the milk of lime to maintain the pH of the treated juice at around 7.2.

The juice is heated again to 100-105 0C in another set of juice heaters. The hot juice is sent to clarifier. Clarified juice is decanted out and sent for evaporation in a set of multiple effect evaporator bodies.

Evaporation of Juice

The clear juice from clarifiers is fed to the multiple effect evaporators, which works under vacuum. Here, most of the water is evaporated and the clear juice attains the consistency of syrup. The juice at 15% is concentrated in the evaporators in to syrup of 60 - 65% concentration. The syrup leaves the last body of multiple effect evaporators.

Crystallisation

The syrup is pumped to the pan floor and stored in tanks. Then it is drawn into vacuum pans where further concentration of syrup takes place. The concentration is carried out to the stage of super saturation when the sugar of crystals is formed.

As a result of continuous boiling, feeding syrup now and then up to the maximum level in the pans, the original crystals go on growing in size up to the required size. The boiling is so controlled that the crystals grow only to the required size.

The mixture of crystals and mother liquor is called the 'Massecuite'. The massecuite is tightened to the required degree of concentration and then dropped into a series of V-shaped vessels called crystallizers, where the massecuite undergoes some cooling thereby increasing the exhaustion of mother liquor. The boiling is termed 'A', 'B' or 'C' depending upon the type of material that is boiled in the pan.

Separation by Centrifugation

The massecuite from the crystallizers is fed to the centrifugal machines where the separation of sugar crystals and mother liquor takes place. When the machine rotates at a high speed, the mother liquor or molasses is thrown out through the screen provided for the purpose and the sugar is retained in the basket itself. The sugar is washed well free from adhering film of molasses, dried and then dropped on to the grasshopper conveyor.

The sugar from 'the first boiled or A - massecuite alone is sent for bagging. The first boiled molasses or A-heavy molasses is again taken into another set of vacuum pans and boiled again, dropped as 'B' massecuite which is again centrifuged in a separate set of centrifugal machines for separating the sugar and molasses called B-heavy molasses, while the B- sugar is taken as seed for A-massecuite.

The B-heavy molasses is again taken in another set of pans for further exhaustion of sugar. The massecuite resulting from the boiling of B-heavy molasses is called 'C' -massecuite, which is again after sufficient cooling is fed to a separate set of centrifugal machines for separating the sugar and molasses.

This molasses is called final molasses from which no more sugar can be extracted is sent to storage tanks after weighment.

Sugar handling and Storage

Sugar stored in large Silos, are then fill into 50 kgs bags or 1 kg, 2 kg and 5 kg bags depending upon the requirement.

Quality Control

The Factory will be equipped with state-of-the-art quality control department consisting of a) online analysers for Critical process parameters and b) Laboratory facilities and equipment for routine analysis of parameters including but not limited to:

a) Pol in Cane, Pol in Bagasse, Pol in final molasses, total losses
b) Juice % cane, Fibre % cane, pol in mixed Juice
c) Inversion analysis
d) Bagasse moisture
e) Insoluble solids
f) Reducing sugars analysis

2.3.2.13 EFFLUENT TREATMENT PLANT

Effluent treatment plant (ETP) for the proposed sugar plant has been designed to process 2300 m^3 of the effluent per day with the quality of the treated effluent conforming to the Environmental Management Regulations 2007 as well as Tanzania Bureau of Standard EMDC 1(182) DTZS.

Brief description of the process of effluent treatment process is given as below.

Effluent generated from the proposed sugar plant shall be directed to a well-designed effluent treatment plant. The effluent will be treated primarily by physio-chemical process and secondary treatment by biological process.

All the effluent from sugar factory, shall be directed by gravity to bar screen chamber (BSC) to arrest large floating particles entering into effluent treatment plant. After screening effluent flows by gravity to oil and grease trap for removal of floating oil and grease. Effluent will be collected in the equalization tank to achieve a steady organic and hydraulic loading on the downstream treatment units.

From the equalization tank the effluent will be pumped at an average flow rate to the Anaerobic filter in which BOD reduce up to 80%. After digester it will send to aeration tank then clarifier where suspended solids will be allowed to settle. The settled solids (sludge) will be partially sent to aeration tank and remaining disposed on the sludge drying beds.

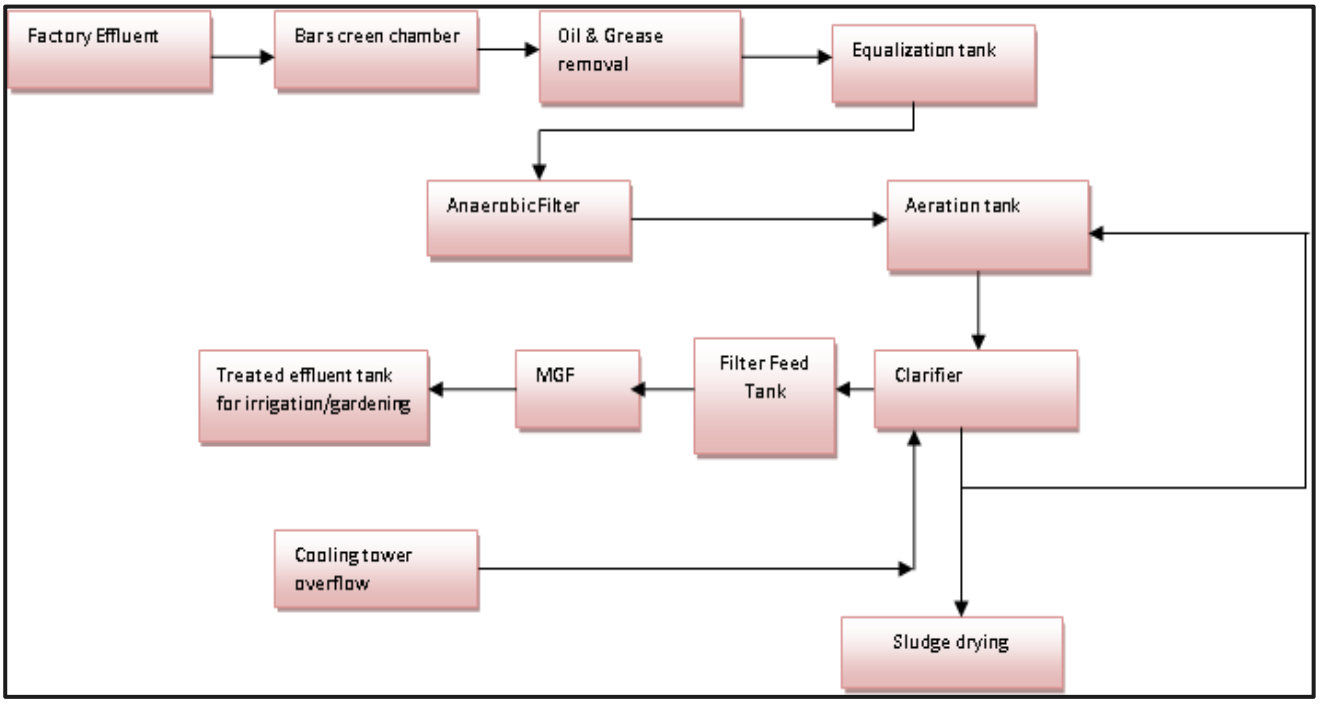
In Aeration process, the effluent is treated due to biological degradation of organic matter by aerobic micro-organisms resulting into effective reduction in BOD and COD values. Motorised surface aerators shall be provided in aeration tank for aeration purpose. Nutrients wills be dosed at aeration tank for growth of bacteria manually as required.

The mixed liquor (effluent & biomass) from aeration tank enters the clarifier by gravity where the biomass is separated from the treated effluent by settling.

Constant Mixed Liquor Suspended Solids (MLSS) will be maintained in aeration tank in definite proportions by recycling the bio-sludge trapped by the clarifier. Recycling of bio-sludge will be done by non-clog, centrifugal, semi open type continuous duty suitable sludge re-circulation pump. Excess sludge will be dewatered on the Sludge Drying Beds.

The treated, clear effluents will be sent to treated effluent storage tank. The treated effluent will be utilized for farming activities, gardening area as well recycled for process application in the Sugar Plant.

SCHEMATIC FLOW DIAGRAM EFFLUENT TREATMENT PLANT IS AS BELOW:



2.3.2.14 FACTORY BY-PRODUCTS

Bagasse

The other by-product from the cane milling process is a fibre material known as bagasse. Bagasse is the fibrous residue that remains after sugarcane has been crushed and juice extracted. During operation, there is likelihood of generation of excess bagasse after the bagasse utilisation in the boiler for power and steam generation. At 9000 TCD Capacity, the expected bagasse generation will be ~~30~~ 28 -32%%. The bagasse shall be used as fuel while any excess amounts can be used for the purposes of making charcoal briquettes for domestic fuel or sold out for those who may reuse it.

Press Mud

The final by product of the process will be press mud from the rotary vacuum filtration section of the plant; this will be used as manure for the cane fields. Particularly the press mud can be used to reduce the use of chemical fertilizer as it is an excellent soil conditioner.

Molasses

Molasses is by-product obtained during the sugar manufacturing process and is rich in fermentable sugar content, which cannot be converted into sugar crystals. The quantity of molasses generated shall be 4.0 - 4.5% on cane. The molasses will be processed in a distillery plant to produce Extra Neutral Alcohol (ENA)/Rectified spirit.

Molasses shall be sold to Local Distillery Plant in Tanzania and East African countries and will be also used as input material to Distillery plant.

2.3.2.15 MANAGEMENT OF WASTE

Solid waste management

The proposed Project will generate mainly office and domestic types of solid wastes including paper, packaging materials, plastics, organic (vegetables and food wastes) from campsites and accommodated permanent and casual labourers. The Proponent will designate an area for waste collection from all Project components for subsequent delivery to waste handlers registered by NEMC. Waste will be sorted according to their types and treated accordingly. Recyclable waste such as paper, bottles, plastics will be collected and disposed through licensed waste handlers.

Liquid waste management

The Project will mainly generate grey and black water from sanitary facilities and kitchen/dining areas. Wastewater generated will be directed to the septic tanks and soak away pits which will be constructed on site for onsite treatment. Arrangements will be made with local sewer exhausters in case the septic tanks are full so that they are properly emptied and discharged by specialized vehicles.

Leachate Management

Due to the composition of the bagasse, when it rains and water percolates through it, a dark liquid called leachate is formed. The proposed Project has put in place measures to ensure that disposal of this bagasse is compliant to ensure control the leachate which entails prevention of the leachate from seething into the ground but instead directing it into drains and collecting it in some well-designed leachate collection ponds. Upon collection, the leachate will be exhausted into collection ponds for treatment at the effluent treatment plant or pumped directly to the treatment plant and the analysis of the treated effluent done to ensure that the treated effluent quality is conforms to NEMC set standards. The bagasse yard will have the topsoil scrapped off and well compacted to prevent loose soil. There will be drainages which directs the formed leachate to the lowest part where leachate collection ponds are located.

The sugar factory will have a well-equipped laboratory with experienced manpower who will be undertaking hourly control analysis of the effluent treatment system parameters to ensure the

treatment plant gives only required output parameters in line with The Environmental Management Act 2007 and relevant NEMC, Tanzania standard.

Hazardous waste management

Hazardous wastes expected include damaged electrical wires, electronic wastes such batteries, copper wires, cables and printers. All electronic waste will be managed as per the national e-waste regulations.

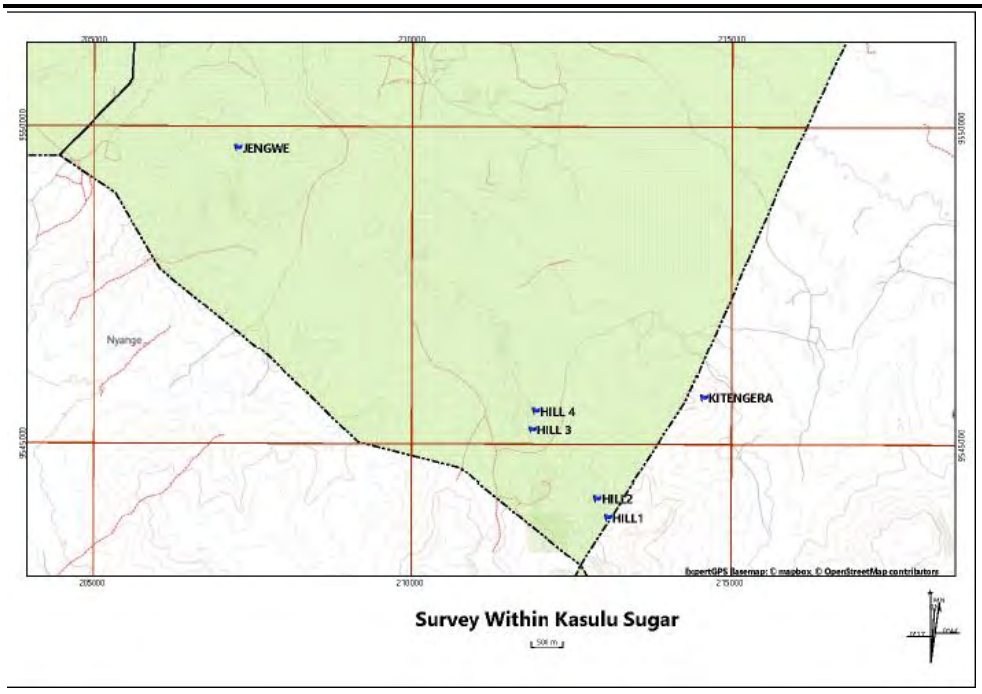
2.4 RESOURCE REQUIREMENTS

KSP will require materials for construction of the sugar plantation, Project infrastructure e.g. the access roads, irrigation systems and factory development. A survey in search for construction materials, specifically stone and aggregate, was carried out by C-labs (Tz), that considered five locations. Three of the locations were within the Kasulu sugar farm and two of the locations were outside the boundary of the Kasulu sugar farm, but within the vicinity of the Project.

2.4.1 EXPLORATION OF MATERIALS

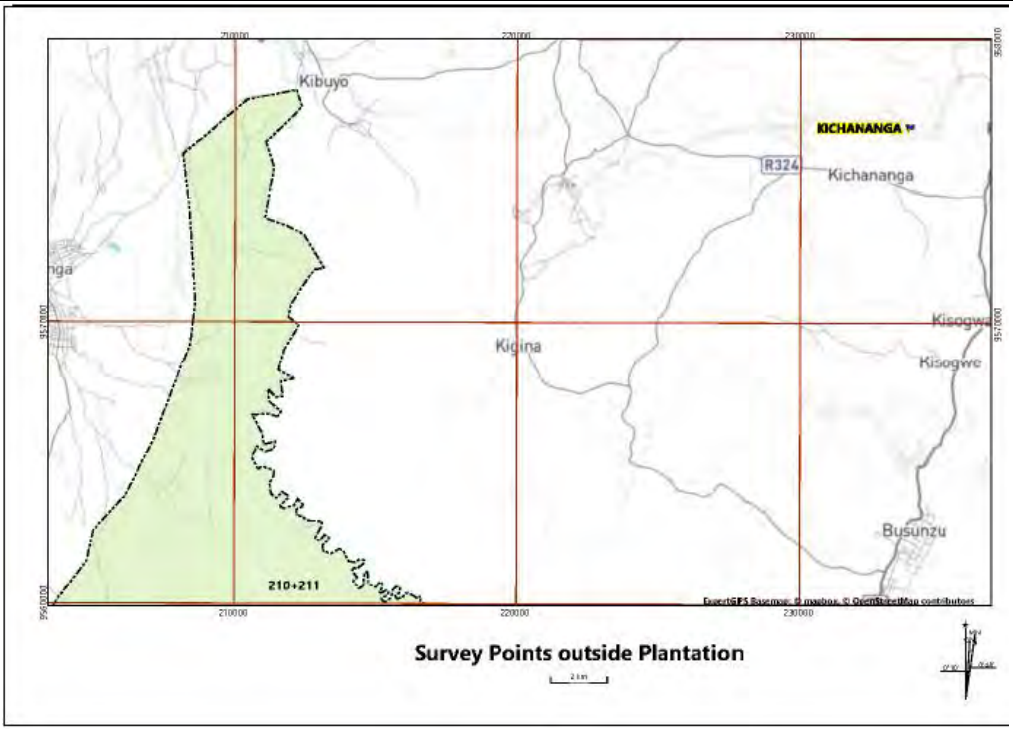
An investigation for availability of stone material was carried out by C-Labs (Tz) Ltd in August 2022 using Electrical Resistance Survey to identify construction rock sources at Kasulu Sugar Farm, Kigoma, Tanzania. Five areas were surveyed as shown in the maps below. The aim of the investigation was to identify suitable rock sources for construction of KSP.

FIGURE 2.14 SURVEY POINTS WITHIN THE BOUNDARIES OF KASULU FARM



Source: Rock Sources Investigation Report 2023 by C-Labs (Tz)

FIGURE 2.15 SURVEY POINTS OUTSIDE OF THE BOUNDARIES OF KASULU FARM



Source: Rock Sources Investigation Report 2023 by C-Labs (Tz)

Survey of the locations were carried out within the boundaries of the farm namely:

- Hill 1 and Hill 2 -First location, Hill 3 and Hill 4 – Second location, Jengwe – Third location.
- Two other locations, outside the Kasulu farm boundaries namely Kitengera and Kichananga were also surveyed.

According to the survey, Kichananga was highly considered because there is an active quarry in the vicinity of the Kasulu farm.

Coordinates of points within the areas are given in the Table 2.6 below.

TABLE 2.6 COORDINATES OF POINTS IN THE SURVEY AREAS (UTM WGS84)

Location	Easting	Northing
Hill 1	213136.26	9543929.96
Hill 2	213015.25	9544243.70
Hill 3	211896.03	9545223.41
Hill 4	211949.53	9545514.15
Jengwe	207254.33	9549648.07

Location	Easting	Northing
Kitengera	214571.13	9545726.98
Kichananga	233887.05	9576888.61

The survey report listed three viable areas for suitable quarries as sources of rock for construction, in the order of availability and quantity.

- Kichananga
- Kitengera
- Hill 1

2.4.2 EQUIPMENT

The Table 2.7 below indicates the types of equipment which shall be used during the three phases of the Project.

TABLE 2.7 HEAVY MACHINERY AND EQUIPMENT LIST FOR SITE PREPARATION

No.	Item	Specifications	No. items	Phase 1	Phase 2	Phase 3
1	Excavator		10	6	4	0
2	Dozer		10	6	4	0
3	Wheel Loader		10	6	4	0
4	Grader		4	2	2	0
5	Compactor	17-ton capacity	4	2	2	0
6	Dumper truck	14 m^3 capacity	40	30	0	0
7	Low-bed transportation		5	3	2	0
8	Water bowser	10,000 litres	4	3	1	0
9	Fire-fighting tanker	10,000 litres	3	2	1	0
10	Mobile Fuel bowser	6,000 litres	3	2	1	0

The Table 2.7 above shows the heavy equipment and machinery type, specification and number required for land clearance, digging trenches and grading of access roads for the three phases of the Project. The Table 2.8 presents the tractor and implement specifications and the number required during the three phases.

TABLE 2.8 LIST OF EQUIPMENT WITH SPECIFIED TYPE AND NUMBER FOR EACH OF THREE PHASES

Item	Equipment Specification	Total number	Phase 1	Phase 2	Phase 3
Tractor	400 HP & Above	10	6	4	0
Tractor	300 HP	5	3	2	0
Tractor	225 HP	2	1	1	0
Tractor	190 HP	30	20	10	0
Tractor	150 HP	20	10	10	0
Tractor	110 HP	15	8	7	0
Implements					
7 tyne Ripper heavy duty		3	2	1	0
Disc plough	34" Dia /22 Nos. Disc	4	3	1	0
V blade		4	3	1	0
Disc harrow	28" Dai/40 disc offset	4	3	1	0
Ejection scrapers		2	2		
Finishing scrapers		2	2		
Whole stalk Planter		2	2		
Rome plough	36” dia	2	2		
Rome backwork disc harrow	28”dia	2	2		
Planters	Dual row billet planter	2	2		
Cane Harvester	Billet	2			
In-field loaders	Self-tipping	8			
Grab loaders	60 tons per hour capacity	2			

2.4.3 MANPOWER/HUMAN RESOURCES

The breakdown of workers that will be engaged at different stages of the Project development depending on their area of specialization or skill (Table 2.9). The Project will employ skilled, semi-skilled and unskilled workers. Skilled workers will comprise of subject matter experts e.g. Project engineers, E&S Managers, etc. Semi-skilled workers will involve workers knowledgeable in certain skills either through training or on-the job learning e.g. masonries, carpenters, machine/ equipment operators. Unskilled workers will generally be casual workers e.g. workers planting sugar cane, sweepers and general casual construction workers. A Contractor will be responsible for this phase with supervision from the proponent management.

Recruitment of construction workers will mainly be from the surrounding nine villages. Other workers will be recruited from the nearby Makere sub urban, and some from other parts of the country. Migrant workers may be employed for skilled work that is not available in the neighbouring communities. Recruitment during this phase will aim to ensure that all workers are trained, especially on health, safety and environmental management issues.

The recruitment of workers will give priority to the local communities. Table 2.9 presents the labour/manpower requirements for the Project.

TABLE 2.9 MANPOWER REQUIREMENTS FOR THE PROJECT

	LABOUR REQUIREMENT FOR THE PROJECT										
S.NO	YEAR	UNSKILLED	SEMI SKILLED	SKILLED	HIGHLY SKILLED	SUPERVISORY	MANAGERIAL	MIDDLE MANAGER	SENIOR MANAGER	EXPATRIATE	TOTAL
		NO EXPERIENCE	LESS THAN 1 YR	1-2 YEARS	MORE THAN 2 YRS						
1	2023	100	30	15	5	10	4	2	2	7	175
2	2024	125	40	20	10	15	5	4	4	15	238
3	2025	400	100	75	25	25	10	10	10	30	685
4	2026	700	150	100	50	50	25	15	15	40	1145
5	2027	1000	200	150	75	75	50	25	25	50	1650

2.5 PROJECT SCHEDULE

Development of the sugarcane plantation is ongoing with commercial planting planned to begin in 2025 and first commercial harvest expected in 2026. The cane development plan is aligned with the planned completion of installation of the Sugar Factory in the second half of 2026. However, the Project life span is 98 years if it has to match the life of the land rent agreement with Tanzania Investment Centre (TIC). This SLIP will focus on phase one and Phase two activities which is anticipated to take three years (up to 2026).

3. POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 NEED FOR AN ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT

As per national legislation, a full ESIA is required for the proposed sugarcane plantation Project. The aim of the ESIA is to therefore assess the current baseline E&S status and determine the E&S risks and impacts. This information has been used to propose appropriate mitigation measures, develop an Environmental and Social Management and Monitoring Plan (ESMMP)

In addition to the applicable regulations and norms of the Government of Tanzania, the ESIA update process in development of this SLIP has been undertaken in accordance with the l the IFC PSs.

3.2 COMMENTARY ON NATIONAL ESIA

The Project falls under the mandatory list of projects within the Environmental Impact Assessment and Audit Regulations (2005), of which a full EIA is required. An ESIA Study in line with national legislation was carried out between April and August 2022 by an in-country E&S consulting company (PaulSam Geo Engineering Co Ltd). The ESIA Report was submitted to the Tanzania National Environment Management Council (NEMC) in August 2022 and was issued with a certificate (Certificate No. EC/EIA/2022/8512) dated 16th February 2023.

Specific conditions to the EIA certificate provided by the Vice President Office under the National Environmental Management Council (NEMC) as part of the Environmental Management Plan Implementation of the EIA certificate were made available to ERM during the ESIA update process.

3.3 RELEVANT NATIONAL POLICIES

3.3.1 CULTURAL HERITAGE POLICY, 2008

Section 4.6.2 of the Cultural Heritage Policy of 2008 stipulates that a Cultural Heritage Impact Assessment (CHIA) should be conducted before undertaking the development projects and the costs towards CHIA studies will be part of the Project cost.' However, the Cultural Heritage Policy of 2008 allows Local Government Authorities to pass by-laws for the preservation of cultural heritage resources in their area of jurisdiction.

The Project will abide to the provision of this Policy during Project execution, in line with the Cultural Heritage Management Plan (CHMP) prepared for this Project.

3.3.2 CULTURAL POLICY, 1997

The policy recognizes Kiswahili as the national language, and the language of communication and for creative expression. The Policy stipulates that vulnerable people and women shall be involved in research, revived, conserved, and develop cultural industries.

The Project will abide to the provision of this Policy during Project execution, in line with the KSP CHMP prepared for this Project.

3.3.3 ANTIQUITIES POLICY, 2008

The Antiquities Policy of 2008 defines Physical Cultural Resources (PCRs) as any tangible material that represent contemporary, historic, and pre-historic human life ways. Section 2.1 of the Policy states that already discovered PCRs shall be preserved and conserved in the National Museum of Tanzania as stipulated in Museum Act of 1980. In addition, Sections 4.2.1 - 6 elaborate on how stakeholders (government institutions, private sectors and public) should be involved in the conservation and management of PCRs.

The Antiquities Policy provides guidance on the implementation of the Tanzania Antiquities Act (Act No. 10 of 1964; amended 1979, Act No. 22) for government and non-government stakeholders. Key elements of the policy include the following:

- Defines the roles and responsibilities of different cultural heritage stakeholders including the public, individuals, corporations, and academic institutions in managing cultural heritage resources;
- An analysis of the ways in which cultural heritage activities are managed and administered by the government;
- Clarifies measures by which cultural heritage resources will be protected, managed, preserved, conserved, and developed; and
- An analysis of best practices for conducting research and conservation of cultural heritage resources.

KSP will observe the requirements under this Policy to conserve the cultural heritage resources as the Project progresses from phase 1 to phase 3 activities. KSP shall adhere to the Cultural Heritage Management Plan (CHMP) prepared for this Project.

3.4 RELEVANT NATIONAL ACTS AND REGULATIONS

3.4.1 ANTIQUITIES ACT (ACT NO. 10 OF 1964) AS AMENDED (ACT NO. 22 OF 1979)

The purpose of the Act is to provide legal statutes for the preservation and protection of sites and articles of palaeontological, archaeological, historical, or natural interest. The Act provides legal protection for relics, monuments, and protected objects, as follows:

- **Relic**: any movable object made, shaped, painted, carved, sculptured, inscribed, or otherwise produced or modified by human agency before the year 1863, whether or not it shall have been modified, added to, or restored at a later date, and any human or other vertebrate faunal or botanical fossil remains or impressions found in Tanganyika;
- **Monument**: (i) any building, fortification, internment, midden, dam or structure erected, built, or formed by human agency in Tanganyika before the year 1863; (ii) any rock painting or any immovable object painted, sculptured, carved, incised, or modified by human agency in Tanganyika before the year 1863; and (iii) any earthwork, trench, edit, well, cave, tunnel, or other modification of the soil or rock, dug, excavated, or otherwise engineered by human agency before the year 1863; and
- **Protected object**: an ethnographic object or any wooden door or door frame carved in

- Tanganyika in any African oriental style, before the year 1940, and includes any object declared to be a protected object.

The Act and its subsequent amendments and implementing rules and regulations establishes the Antiquities Division within the Ministry of Natural Resources and Tourism as the cultural heritage regulator within Tanzania. The Act empowers the Director of the Antiquities Division (the Director) to declare any place or structure of historical interest as a monument and acquire monuments and relics in accordance with other applicable legislation such as the Land Acquisition Act. The Director is responsible for listing protected monuments, relics, and objects in the national Gazette.

The Act includes penalties for destroying or damaging protected monuments, relics, and objects listed in the national Gazette or any resource that could reasonably be assumed eligible for protection as a monument, relic, or protected object. The Act also requires any individual or organization that discovers a monument, relic, or protected object to report the discovery to an administrative officer, the Antiquities Division, and the Conservator or the Curator of the National Museum of Tanganyika.

The KSP Project will abide to the provision of this Act during Project execution, in line with the CHMP prepared for this Project.

3.4.2 GRAVES (REMOVAL) ACT, 1969

This Act provides procedures to follow in the removal of graves. Article 3 states that 'where any land on which a grave is situated is required for public purpose, the Minister shall take all such steps as may be requisite or convenient for the reinstatement or re-internment in a place approved by the Minister.

Section 9 provides that when the removal of a grave or dead body is undertaken, (1) the Minister may on behalf of the Government pay in respect thereof compensation as may be agreed upon and, (2) compensation shall be limited to the removal, transportation, re-instatement, and re-internment and any placatory or expiatory rites or other ceremonies accompanying such removal or re-internment.

Section (3) of this article allows for individuals to submit their interest by notification if they plan to undertake the removal of graves or dead bodies themselves. As it is to land acquisition, the removal of graves for public purpose is also conducted after due notification.

The proposed KSP Project has identified graves within the Project area which therefore require removal and relocation. KSP will adhere to all requirements of this Act, in line with the CHMP and Chance Find Procedure prepared for this Project.

3.4.3 FIRE AND RESCUE SERVICES ACT, 2007

The Act gives power for the establishment of a national fire brigade for the Mainland Tanzania known as the Fire and Rescue Force (FRF). Part Three of the Act involves administration and discipline matters. It further elaborates on the division of the force into different levels including City, Municipal, Regional, District and Airport levels. For this Project, the relevant administration is the Morogoro Regional Office Fire and Rescue Office for all matters related to fire hazard. Part four of the Act presents miscellaneous related to the fire and fire hazards.

Other related regulations include:

- Fire and Rescue Force (Safety Inspections and Certificates) Amendment Regulations, 2012; and
- Fire and Rescue Force (Safety Inspections and Certificate) Regulations, 2008.

The Project will adhere to the requirements of this Act, including installing appropriate fire detection and rescue equipment's, submitting Project layout to the fire department for inspection and firefighting training workers. The Project layout shows the locations of fuel storage areas, accommodation areas and offices where flammable materials would be stored. KSP will also prepare Emergency Response Plan for the Project.

3.5 LIST OF REQUIRED NATIONAL PERMITS

TABLE 3.1 summarizes potential E&S permits required for the Project. This permit list is based on current Project information and is not considered to be legally binding.

TABLE 3.1 KEY ENVIRONMENTAL AND SOCIAL PERMITS REQUIRED FOR THE PROJECT

S/N	Permit name	Legislation	Issuing Authority	Need / Rationale	Timeline	Responsibility	Expiry
	Environmental Impact Assessment Certificate	Environmental Management Act No. 20, 2004 Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018	NEMC	Agricultural projects of large scale (greater than 100 Ha) are categorized as Type A in the first Schedule of the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations, 2018. The Project may arise adverse E&S impacts and trigger the requirement for a full Environmental Impact Assessment.	The Project EIA report was approved and issued with EIA certificate on 16 February 2023. .	MPM/KSP	Effective during the whole lifecycle of this Project (99 years).
	Right of Occupancy	Tanzania Investment Act 1997 Urban Planning (Use Groups and Use Classes) Regulations, 2018	Tanzania Investment Centre (TIC)	MPM Project land is leased from TIC under special conditions stated in Chapter 5 of this Report. The land shall be maintained and the same shall be used for Farming only.	20 October 2021.	MPM/KSP	99 years from the first day of October 2021.
	Construction of Fuel Facility and Storage of Fuel	The Petroleum (Wholesale, Storage, Retail and Consumer Installation Operations) Rules, 2018	Energy and Water Utilities Regulatory Authority (EWURA)	Construction of fuel facility and storage of fuel.	Prior to construction of fuel facility	MPM/KSP	Issued by EWURA VIA sanction letter no.PCIOL-2023-007 dated 25.07.2023
	Water Use Permit	Water Resources Management Act (2009) 9Section 43,45)	Ministry of Water and Irrigation- Lake Tanganyika	The Project will abstract and use 1,468,800m3/day of water from river Mulgaras for irrigation uses	Granted on 16 February 2022.	MPM/KSP	Valid for 35 years as from 16 February 2022 to 15

S/N	Permit name	Legislation	Issuing Authority	Need / Rationale	Timeline	Responsibility	Expiry
			Basin Water Board	(sugarcane cultivation for about 30,000 Ha). The water use permit conditions include review of the permit after every seven (7) years in case of water scarcity in the source. The Project will abstract and utilize 11,232m3/day of water from river Malagarasi for institutional uses in six villages.			February 2057.
	Groundwater Sink Permit	The Groundwater (Exploration and Drilling) Licensing Regulations, 2013 Water Resources Management Act, 2009	Ministry of Water and Irrigation- Lake Tanganyika Basin Water Board	Drilling of a Borehole for water abstraction for domestic usage for institutional purposes.	Prior to borehole drilling	MPM/KSP	N/A
	Work permits	Non-Citizen (employment regulation) regulations, 2016	Immigration Department; and Prime Minister's Office - Policy, Parliament, Coordination, Labour, Youth, Employment and Persons with Disability.	Applicable for all foreign workers employed by the Project.	Prior to construction and/or any engagement in the Project in all phases.	MPM/KSP HR Department	N/A

S/N	Permit name	Legislation	Issuing Authority	Need / Rationale	Timeline	Responsibility	Expiry
	Indigenous Tree felling permits	Tanzania Forest Act, 2002	Tanzania Forest Services (TFS)	The Project will undergo vegetation clearance for construction of access roads and layout of drip irrigation system and sugarcane nursery and commercial farm preparations. Therefore, felling of any indigenous tree in the Project area requires permits.	Prior to Construction, and as the Project progresses from one farm to another farm in the three phases of the project.	MPM/KSP and EPC Contractor.	N/A
	Grave removal procedures	The Graves (Removal) Act No.9, 1969	Kasulu District Council and Kigoma Regional Commissioner office	The Project will involve relocation of graves in the Project farms.	Prior to construction phase and as the Project progress from phase 1 to phase 3.	MPM/KSP	N/A
	Permit to import and deal in industrial and consumer chemicals	The Industries and Consumer Chemicals (Management and Control) Regulations, 2015	Chief Government Chemist under the GCLA (Government Chemist Laboratory Authority)	The Project applying herbicides to control weeds, treat seeds prior to transplanting sugarcane plantations for pest and disease control. The Proponent and contractors are obliged to avoid importation and utilizing of banned chemicals containing PCBs and CFCs.	Prior to construction phase and/or during operational phase of the Project as it progresses from phase 1 to phase 3.	MPM/KSP	N/A
	Permit to extract materials from	Local Government Authority Act No. 7, 2014	Kasulu District council	The Project currently operates a murram soil burrow pit, and in the future	Prior to construction and or during	MPM/KSP	N/A

S/N	Permit name	Legislation	Issuing Authority	Need / Rationale	Timeline	Responsibility	Expiry
	burrow pits/quarries			may seek to operate aggregate quarry from Kichananga.	construction phase as the Project progresses from phase 1 to phase 3.		
	Contractors' Registration	Contractors Registration Act, 1997	Contractors' Registration Board	To ensure construction contracts are to be executed by registered companies and entitled class in respect to the Project size. If contractor is a foreign company, local content regulations will apply and the Engineering, Procurement and Construction Management (EPCM) contractor will need to form a Joint Venture with a local contractor company.	Confirm during tender process that contractors have appropriate registration.	MPM/KSP	N/A
	Certificate of Registration of Workplace	Occupational Health and Safety Act, 2003	OSHA	All activities undertaken by KSP and contractors should comply with the OHS Act.	Prior Construction phase, during construction phase and during operational Phase.	MPM/KSP and Contractor.	N/A
	Compliance License	Occupational Health and Safety (OHS) Act, 2003	OSHA	All activities undertaken by KSP and contractors should comply with the OHS Act.	Prior Construction phase, during construction phase and during	MPM/KSP and Contractor.	N/A

S/N	Permit name	Legislation	Issuing Authority	Need / Rationale	Timeline	Responsibility	Expiry
					operational Phase.		
	Permit to transport abnormal, awkward, and super dimension loads that unavoidably exceeds the legal dimensions but not axle load limits	The Road Act, 2007	TANROADS	The Project may involve the transportation of heavy loads such as fuel, cargo etc from Dar Es Salaam.	Prior to the construction phase, during construction phase and during operational Phase.	MPM/KSP and Contractor.	N/A
	Building permit	Local Government (Urban Authorities) (Development Control) Regulations, 2008 Urban Planning (Building) Regulations, 2018	Kasulu District Council and Kigoma Regional Commissioner office	All construction activities at the KSP require building permits.	Prior to the construction phase as the Project progresses from phase 1 to phase 3.	MPM/KSP and Contractor.	N/A
	License to collect, store and transport, treatment, recycling, reuse, recovery, and disposal of hazardous Waste	Environmental Management (Hazardous Waste Control and Management) Regulations, 2021	Vice Presidents Office – Division of Environment, Director NEMC	The Project will involve storage, transportation, and usage of hazardous chemicals. The removal of hazardous waste from construction site will require permit.	During construction phase as the Project progresses from phase 1 to phase 3.	MPM/KSP and Contractor.	N/A
	Permit to dispose solid waste	Environmental (Solid Waste	Kasulu District Council	The Project will comply with the precautionary principle,	During	MPM/KSP and Contractor.	N/A

S/N	Permit name	Legislation	Issuing Authority	Need / Rationale	Timeline	Responsibility	Expiry
		Management) Regulations, 2009 (enforced by local governments)		the polluter pays principle and the producer extended responsibility principle in managing all solid waste during construction phase and operational phase. The contractor may use services from a licenced vendor.	Construction and operational phase as the Project progress from phase 1 to phase 3.		
	License for in-country management of e-waste (Collection, transportation, storage, recycling or refurbishing or dismantling)	Environmental Management (Control and Management of Electrical and Electronic Equipment Waste) Regulations, 2021 (enforced by local government authority)	Vice Presidents Office – Division of Environment	The Project may involve production of e-waste from construction activities. The Project shall ensure that electrical and electronic equipment does not contain lead, mercury, cadmium hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers.	During Construction and operational phase as the Project progress from phase 1 to phase 3.	MPM/KSP and Contractor.	N/A
	Fire Safety	Fire and Rescue Act, 2007 (Act No. 14 of 2007); Fire and rescue force, (safety inspection and certificates) Amendments Regulations, 2012	Commissioner General for the Fire and Rescue Force	All activities on site.	Prior to the construction phase, as well as during the construction and operational phase	MPM/KSP and Contractor.	N/A
	Annual Environmental Audits	Environmental Management Act Cap191 (2004), Section 101	NEMC	Project implementation of the ESMMP. KSP to submit the ESMMP to NEMC zonal offices in Kigoma.	Prior to construction activities.	MPM/KSP	N/A

S/N	Permit name	Legislation	Issuing Authority	Need / Rationale	Timeline	Responsibility	Expiry
		Environmental Impact Assessment and Audit Regulations, 2005 Regulation Section 44-56					

3.6 INTERNATIONAL STANDARDS, GUIDELINES AND TREATIES / CONVENTIONS

3.6.1 INTERNATIONAL LENDER STANDARDS

3.6.1.1 INTERNATIONAL FINANCE CORPORATION PERFORMANCE STANDARDS ON E&S SUSTAINABILITY

The IFC, a division of the World Bank Group that lends to private investors, released a Sustainability Policy, and set of Performance Standards (PSs) on E&S Sustainability (January 2012).

The PSs are directed towards providing guidance on how to identify E&S risks and impacts, and are designed to help avoid, mitigate and, manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the client in relation to Project-level activities.

The key requirements of each of the eight IFC PSs are presented in TABLE 3.2.

TABLE 3.2 INTERNATIONAL FINANCE CORPORATION (IFC) PERFORMANCE STANDARDS

Performance Standards	Key Requirement
IFC PS1: Assessment and Management of Environmental and Social Risks and Impacts	This PS relates to integrating and managing environmental and social performance throughout the life of a Project in line with national regulations and international standards. The standard requires the development of an Environmental and Social Management System (ESMS) that entails a structured approach to managing environmental and social risks and impacts. Moreover, the PS describes how environmental and social issues are to be handled in Project development and serves as the core around which the other standards are framed. This standard requires that nearby communities be appropriately engaged on issues that could potentially affect them. Key requirements to this end include: Conducting an informed consultation and participation process with affected communities Working in an inclusive and culturally appropriate manner Addressing the needs of disadvantaged or vulnerable groups Making available an effective grievance management system *The Project poses several E&S risks and impacts, which will need to be appropriately managed. Appropriate management measures have been included in the ESMMP. Moreover, as part of the ESIA process stakeholder consultation will be continuous both during the ESIA process and post-ESIA. At this stage, MPM will develop several environmental, social, occupational health and safety and human resource plans, policies and procedures that relate to all its operations in Kasulu. Over the life of the Project, the vehicle by which the commitments set out in the ESMMP related to this ESIA study and other plans, policies and procedures should be developed into specific actions which can be*

Performance Standards	Key Requirement
	implemented through an overarching Environmental and Social Management System (ESMS).
IFC PS2: Labour and Working Conditions	This standard aims to ensure that the client establishes, maintains, and improves a worker-management relationship that promotes the fair treatment, non-discrimination and equal opportunity of workers, and compliance with national labour and employment laws and international standards (as defined by the International Labour Organization (ILO). In particular, PS2 addresses child labour and forced labour, and promotes safe and healthy working conditions, and protecting and promoting the health of workers by recognizing the role of employees. *Project workers (for all Project phases) will need to be provided with fair labour and working conditions. This will apply to all categories of workers irrespective of whether directly engaged by MPM or the Contractor (direct workers), engaged through third parties (contracted workers), and workers engaged by the client's primary suppliers (supply chain). The Project will need to develop a worker grievance mechanism.*
IFC PS 3: Resource Efficiency and Pollution Preventions	This PS aims to abate pollution of air, water, and land that may threaten people and the environment at the local, regional, and global levels. This PS promotes the ability of private sector companies to adopt such technologies and practices where feasible. *Development of the Project will require several resources, which have the potential to cause some negative E&S impacts. All required resources will need to be used efficiently and all wastes managed in accordance with the waste management hierarchy, where avoidance of waste generation is the priority.*
IFC PS 4: Community, Health, Safety and Security	The role of this PS is to anticipate and avoid adverse impacts on the health and safety of the affected communities throughout the life of the Project as a result of routine and non-routine events. The PS also requires an assessment of how the use of security by the Project to safeguard personnel and property could impact on community security taking into account considerations of human rights. *Implementation of the Project will need to ensure that the health, safety, and security of all Project affected communities are not compromised.*
IFC PS5: Land Acquisition and Involuntary Resettlement	PS5 refers to the management of physical and economic displacement resulting from Project-related land acquisition through resettlement and livelihood restoration processes. Objectives are to: To avoid, and when avoidance is not possible, minimize displacement by exploring alternative Project designs. To anticipate and avoid, or where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use by:

Performance Standards	Key Requirement
	Providing compensation for loss of assets at replacement cost Ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected. To improve, or restore, the livelihoods and standards of living of displaced persons. To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites Also, the PS aims to provide guidelines to private sector's responsibility under Government managed resettlements by bridging gaps associated with Government managed resettlement. *. The securing of land and access restrictions to surrounding communities will need be in line with the requirements of PS5. To ensure alignment, ERM will include aspects of historical resettlement as part of social baseline in chapter 4, Section 5.5.2 of this report.*
IFC PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	This PS aims to protect and conserve biodiversity based on the Convention on Biological Diversity. It divides habitat into three categories, modified, natural, and critical. For Projects in natural habitat, mitigation measures should be designed to achieve no net loss of biodiversity where feasible. For Projects in critical habitats, the Project's mitigation strategy should be described in a Biodiversity Action Plan and be designed to achieve net gains of those biodiversity values for which the critical habitat was designated. *Assessment of the proposed Project's impacts on biodiversity has been carried out in line with the requirements of this PS.*
IFC PS7: Indigenous Peoples	This PS deals with safeguarding Indigenous Peoples. The aim of this PS is to protect the interests of Indigenous Peoples during Project implementation. On a broader scale, it requires Project implementation to avoid adverse impacts on Indigenous Peoples as well as ensuring their participation and consent. Based on ERM findings this PS is not triggered due to lack of internationally recognized indigenous groups in the Project area and area of influence (AoI). *No recognized IPs will be impacted by this Project, hence PS7 has not been triggered.*
IFC PS8: Cultural Heritage	Cultural heritage, according to this PS, refers to tangible forms of cultural heritage, such as tangible movable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values; unique natural features or tangible objects that embody cultural values, such as sacred graves, rocks, lakes, and waterfalls; and certain instances of intangible forms of culture that are proposed to be used for commercial purposes, such as cultural knowledge, innovations, and

Performance Standards	Key Requirement
	practices of communities embodying traditional lifestyles. The KSP Project will involve relocation identified graves in the Project farms. *As part of this ESIA update process, a cultural heritage impact assessment (considering both tangible and intangible forms of cultural heritage) has been developed*.

This SLIP is prepared to be consistent with the expectations of the Performance Standards and the applicable World Bank Group (WBG) Environmental Health and Safety (EHS) Guidelines. World Bank Group Environmental Health and Safety Guidelines

The WBG EHS Guidelines apply their own set of standards for specific effluents, emissions, and discharges.

The EHS Guidelines contain performance levels and guidance measures that are generally considered to be achievable by new facilities using existing technology at a reasonable cost. The following WBG EHS Guidelines are applicable to the Project:

- General EHS Guidelines, 2007 (IFC, 2007a); and
- General EHS Guidelines: Construction and Decommissioning, 2007 (IFC, 2007b).

These Guidelines contain standards relating to:

- Environment: air, energy and water conservation, solid waste management and wastewater discharges, hazardous materials management, noise and vibration, and contaminated land;
- Ambient Air Quality;
- Occupational Health & Safety; and
- Community Health & Safety.

World Bank Group Environmental Health and Safety (WBG EHS) guidelines

The WBG EHS guidelines (1991 and updated in 2007) are a set of technical reference materials that provide pollution related limits and standards that are acceptable to the WBG. In general, the guidelines seek to avoid, minimize and control EHS impacts during the construction, operation and decommissioning phase of a project or facility and are applicable to this Project. The WBG EHS Guidelines serve as a technical reference source to support the implementation of the IFC PSs.

General EHS Guidelines exist which contain information on cross-cutting EHS issues potentially applicable to all industry sectors; these are listed in Box 3.1 below:

BOX 3.1 WBG GENERAL EHS GUIDELINES

General EHS Guidelines
1. Environmental

1.1 Air Emissions and Ambient Air Quality

1.2 Energy Conservation

1.3 Wastewater and Ambient Water Quality

1.4 Water Conservation

1.5 Hazardous Materials Management

1.6 Waste Management

1.7 Noise

1.8 Contaminated Land

2. Occupational Health and Safety

2.1 General Facility Design and Operation

2.2 Communication and Training

2.3 Physical Hazards

2.4 Chemical Hazards

2.5 Biological Hazards

2.6 Radiological Hazards

2.7 Personal Protective Equipment (PPE)

2.8 Special Hazard Environments

2.9 Monitoring

3. Community Health and Safety

3.1 Water Quality and Availability

3.2 Structural Safety of Project Infrastructure

3.3 Life and Fire Safety (L&FS)

3.4 Traffic Safety

3.5 Transport of Hazardous Materials

3.6 Disease Prevention

3.7 Emergency Preparedness and Response

4. Construction and Decommissioning

4.1 Environment

4.2 Occupational Health and Safety

4.3 Community Health and Safety

Where applicable, the abovementioned EHS Guidelines were considered in this ESIA process; however, the WBG EHS guidelines for Perennial crop production, 2016 are of particular importance to the proposed ESIA process. These are discussed in more detail in the Sections below.

Environmental, Health, and Safety Guidelines for Perennial Crop Production, 2016

The guidelines are applicable to large-scale plantation crops and outgrower systems and focuses on the primary production and harvesting through farming and plantation forestry of major multi-year food, fiber, energy, ornamental, and pharmaceutical crops, located in both temperate and tropical regions. It includes tree crops (such as olives, citrus, coffee, rubber, eucalypts, and cacao) as well as banana, sugarcane, and palm oil. The guidelines will be used for the following:

- Soil Conservation and Management
- Nutrient Management
- Crop Residue and Solid Waste Management
- Water Management
- Pest Management
- Use and Management of Pesticides
- Fertilizers
- Biodiversity and Ecosystems
- Energy Use
- Air Quality
- Greenhouse Gas (GHG) Emissions

Environmental, Health, and Safety Guidelines for Sugar Manufacturing, 2007

The EHS Guidelines for Sugar Manufacturing include information relevant to sugar manufacturing facilities. It provides a full description of industry activities for this sector. The guidelines document does not include agriculture and field activities, which are included in the EHS Guidelines for Plantation Crop Production. The guidelines will be used for management of:

- **Solid Waste and By-Products:** Sugar industry activities generate large quantities of organic solid waste and by-products (e.g. leaves from cane or beet, molasses from the final crystallization, press mud or cachaza, bagasse fiber from the cane, mud and soil arriving at the plant with the raw material, and lime solids from the juice clarification).
- **Wastewater - Industrial process Wastewater**: Sugar processing wastewater has a high content of organic material and subsequently a high biochemical oxygen demand (BOD), particularly because of the presence of sugars and organic material arriving with the beet or cane. Wastewater resulting from the washing of incoming raw materials may also contain crop pests, pesticide residues, and pathogens.
- **Emissions to Air:** Air emissions in sugar manufacturing are primarily related to particulate matter generated from bagasse-fired steam boilers, dust from unpaved access roads and areas, and sugar drying or packing activities. In addition, odour emissions are generated from beet processing activities and storage facilities. Beet factory juice clarification

produces a sweet odour, which can be irritating. Inadequate cleaning of the raw material may result in fermented juice, which will also create a foul smell.

3.6.1.2 EQUATOR PRINCIPLES (EP) IV (2020)

The Equator Principles (EPs) are a voluntary risk management framework, currently adopted by 96 financial institutions in 37 countries for determining, assessing, and managing environmental and social risk in projects; primarily to provide a minimum standard for due diligence to support responsible risk decision-making. These financial institutions are collectively referred to as Equator. Principles Financing Institutions (EPFIs).

The EPs were developed by private-sector banks and launched in June 2003. They were first revised in July 2006 and new revisions, known as EP4, took effect on 1 October 2020. The EPs establish principles for addressing environmental and social risks and issues in global Project finance transactions, including adherence to International Finance Corporation (IFC) Performance Standards (PS). They are designed to serve as a benchmark for the financial industry to manage social and environmental risks in Project financing. They apply to all new Project financings with total Project capital costs of USD $10 million or more, and across all industry sectors and geographies.

The Principles (EPs 1 to 10) comprise:

- Principle 1: Review and Categorisation with A being resulting in potentially significant impacts, B limited impacts that can be mitigated and C minimal / no impacts;
- Principle 2: Environmental and Social Assessment i.e., an ESIA is required for all Category A and B projects, and include assessment of potential adverse Human Rights impacts and climate change risks as part of the ESIA;
- Principle 3: Applicable Environmental and Social Standards, for example in this case, the IFC performance standards and the Environment, Health, Safety (EHS) guidelines etc.;
- Principle 4: Environmental and Social Management System and Equator Principles Action Plan, which will be set out in the ESIA Report with associated management plans must be developed by Project and its EPCM contractors to manage all identified impacts;
- Principle 5: Stakeholder Engagement, in order to conduct effective and meaningful consultation the Stakeholder Engagement Plan (SEP) outlines consultation to be undertaken during the ESIA process and beyond;
- Principle 6: Grievance Mechanism, this mechanism is to be developed and implemented by the Project and its EPCM contractors to manage stakeholder complaints appropriately;
- Principle 7: Independent Review is typically undertaken by a consultant acting on behalf of the lenders to assess compliance;
- Principle 8: Covenants and provisions are included in the loan documentation related to
- environmental and social compliance;
- Principle 9: Independent Monitoring and Reporting will be undertaken by an independent party; and
- Principle 10: Reporting and Transparency is required to ensure all relevant reports are publicly available. Under Principle 1, the Project is categorised to ensure that the required

level of environmental and social due diligence is commensurate with the nature, scale, and stage of the Project, and with the level of environmental and social risks and impacts.

The categories are:

- Category A: Projects with potential significant adverse environmental and social risks and/or impacts that are diverse, irreversible, or unprecedented;
- Category B: Projects with potential limited adverse environmental and social risks and/or impacts that are few in number, generally site-specific, largely reversible, and readily addressed through mitigation measures; and
- Category C: Projects with minimal or no adverse environmental and social risks and/or impacts.

Under Principle 2:

- All Category A and Category B Projects are required to conduct relevant environmental and social risks and scale of impacts of the proposed Project need to be assessed.

- A Climate Change Risk Assessment is required for all Category A and, as appropriate, Category B Projects, and will include consideration of relevant physical risks as defined by the Task Force on Climate-related Financial Disclosures (TCFD).

Principle 3 and 4:

- Requires full adherence to local legal requirements and standards.

- For all Category A and Category B Projects the client will be required to develop and/or maintain an Environmental and Social Management System (ESMS) and develop a suitable Environmental and Social Management Plan (ESMP) for any impacts identified as part of Principle 2.

Principles 5 and 6:

- For all Category A and Category B Projects the client needs to demonstrate effective Stakeholder Engagement, as an ongoing process in a structured and culturally appropriate manner.

- For all Category A and, as appropriate, Category B Projects, the client, as part of the ESMS, needs to establish effective grievance mechanisms.

Principle 9:

- For all Category A and, as appropriate, Category B Projects, monitoring and reporting should be provided by an Independent Environmental and Social Consultant.

3.6.1.3 UN GUIDING PRINCIPLES

The UNGPs are a set of guidelines for States and companies to prevent, address and remedy human rights abuses committed in business operations. They were endorsed by the UN Human Rights Council in June 2011. The Guiding Principles are grounded in recognition of:

- States' existing obligations to respect, protect and fulfil human rights and fundamental freedoms;
- The role of business enterprises as specialized organs of society performing specialized
- functions, required to comply with all applicable laws and to respect human rights; and

- The need for rights and obligations to be matched to appropriate and effective remedies when breached.

The 13 Principles which elaborate the corporate responsibility to respect human rights draw on increased recognition that the business community needs to respond better to the challenges presented by human rights. Fundamentally, companies should ensure human rights are integrated into their management systems so that compliance with human rights standards can be continually assessed.

3.6.1.4 SALIENT HUMAN RIGHTS ISSUES

The UNGP's Reporting Framework asks companies to focus their human rights reporting on their 'salient human rights issues'. A company's salient human rights issues are those human rights that stand out because they are at risk of the most severe negative impact through the company's activities or business relationships.

In this way, the focus is on risk to people, not to business, as the starting point, while recognizing that where risks to people's human rights are greatest, there is strong convergence with risk to the business.

3.6.1.5 HUMAN RIGHTS

The rights of employees and affected parties which may be relevant for the Project to consider include, per Articles 6 to 15 of the International Covenant on Economic, Social and Cultural Rights:

- Right to work, including enjoyment of just and favourable conditions of work, and the right to form and join trade unions (art. 6, 7 and 8): Individuals are entitled to the opportunity to make a living by work which they freely choose or accept. The work must be 'decent work', meaning that it respects their human rights. The right includes the prohibition of arbitrary dismissal and the rights to just and favourable conditions of work and to form and join trade unions, discussed below;
- Right to social security, including social insurance (art. 9): This right obliges the State to create and maintain a system of social security that provides adequate benefits for a range of issues (such as injury or unemployment);
- Right to a family life (art. 10): Protection should be given to families during their establishment, and while they are responsible for the care and education of dependent children. This is particularly relevant for mothers, children, and young persons;
- Right to an adequate standard of living (art. 11): This right includes access to adequate housing, food, clothing, and water and sanitation. Individuals have a right to live somewhere in security, dignity, and peace and that fulfils certain criteria (such as availability of utilities and accessibility). Food should be available and accessible to individuals, in sufficient quality and quantity, to meet their nutritional needs, free from harmful substances and acceptable to their culture. The right to water and sanitation was recognized as a distinct right in 2010. Individuals are entitled to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use and to sanitation services that fulfil certain criteria (such as being safe, physically accessible, and providing privacy and dignity);

- Right to the enjoyment of the highest attainable standard of physical and mental health (art. 12); Right to education (art. 13, 14): All children have the right to free and compulsory primary education. The right also includes equal access to education and equal enjoyment of educational facilities, among other aspects; and
- Rights to take part in cultural life, to benefit from scientific progress, and to benefit from the protection of the material and moral rights of authors and inventors (art. 15): Individuals have a right to take part in the cultural life of society and enjoy the benefits of scientific progress, especially disadvantaged groups. This includes protection of an individual author's moral and material interests resulting from any scientific, literary, or artistic production.

The following rights are also included in the Universal Declaration of Human Rights (UDHR):

- Article 3: The right to life, liberty, and security of person;
- Article 4: No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms;
- Article 22: The right to social security;
- Article 23: The right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment without any discrimination, the right to equal pay for equal work. Everyone who works has the right to just and favourable remuneration ensuring for themself and their family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection;
- Article 25: Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age, or other lack of livelihood in circumstances beyond his control. Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection; and
- Article 26. The right to education: Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all on the basis of merit. Education shall be directed to the full development of the human personality. Parents have a prior right to choose the kind of education that shall be given to their children.

3.6.1.6 BONSUCRO PRODUCTION STANDARDS

Bonsucro, a member of the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance, is a world-wide agency promoting the sustainable production of sugar cane around the world. Whereas Mufindi Paper Mills Limited under Kasulu Sugar Plantation Project is not a member of the Bonsucro, the production standard V5 (July 2023) advocates for sustainable cane production providing a comprehensive metric tool for sustainable farming and milling; principles and criteria for achieving sustainable production of sugarcane and all sugarcane-derived products; criteria and indicators, for the assessment of the performance of operators against the three economic, social, and environmental pillars of sustainability; and Bonsucro members who wish to achieve third party certification of meeting the standard's

robust requirements as it would ensure that this scheme is aligned to international lender standards.

Broadly, the Bonsucro Production Standard adhering to 5 Principles:

Principle 1: – Assess and Manage Environmental, Social & Human Rights Risks.

Principle 2: – Respect Labour Rights & Occupational Safety and Health Standards.

Principle 3: – Manage input, Production, and Processing Efficiencies to enhance Sustainability.

Principle 4: – Actively Manage Biodiversity and Ecosystem Services.

Principle 5: – Continuously improve other key areas of the business.

3.6.1.7 APPLICABLE INTERNATIONAL TREATIES AND AGREEMENTS

Tanzania is a signatory to a variety of environmental treaties and agreements, which contain commitments to safeguard the environment. Importantly, Tanzania has ratified or signed a number of important United Nations (UN) treaties as follows:

TABLE 3.3 INTERNATIONAL TREATIES AND AGREEMENTS OF REFERENCE

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
Biodiversity and Environment				
Convention on Wetlands of International Importance (Ramsar Convention, 1971)	1971	Ramsar Convention Bureau	• Intergovernmental treaty that provides the framework for international cooperation for the conservation of wetland habitats; • Under this Convention, each Contracting Party commit to work towards the wise use of all their wetlands, designate suitable wetlands and ensure their effective management, and also cooperate internationally on transboundary wetlands, shared wetland systems and shared species; • On 13 August 2000, The Convention entered into force in Tanzania. The country currently has four (4) sites designated as Wetlands of International Importance; and • They are Kilombero Valley Floodplain, Lake Natron Basin, Malagarasi-Muyovozi Wetlands and Rufiji-Mafia-Kilwa Marine Ramsar Site.	• The Project will abstract and utilize water from river Malagarasi; • Avoid progressive intrusion and loss of wetlands, recognizing their essential ecological functions and their scientific, cultural, economic, and recreational value.
United Nations Framework Convention on Climate Change (UNFCCC) and the Paris climate accord within the UNFCCC	1992 2016	United Nations Conference on Environment and Development (UNCED) and UNFCCC	• UNFCCC objective is to "stabilise greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"; • The framework sets no binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms; • Instead, the framework outlines how specific international treaties (called "protocols" or "Agreements") may be negotiated to set binding limits on greenhouse gases; and • The Paris Agreement aims long-term goal of keeping the increase in global average	• Negotiated at the UNCED, or Earth Summit in an endeavour to find solutions to the complex problems of securing sustainable development across a wide spectrum of environmental issues. Legally non-binding as no set limits to greenhouses gases; • Tanzania developed its Nationally Determined Contribution (NDT) and committed to reduce greenhouse gas (GHG) emissions economy-wide

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
			temperature to well below two (2) °C above pre-industrial levels; and to aim to limit the increase to 1.5°C, as this would significantly reduce risks and the impacts of climate change.	between 30-35% relative to the Business-As-Usual (BAU) scenario[3]; and • Priority mitigation sectors are energy, transport, forestry, and waste management; and • Tanzania is obliged to include activities emitting GHG in its published national GHG statistics. Since Tanzania is a Party to the Convention, the country will have to account for all sources of GHG in her future National Communications
Kyoto Protocol	1997		• The Kyoto Protocol is an international agreement linked to the UNFCCC. The Kyoto Protocol binds 37 industrialized countries and the European Community to reduce their GHG emission by 5% from 1990 levels in the commitment period 2008-2012. The Protocol differs from the Convention in that, while the Convention encourages industrialized countries to stabilize GHG emissions, the Protocol commits them to do so. It recognizes that developed countries are principally responsible for the current high levels of GHG emissions in the atmosphere as a result of more than 150 years of industrial activity. As a result, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."	• It provides mechanisms to achieve this objective, including carbon trading, joint implementation, and the clean development mechanism (CDM). Although Tanzania is not among the 37 industrialized

[3] Vice President's Office (2021). Nationally Determined Contributions. Retrieved from: NATIONALLY DETERMINED CONTRIBUTIONS (NDCs) (unfccc.int).

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
Convention on Biological Diversity	1992	United Nations Environment Programme (UNEP) Ad Hoc Working Group of Experts on Biological Diversity	• Its objective is to develop strategies for the conservation and sustainable use of biological diversity and equitable benefit sharing of genetic resources utilisation; • It is often seen as the key document regarding sustainable development since it provides a global legal framework for action on biodiversity; • The Convention reminds decision-makers that natural resources are not infinite and sets out a philosophy of sustainable use; and • While past conservation efforts were aimed at protecting particular species and habitats, the Convention recognises that ecosystems, species, and genes must be used for the benefit of humans.	• Promotes the conservation of biological diversity; the sustainable use of the components of biological diversity; and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources; • This convention constitutes the very first international agreement that considers biological diversity as a resource; and • No specific commitments applicable to the Project other than general provisions to conserve biodiversity.
Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES)	1973	International Union for Conservation of Nature and Natural Resources (IUCN)	• It regulates the international trade in animals and plants that may be threatened by trade. CITES entered into force in 1975 and currently regulates the trade of approximately 30,000 species of plants and 5,600 species of animals; and • The Convention obligates each Party to designate Management Authorities in charge of administering licensing system and one or more Scientific Authorities to advise them on the effects of trade on the status of the species.	• Establishes conditions for the importation, export, re-export and in general terms, the movement of wild fauna and flora endangered species. • No specific commitments applicable to the Project.
Lusaka Agreement	1994	-	• The Lusaka agreement details co-operative enforcement operations directed at illegal trade in wild fauna and flora. The objective of this Agreement is to reduce and ultimately eliminate illegal trade in wild fauna and flora	• Tanzania has entered into this agreement, and therefore, Kasulu Sugar Plantation Project will have to cooperate with the local community to prevent

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
			and to establish a permanent Task Force for this purpose.	illegal trade and protection of wild fauna and flora.
Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa	1994	United Nations Convention to Combat Desertification (UNCCD)	• The Convention seeks to combat desertification; Mitigate the effects of drought in countries severely affected by these phenomena, particularly in Africa; • Use an integrated approach compatible with the Agenda 21 program, with a view to contributing to the establishment of sustainable development in the affected areas.	• Ratified by Tanzania on 19 June 1997; and • A legally binding framework set up to address desertification and the effects of drought; and • Commits parties to mitigate the impact of land degradation and protect land.
Cultural Heritage				
Convention on the Protection of the World Cultural and Natural Heritage	1972	United Nations Educational, Scientific and Cultural Organization (UNESCO)	• Framework to identify, protect, conserve all natural and cultural heritage to future generation, including prepare appropriate effective and efficient measures to mitigate and prevent further damage to natural and cultural heritages belong to all States signed this convention; • The Convention encourages States Parties to integrate the protection of natural and cultural heritage into their regional planning programmes. It also explains how the World Heritage Fund is to be managed and stipulates the obligation of States Parties to report regularly of conservation of their natural and cultural heritage; and • There are seven (7) properties inscribed on the World Heritage List, namely Kondoa Rock-Art Sites, Ruins of Kilwa Kisiwani and Ruins of Songo Mnara, Stone Town of Zanzibar, Kilimanjaro National Park, Selous Game	• The Convention aims to establish an international framework for the identification, protection, conservation, presentation, and transmission to future generations of the international cultural and natural heritage; and • There are no World Heritage Sites near the proposed Project.

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
			Reserve, Serengeti National Park, and Ngorongoro Conservation Area.	
Cotonou Agreement	2000		• A treaty between the European Union and the African, Caribbean and Pacific Group of States ("ACP countries"), including Tanzania; and • Declaration of the ACP States on the Return or Restitution of Cultural Property (Extract from the Declaration under the Partnership Agreement between the ACP States and the European Communities).	• Defines the applicable rules for the protection of cultural heritage in the Project area.
• **Chemicals and Waste**				
Stockholm Convention on Persistent Organic Pollutants	2004	Governing Council of the UNEP	• A global treaty to protect human health and the environment from chemicals that remain intact in the environment for long periods, will become widely distributed geographically, accumulate in the fatty tissue of humans and wildlife, and have harmful impacts on human health or on the environment. The objective is to protect human health and the environment from persistent organic pollutants.	• Aims to protect human health and the environment against effects of chemical products of long life (remaining in the environment for long periods); and • The Convention allows the prohibition of the commercialisation and utilisation of the most harmful Persistent Organic Pollutants (POPs).
Vienna Convention on the Protection of the Ozone Layer and related Montreal Protocol on Substances that Deplete the Ozone Layer	1985 1995	UNEP	• Acts as a framework for the international efforts to protect the ozone layer. However, it does not include legally binding reduction goals for the use of chlorofluorocarbons (CFCs), the main chemical agents causing ozone depletion. These are laid out in the accompanying Montreal Protocol. The Convention entered into force in 1988 and	• Aims at structuring at the international scale, a legal, scientific, and technical framework to ensure the protection of the environment against activities that modify the Ozone layer; and • Associated to this Convention, the Protocol of Montreal ensures

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
			having been ratified by 197 states as well as the European Union.	the control of the production and utilisation of substances commercialised implying a major risk of modifying the Ozone layer.
• **Labour and Human Rights**				
African Charter on Human and Peoples' Rights	1986	-	• Ensures the right of all peoples to economic, social, and cultural development, with full respect for their freedom and identity, and to the full and equal enjoyment of the common heritage of man (Article 22).	• Defines the applicable rules for the protection of human rights of the communities affected by the Project.
Minimum Age Convention	1973	International Labour Organization (ILO)	• Sets 15 years as the age below which children should not work (or 14 years if the economic situation of a country justifies it in the short term). • Two years before reaching this legal minimum age, children can perform "light work", not dangerous, for a maximum of fourteen hours per week, provided that it does not prejudice their schooling. • Children under the minimum working age who perform non-light work are working children. • In addition, United Nations International Children's Emergency Fund (UNICEF) considers a child to be working if they do 28 hours or more of housework per week. The minimum age specified in Tanzania's ratification is 14 years.	• Projects that are likely to generate job opportunities are subject to the rules of this convention.
Freedom of Association and Protection of the Right to Organize Convention	1948	ILO	• Establishes the right of all workers and employers to form and join organizations of their own choosing without prior authorization; and	MPM and its workers, shall have the right to establish and, subject only to the rules of the organisation

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
			• Sets out a series of guarantees for the free functioning of organizations without interference from the public authorities.	concerned, join organisation of their choice.
Right to Organize and Collective Bargaining Convention	1949	ILO	• Calls for protection against discrimination affecting freedom of association. Provides for measures to promote and encourage collective bargaining.	MPM workers shall enjoy adequate protection against acts of anti-union discrimination in respect of their employment
Discrimination (Employment and Occupation) Convention	1958	ILO	• Provides that the Member States undertake to formulate and apply a national policy aimed at promoting, by methods adapted to national circumstances and customs, equality of opportunity and treatment in matters of employment and occupation, in order to ''eliminate all discrimination in this matter.”	MPM will ensure its employment process has no preference made based on race, colour, sex, religion, political opinion, national extraction or social origin
Worst Forms of Child Labour Convention	1999	ILO	• Provides that each member that ratifies this Convention must take immediate and effective action to ensure the prohibition and elimination of the worst forms of child labour as a matter of urgency. This includes slavery, trafficking, prostitution, and pornography, forced labour, and forced recruitment in armed conflict as well as work that harms the health, safety, or morals of the child.	MPM shall not employ persons under the age of 18 in any form of slavery, trafficking, prostitution, and pornography, forced labour, and forced recruitment in armed conflict
Equal Remuneration Convention	1951	ILO	• The Convention focuses on gender discrimination in employment and outlines principles for the equal remuneration for work of equal value independent of whether it is performed by men or women; and • It requires parties to the Convention to implement domestic laws, regulations on wage determination and/or to support collective agreements between workers’ and	MPM will ensure minimum wages paid are aligned to national legislation Further, the Project will ensure equal remuneration for men and women workers for work of equal value.

Name	Year	Author	Description	Applicable Commitments / Relevance to Project
			employers' organisations in order to achieve these objectives.	
Abolition of Forced Labour Convention	1957	ILO	• This Convention primarily addresses forced labour imposed by state authorities. It prohibits specifically the use of forced labour as punishment for the expression of political views, for the purposes of economic development, as a means of labour discipline, as a punishment for participation in strikes, and as a means of racial, religious, or other discrimination.	MPM will not make use of any form of forced or compulsory labour in its construction and operational phase of KSP.

3.7 ORGANISATIONAL/PROJECT STANDARDS

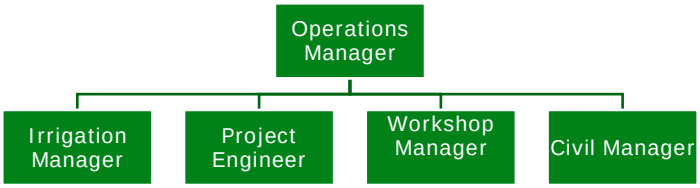
KSP organisational policies and procedures applies to all Project phases and have been aligned with both national and international standards to guide day to day activities of the Project. This section highlights some of the key policies and standards for KSP.

3.7.1 KASULU SUGAR PLANTATION OPERATIONAL ORGANIZATIONAL STRUCTURE

KSP delegates authority for Health, Safety, Social, Security and Environmental (HSSE) Management down through line management in accordance with the current organizational structure. Overall responsibility for HSSE rests with the KSP Management, Supervisors are directly accountable for the Health, Social, Security and Safety of those persons under their control.

All employees have a responsibility to work in a healthy, socially, secure and environmentally safe and responsible manner and to encourage others to act similarly. KSP will ensure that human and physical resources are available to manage, perform and verify work practices in accordance with established procedures. All audit/inspection personnel shall be suitably trained and experienced, and where practicable, shall be independent of the activity being audited. The top management structure is presented below:

FIGURE 3.1 ORGANISATION STRUCTURE



3.7.2 KASULU SUGAR PLANTATION HSSE PLAN AND POLICY

KSP HSSE Policy is based on the fundamental principle that people should be able to work to their maximum potential without undue risk to Health, Safety, Social or Environmental impacts. In order to ensure prevention strategies are fully maintained, all levels of management are accountable for the HSSE performance of their area of responsibility. Sound HSSE practice is a condition of employment for management and employees alike with responsibilities shared at all levels.

The plan provides for management of waste, responsibilities of HSSE personnel, accident reporting and investigation, emergency response, performance monitoring, risk assessments and management.

3.7.3 KASULU SUGAR PLANTATION HUMAN RIGHTS POLICY

The Human Rights Policy applies to all KSP employees and employees of subsidiaries and joint ventures where KSP has a controlling interest. It also applies, as far as is reasonably achievable, to KSP upstream and downstream supply chain through partners, suppliers and third-party contractors. In joint ventures where KSP does not have overall control, the leaders and managers of those businesses are strongly encouraged to adopt the same or similar

standards. If any human rights issues arise in joint ventures, KSP will work actively with the business leaders to address them.

The policy highlights KSP's commitment to respect human rights and labour standards which is based on the International Bill of Human Rights, including the Universal Declaration of Human Rights and the International Labour Organization's (ILO) 1998 Declaration on Fundamental Rights and Principles at Work and The Constitution of the United Republic of Tanzania, 1977.

3.7.4 KASULU SUGAR PLANTATION STAKEHOLDER ENGAGEMENT PLAN (SEP)

A SEP has been developed as part of this SLIP. The SEP[4] has been updated for the Project for the purpose of outlining the approach to engaging with the Project's stakeholders during the ESIA process as well as during the construction, implementation, and decommissioning of Phase One of the Project. In addition to outlining the approach, this SEP is intended to ensure a consistent, representative, and culturally appropriate approach to engagement with interested and potentially affected stakeholders in the context of developing the KSP phases within the six farm areas that traverse a wide geographical region.

The SEP has a Grievance Redress Mechanism (GRM) outlining the procedures for grievance administration and the process of resolution.

3.7.5 KASULU SUGAR PLANTATION HUMAN RESOURCE MANUAL

This Manual will act as a reference document to all employees of the Company. It also forms the basis upon which the Company working culture and environment will be governed. It has been developed as a guide towards providing a uniform level of understanding in the interpretation and administration of human resource matters agreed personnel policies and procedures of the Company.

These conditions of Employment may be translated into languages other than English, in which case, the English version will prevail in the event of any dispute on interpretation. This manual has been developed with reference to and in consideration of the following:

- Statutory regulations and legislation
- Best practice trends in Tanzania
- Kasulu Sugar Project values

3.7.6 KASULU SUGAR PLANTATION CODE OF CONDUCT

This Code of Business Conduct and Ethics (the "**Code**") embodies the commitment of KSP to conduct its business in accordance with all applicable laws and regulations and the highest ethical standards. The Code is to be read together with KSP *Anti-Corruption Policy.*

The Code will be reviewed periodically by the Board of Directors and amended or employees and directors of KSP must read and fully comply with the provisions of the Code that are relevant to their job duties and are expected to take all reasonable steps to prevent contraventions of the Code, to identify and raise issues before they lead to problems, and to seek additional guidance when necessary.

[4] This document is an update of the initial SEP developed by PaulSam Engineering during the data collection phase.