ColdSolutions KENYA

Cold Solutions Kenya Limited (CSKL)

Proposed Temperature Controlled Storage Facility at Tatu City, Tatu Industrial Park (TIP), Kiambu County, Kenya

ESIA Project Report (Final Copy)

14 July 2020

Project No.: 0552902

The business of sustainability

ERM

Document title	Proposed Temperature Controlled Storage Facility at Tatu City, Tatu Industrial Park (TIP), Kiambu County, Kenya
Document subtitle	ESIA Project Report (Final Copy)
Project No.	0552902
Date	14 July 2020
Version	2.0
Author	Barnabas Busheshe and Gideon Owaga
Client Name	Cold Solutions Kenya Limited (CSKL)

Document history

				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
1.0	00	Barnabas Busheshe and Gideon Owaga	Mike Everett	Mike Everett	16.06.2020	Draft Report for Client Review and Comment
2.0	01	Barnabas Busheshe and Gideon Owaga	Mike Everett	Mike Everett	14.07.2020	Final Report Incorporating Client Comments

Signature Page

14 July 2020

Proposed Temperature Controlled Storage Facility at Tatu City, Tatu Industrial Park (TIP), Kiambu County, Kenya

ESIA Project Report (Final Copy)

Mike Everett
Partner

ERM East Africa (Pty) Ltd

Senteu Plaza, 1st Floor

Cnr of Galana and Lenana Roads

Kilimani

P.O Box 29170-00100

Nairobi, Kenya

T: +254 740 861 650/1

CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

AfDB:	African Development Bank
AoI:	Area of Influence
BID:	Background Information Document
CBD:	Convention on Biological Diversity
CCSEAF:	Cold Chains Solutions East Africa Fund LP
CCSEAL:	Cold Chan Solutions East Africa Limited
CFCs:	Saturated Chlorofluorocarbons
CSKL:	Cold Solutions Kenya Limited
DCC:	Development Control Committee
DOSHS:	Directorate of Occupational Safety and Health Services
ECO:	Environmental Control Officer
EHS:	Environmental, Health and Safety
EIA:	Environmental Impact Assessment
EMCA:	Environmental Management and Coordination Act
ERM:	Environmental Resources Management Consulting East Africa Limited
ERP:	Emergency Response Plan
ESG:	Environmental and Social Governance
ESIA:	Environmental and Social Impact Assessment
ESMMP:	Environmental and Social Management and Monitoring Plan
ESMS:	Environmental and Social Management System
FGD:	Focus Group Discussions
GIS:	Geographical Information System
GPS:	Global Positioning Systems
GWP:	Global Warming Potential
HFCs:	Hydrofluorocarbons
IAQM:	Institute of Air Quality Management
IFC:	International Finance Corporation’s
ISS:	Integrated Safeguards System
IWRM:	Integrated Water Resource Management
KCAA:	Kenya Civil Aviation Authority
KII:	Key Informant Interviews
NEMA:	National Environment Management Authority
NGO:	Non-Governmental Organisation
NLC:	National Land Commission
NTSA:	National Transport and Safety Authority
ODP:	Ozone Depleting Potential
OHS:	Occupational Health and Safety
PM:	Project Manager

PPE:	Personal Protective Equipment
SEA:	Strategic Environmental Assessment
SERC:	Standard and Enforcement Review Committee
SEZ:	Special Economic Zone
SIA:	Social Impact Assessment
TCSF:	Tatu City Temperature-controlled Cold Storage Facility
TIP:	Tatu Industrial Park
TMP:	Traffic Management Plan
U-HFCs:	Hydrofluorocarbons
UNFCCC:	United Nations Framework for Convention on Climate Change
WHO:	World Health Organisation
WMP:	Waste Management Plan
WRA:	Water Resource Authority
WWTP:	Wastewater Treatment Plant

EXECUTIVE SUMMARY

Project: Environmental and Social Impact Assessment (ESIA) Project Report for the proposed Tatu City Temperature-controlled Storage Facility (TCSF) at Tatu Industrial Park (TIP) within the wider Tatu City mixed use Special Economic Zone (SEZ), Ruiru Sub-county, Kiambu County, Kenya.

Project Proponent: Cold Solutions Kenya Limited (CSKL).

ESIA Consultants: Environmental Resources Management Consulting East Africa Limited (ERM)

Project Description

The Project involves the construction and operation of up to 12,000 m^2 of cold storage warehouse, including end to end logistics for customers. As such, the main Project components comprise:

- The collection, storage and distribution of the following products:
  - Agricultural (fruit and vegetables);
  - Meat, poultry and seafood;
  - Food products for supermarkets, quick service restaurants and hotels;
  - Pharmaceuticals and healthcare; and
  - Food manufacturing.
- Capacity for approximately 15,000 - 20,000 pallets of storage.
- Utility infrastructure including:
  - an onsite wastewater treatment plant for treatment (WWTP) and recycling of water used in the refrigeration system and for water used in light food processing (washing and packaging of fruits and vegetables);
  - An integrated power system comprising roof-top solar Photovoltaic (PV) system and a backup generator in case of grid outages (to service 2-3 MW power demand);
  - Supporting facilities including office space, ablution facilities, and a guardhouse.
- 25-30 cross-docking bays for loading and un-loading of goods.
- End-to-end customer logistics serviced by 40 refrigerated vehicles.

Figure 0.1 provides a conceptual layout of the Project facility, including the superstructure and docking bays.

Figure 0.1 Conceptual Project Design

ESIA Process/Methodology

The ESIA is being undertaken in fulfilment of the Environmental Management Coordination Act (EMCA) of 1999 and the 2015 Amendments, and the Environmental (Impact Assessment and Audit) Regulations of 2003 (and the Amendments of 2016 and 2019). In particular, the National Environment (Impact Assessment and Audit) (Amendment) Regulations of 2019 classifies the proposed Project (specifically, agriculture and related activities, including medium size agricultural and livestock produce storage facilities, and, go-downs for storage and warehouses) as **Medium Risk** which can be approved through the preparation and submission of ESIA Project Reports(1). The ESIA is also aligned to the requirements of international good practice and lender requirements, such as ARCH's Environmental and Social Framework, the International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability, of 2012 (where it falls in Category B Projects), and the Integrated Safeguard System of the African Development Bank (AfDB) (where it falls in Category 2 Projects).

Data Collection

Various data collection methods were used as follows:

Remote Sensing and GIS Analysis

Remote sensing was undertaken and ground-truthed in the field by the consultants at the time of the site visit. Remote sensing was based on available recent satellite imagery of the Project Site.

Document Review

A literature review was undertaken based on the findings of the reconnaissance process, which involved reviewing legislation, policies, the County Integrated Development Plan, and previous studies carried out in the area to determine the baseline conditions (such as the SEA undertaken for the Tatu City SEZ and ESIA undertaken for Precinct 3BA of the Tatu City Industrial Park), and to

(1) As per the 2016 and 2019 amendments of the National Environment (Impact Assessment and Audit) Regulations, Projects are classified as Low, Medium and High Risk based on their environmental and social risks. Low and Medium Risk projects maybe approved through the submission of ESIA Project Reports; however, these amendments specify that High Risk projects shall require submission of an ESIA Study Report.

establish the legal, institutional and biophysical / socio-economic baseline setting of the specific Project area.

Site Visit

Site investigations were undertaken on 16th April 2020 during which environmental and social baseline data was collected. Data was collected through:

- a number of stakeholder meetings (mainly virtual meetings to comply with social distancing requirements due to the COVID-19 pandemic);
- Key Informant Interviews (KII) especially with the technocrats of the relevant institutions;
- Focus Group Discussions (FGD) with the area Chief and Village Elders; and
- Site walkovers.

Impact Assessment

The purpose of impact assessment is to identify and evaluate the significance of potential impacts on identified receptors and resources according to defined assessment criteria, and to develop and describe mitigation measures that will be taken to avoid or minimise any potential adverse effects on the natural or social environment, and to enhance any potential benefits.

The impacts of the proposed Project were identified based on the findings of stakeholder consultation, the existing baseline conditions, the proposed Project activities and professional knowledge of the consultants. Impacts are first be distinguished as either positive or negative (*Chapter 9* of this Project Report). The cross-sectoral issues and aspects are: Occupational Health and Safety (OHS) aspects; air quality, especially dust during construction; road traffic related impacts, waste management; and social aspects particularly related to the removal of a sacred mugumo tree from the Project Site during construction, and aspects related to labour recruitment and management.

ESIA Project Report Objectives

The objectives of this ESIA Project Report are to:

- Identify all potentially significant adverse environmental and social impacts of the Project and recommend measures for mitigation.
- Gather baseline data to inform the assessment of impacts and to monitor changes to the environment as a result of the Project, as well as to evaluate the success of the mitigation measures implemented.
- Recommend measures to be used to avoid or reduce the anticipated negative impacts on the environmental and social environments, and to enhance the positive impacts.
- Prepare an ESIA Project Report compliant to EMCA and the Environmental (Impact Assessment and Audit) Regulations of 2003 (and the Amendments of 2016 and 2019), detailing findings and recommendations for review by NEMA.
- Prepare an Environmental and Social Management and Monitoring Plan (ESMP) for implementation on the site during both the construction and operations phases. The ESMMP is incorporated in the ESIA Project Report.

Stakeholder Engagement

Stakeholder Engagement ensures that the views and concerns of stakeholders (including the community) are incorporated as early as possible into the project development (i.e., at the planning, implementation and operations phase), to minimise any potential unexpected opposition to the proposed development, and to incorporate the views of stakeholders into the design process.

The main objective of the Stakeholder Engagement process is to inform stakeholders and the public about the proposed Project and its likely effects, and in turn incorporate their inputs, views and concerns into project planning. A summary of stakeholder engagement conducted during the ESIA process is presented in Table 0.1 whilst Table 0.2 summarises the key questions, concerns and comments raised by stakeholders. Further detail is included in the Stakeholder Engagement Plan (SEP) provided in **Appendix C**. The Background Information Document (BID) used during the stakeholder engagement exercise in presented in **Appendix D** whereas detailed minutes of the stakeholder engagement meetings conducted during the ESIA process, photos of meetings (where this was possible) and attendance registers, are all presented in **Appendix E**.

Table 0.1 Details of ESIA Process Stakeholder Engagement

Stakeholder	Mode of Engagement	Engagement Date	Venue
Tatu City Management	Key Informant Interviews (KII)	20th May 2020.	Via Zoom
		3rd June 2020.	Tatu City Management Offices
Tatu City Training Academy	KII	3rd June 2020	Tatu City Training Academy
Area Chief, Ruiru	KII	16th April 2020.	Assistant Chief's Office
Katrina Management Consultants Limited	By email	18th June 2020	By email
Office of the Deputy County Commissioner, Ruiru Sub-county	Teleconference and by email	1st July 2020	Teleconference and by email
Ruiru Village Headmen	KII	29th June 2020	Area Chief's Office
Hankar Trading Company Limited	By email	10th July 2020	By email

Table 0.2 Outcomes of ESIA Process Stakeholder Engagements

Main Theme brought up by Stakeholders	Key stakeholders issues/ comments
On Stakeholder Engagement	Consult widely, including consultations with Tatu City, the District Commissioner (DC), County Commissioner (CC), Clerk County assembly of Kiambu, Area Chief and the village elders. Other additional stakeholders can include neighbouring communities which includes: • Ruiru Juja Water and Sewerage Company (RUJUWASCO); • Tatu City Water and Sewerage Company (TCWSC); • STECOL Corporation (In charge of Road Construction in Tatu City); • Unity Homes; • Tatu City Training Academy; • Hunkar Gas; and • Tianlong Cylinder Company.
	It is commendable that Tatu City have built a strong and positive relationship with the community. The Tatu brand is based on the Mugumo Tree.

Main Theme brought up by Stakeholders	**Key stakeholders issues/ comments**
	Consider Stakeholder issues raised during stakeholder consultation process.
On Positive impacts/ opportunities	▪ Employment opportunities for the local community members during construction and operations. ▪ Achievement of a cold storage facility. ▪ Price stability for agricultural products (meat, horticulture products, etc). ▪ Food security (as a result of improved storage). ▪ Achieved of agriculture best practice (related to storage of agricultural produce). ▪ Enhanced trade with regards to fresh products. ▪ Contributes towards development of Tatu City and particularly make it a hub for cold storage facility.
Shared facilities	There are shared facilities within the Project area, such as electricity, water, sewer lines etc. It is best practice to inform the neighbours of any planned activities or disruptions that may take place. This will also help in good management and in harmonised planning and development.
On Information already shared with the local communities	The Communities were already informed about the mixed developments.
	Tatu City has a community Liaison officer (CLO) who can help with information dissemination.
Cultural constraint: Information provided on the process required for the removal of the Mugumo Tree on the Project Site.	Tatu City will take over the handling of the Mugumo Tree and have a liaison officer who will manage the ceremonial process required. Tatu City will work closely with CSKL and ERM to ensure the process is well followed and documented.
	The Mugumo tree is considered sacred by the Kikuyu community and it was very important to make sure the correct process is followed, before deciding whether it can be removed. (Note that the required process was subsequently established but the required ceremony is yet to be conducted)
	It has been confirmed by the Council of Elders that the tree can be removed subject to a ritual being performed given that no 'binding ceremony' has taken place historically at this tree and it is not used for active cultural services. Tatu City in coordination with CSKL is organising for this ceremony to take place.
Social issue: Coffee Plantation Resettlement/Displacement	During the development of Tatu City, there was only economic displacement (displacement of the coffee plantation); however, there were no communities that got displaced as a result of the economic zone development.
	According to the Community Liaison Officer – there are ~100 people that were affected by this economic displacement. Tatu City has provided for these people and their subordinates through exclusive free training and job opportunities for those affected.
	Majority of these displaced people are currently working in Tatu City construction projects and in Tatu City's coffee plantation (~5000 ha coffee farm).
	Tatu City is providing better compensation for its employees - currently, the minimum wage in Tatu City is 500 KSH/day whereas people who used to work in the coffee plantation were paid 30 KSH/16 kg of coffee picked.

Main Theme brought up by Stakeholders	Key stakeholders issues/ comments
	Those who were affected were mainly farmers who depended on Coffee picking as a source of livelihood. They were identified, trained and absorbed through employment within Tatu City for jobs such as carpenters, tailors, etc
Stormwater management	The stakeholders mentioned that Tatu City should implement a long-term solution for stormwater management since whenever it rains, some places flood and, stormwater damages roads and property. This issue became noticeable after converting the former coffee plantations into Tatu City and is likely to get worse as more plots within the estate get developed.
Corporate Social Responsibility (CSR)	As part of CSR, Tatu City should consider construction of a bridge and culvert to OJ-Kogeria Road to improve the drainage system/ management of stormwater especially during heavy storms.
Management of Negative Impacts	▪ Management of dust and noise emissions. ▪ GHG emissions ▪ Stormwater management/ drainage ▪ Potential of ammonia leakage and associated impacts. ▪ Waste Management with reference to potential organic waste and effluent management. ▪ Increased usage of the Tatu City Infrastructure. ▪ Smell of organic waste during operation. ▪ Occupational Health and Safety (OHS) diseases especially for those who will work in the cold storage facility for a long period.

Potential Impacts and Mitigation Measures

The Physical, Biological and Socio-economic impacts identified for the construction and operations phase that have been identified and assessed in the ESIA, are summarised in *Table 0.3* and *Table 0.4*.

Table 0.3 Summary of Construction Phase Impacts

Impact	Significance (pre-mitigation)	Residual Impact
Impacts on Local Air Quality	Minor Negative	Negligible
Impacts on the Noise Environment and Vibrations	Minor Negative	Minor Negative
Impacts on Water Resources	Minor Negative	Negligible
Impact on Biodiversity	Minor Negative	Negligible
Waste and Effluent	Moderate Negative	Minor Negative
Impacts on Employment, Procurement and the Economy	Positive Impact	Positive Impact
Impact on Disease Transmission	Moderate Negative	Minor Negative
Traffic Impacts	Moderate Negative	Minor Negative
Labour and Working Conditions (Including Occupational Health and Safety)	Moderate Negative	Minor Negative
Impact on Cultural Resources	Moderate Negative	Negligible

Table 0.4 Summary of Operation Phase Impacts

Impact	Significance (pre-mitigation)	Residual Impact
Impacts on Local Air Quality	Minor Negative	Negligible
Direct Project GHG Emissions	Negligible	Negligible
Waste and Effluent	Moderate Negative	Minor Negative
Impacts on Employment, Procurement and the Economy	Positive Impact	Positive Impact
Traffic Impacts	Moderate Negative	Minor Negative
Labour and Working Conditions (Including Occupational Health and Safety)	Moderate Negative	Minor Negative

All the identified impacts are either of moderate or minor significance even prior to the application of the appropriate mitigation measures. With proper implementation of the recommended mitigation/management measures, the significance of the residual impacts are all reduced to a minor or negligible significance, which is mainly attributed to the fact that:

- The Project Site is located within the Tatu City Special Economic Zone (SEZ), in particular, the planned Tatu Industrial Park (TIP). The Masterplan for the Tatu City SEZ was approved on 6th September 2011 (NEMA/SEA/5/2/11) through a Strategic Impact Assessment (SEA). Subsequently, precinct 3BA in which the TIP is located was approved through an ESIA on 14th August 2015 (NEMA/EIA/PSL/2158) and a variation for the ESIA license obtained on the 28th July 2017 (NEMA/EIA/VC/636).
- Given the above early planning and approval process was completed, there are no settlements in or the immediate surroundings of the Project Site. The Project will therefore not result in any displacement (neither physical, nor economic). The management of Tatu City has a 99-year lease and will sub-lease the required plot of land to the Project Proponent.
- Through the SEA (mentioned above) all environmental and social sensitivities within the planned Tatu City, such as the main Mugumo tree, which is an important cultural site and preserved, and wetlands were identified and avoided where possible during the planning of the detailed developments. Therefore, there is no environmental or social red-flag/ fatal flaw at the Project Site, given avoidance measures were implemented at the original project planning phases.
- The management of Tatu City will provide for external shared facilities and services, such as water supply, electricity distribution networks, waste management facilities (including sewage management) and access roads.
- The Project Site is located within a planned industrial area and will be surrounded by other light industries, and thus fits within the land use planning of the Project Area.

An Environmental and Social Management and Monitoring Plan (ESMMP) has been prepared as an output of this ESIA process, to ensure that social and environmental impacts and risks identified during the ESIA process are effectively managed during the construction and operations of the Project. The ESMMP specifies the mitigation and management measures to which CSKL and the Contractor are committed and provides for the organizational capacity and resources to implement these measures. The ESMMP also shows how the implementation of mitigation and management measures will ensure Project compliance to applicable laws and regulations within Kenya, as well as the requirements of international good practice and lender requirements.

ERM is confident that every effort will be made by CSKL to implement the mitigation measures as recommended in this report. In summary therefore, and based on the findings of this assessment, ERM finds no reason why the Project should not be authorised, contingent on the mitigations and monitoring for potential environmental and socio-economic impacts are implemented, as outlined in the ESMMP.

1. INTRODUCTION

1.1 Overview

Cold Solutions Kenya Limited (hereafter referred to as the Project Proponent/ CSKL), appointed Environmental Resources Management Consulting East Africa Limited (ERM) to act as independent environmental and social consultants to undertake the Environmental and Social Impact Assessment (ESIA) for the construction and operation of the proposed Tatu City Temperature-controlled Storage Facility (TCSF) and associated logistics operations (hereafter referred to as the Project). ERM is a NEMA-registered and practicing firm of experts (Registration No. NEMA/EIA/RC/572 and 2020 practicing License No. NEMA/EIA/ERPL/11480) – refer to **Appendix A**.

The Project Site is located at Tatu Industrial Park (TIP) within the wider Tatu City mixed use Special Economic Zone (SEZ), Ruiru Sub-county, Kiambu County, Kenya (Table 1.1 and Figure 1.1). The management of Tatu City has a 99-year lease of the Project Area (L.R. No. 28867/1) from which a sub-lease will be given to the Project Proponent. Given that the Project Area is in a light industry zone within a gazetted SEZ, it fits within the planning proposed of the Project Area. The Master Plan of the SEZ was approved through a Strategic Environmental Assessment (SEA) – SEA approval reference number NEMA/SEA/5/2/11 dated 06th September 2011 and an EIA for the wider precinct 3BA (which is expected to include light industries, commercial facilities, residential facilities, a school and a hospital, and other associated amenities) has already been completed and approved (EIA approval Certificate No. NEMA/EIA/PSL/2158 – dated 14th August 2015) and its validity extended on 28th July 2017 (Certificate No. NEMA/EIA/VC/636) -Appendix B.

The Tatu City mixed use SEZ is in the western neighbourhood of Ruiru Town and approximately 10 km north-east of Kenya's Capital City, Nairobi.

The Project involves the construction and operation of up to 12,000 m^2 of cold storage warehouse, including end to end logistics for customers. The facility will be capable of handling between 15,000-20,000 pallets at full capacity. Key components of this facility include:

- Warehouse facility with different refrigeration temperature zones. Refrigeration technology may include ammonia, or be Glycol or CO_2-based;
- Supporting facilities, including pump room, chiller area, power system (roof-top solar), and guardhouse;
- 26 Loading and unloading bays; and
- A Small Wastewater Treatment Plant (WWTP) to treat cooling water effluent to national discharge standards, and to recycle 60% of such back into the cooling system.

A detailed description of the Project components is presented in *Chapter 4* of this report.

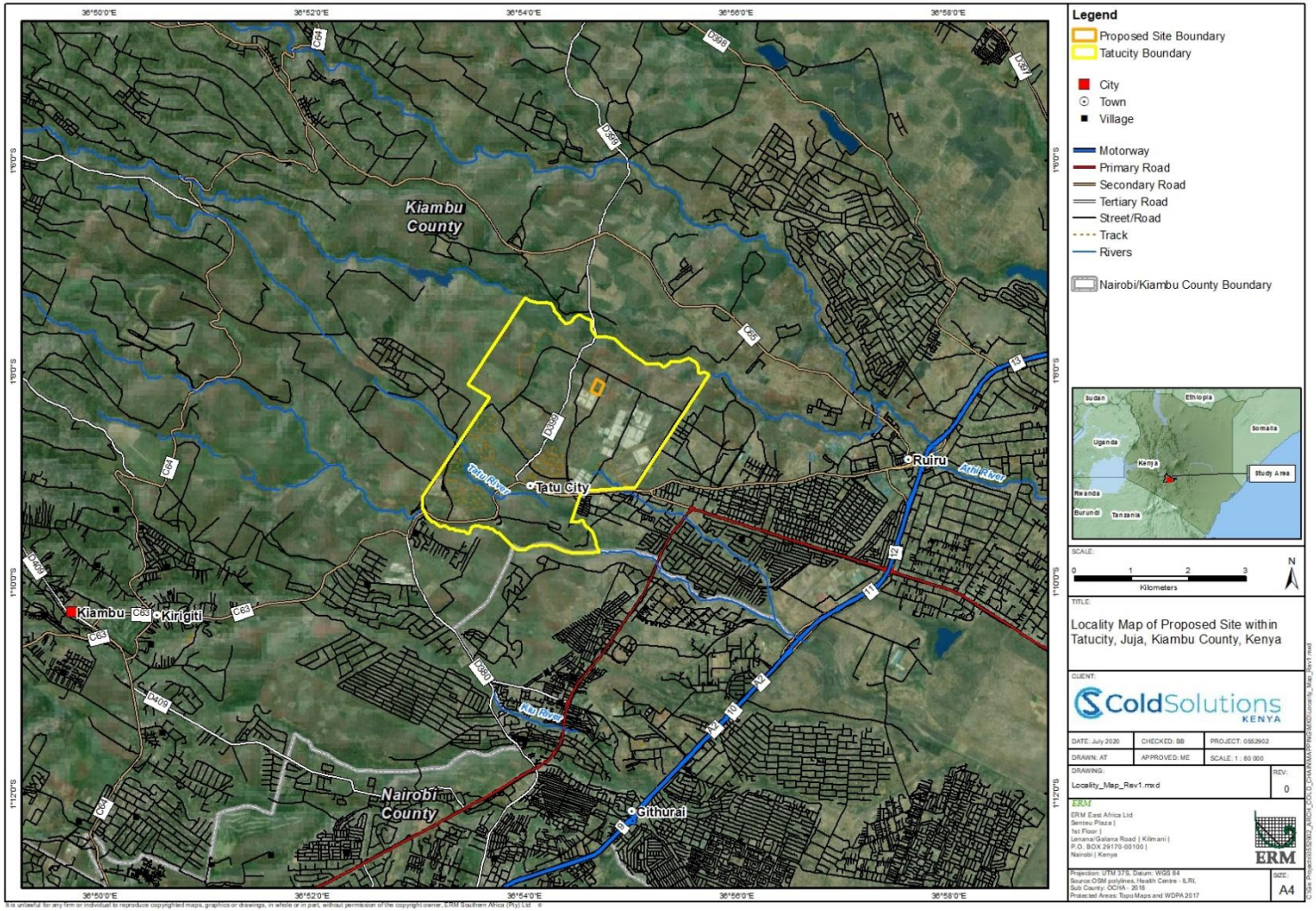
This ESIA Project Report has been compiled as part of the Kenyan Environmental Impact Assessment (EIA) Process in accordance with regulatory requirements stipulated in the Environmental Management and Coordination Act of 1999 (and 2015 Amendments) (EMCA) and the Environmental (Impact Assessment and Audit) regulations of 2003 (and the Amendments of 2009, 2016 and 2019). The ESIA has also been undertaken in line with the requirements of the International Finance Corporation's (IFC) Performance Standards on Environmental and Social Sustainability (2012) and the Integrated Safeguard System of the African Development Bank (AfDB).

Table 1.1 Corner Coordinates of the Project Site

Corner	Latitude	Longitude
A	1° 8'4.11"S	36°54'41.00"E
B	1° 8'6.67"S	36°54'45.50"E

Corner	Latitude	Longitude
C	1° 8'13.41"S	36°54'42.42"E
D	1° 8'11.10"S	36°54'37.98"E

Figure 1.1 Project Locality Map



1.2 Purpose of the Report

The information contained in this ESIA Project Report, along with comments and inputs received from stakeholders and commenting authorities, will assist the competent authority, the National Environment Management Authority (NEMA), in deciding whether or not to grant environmental authorisation for the proposed Project, and to inform the conditions associated with such authorisation.

The ESIA process involves the identification, prediction and evaluation of actual and potential environmental and social impacts of the Project and outlines the proposed mitigation measures for negative impacts and enhancement measures for positive impacts which the Project Proponent will implement.

The objectives of this document are to:

- Communicate the results of the ESIA process for the proposed Project and alternatives considered;
- Ensure that the impacts identified during the ESIA process are assessed;
- Present the mitigation and enhancement measures which will be implemented by the Project Proponent to manage the impacts identified;
- Provide a record of comments and responses received from Stakeholders during the ESIA process; and
- Facilitate an informed decision-making process by the relevant authorities.

1.3 Project Justification

There is a severe shortage of cold chain solutions across East Africa resulting in large post-harvest food losses and seasonally affected supply chains causing volatility in market pricing. The cold storage facilities and logistics operations developed by CCSEAL will result in positive development outcomes both directly, by reducing food losses and flattening market pricing, and also indirectly, through businesses that will develop within the value chain.

Food loss is a significant contributor not only to food insecurity, but also to Green House Gases (methane) emissions in Africa, therefore a reduction in food losses will also contribute to a related reduction in Green House Gas emissions. As such, from the offset, CCSEAL's activities are geared towards achieving positive environmental and social impacts.

The proposed facility at TIP is the flagship facility to be built by the Project Proponent in East Africa and provides the blueprint for the development, construction and operations of other such facilities, in other targeted areas, including in Mombasa, Kenya.

1.4 Project Proponent

The Project Proponent, Cold Solutions Kenya Limited (CSKL), is a corporate entity incorporated in Kenya with the objective of developing a portfolio of cold storage warehouses and end-to-end logistics to help close the current gap of a severe shortage of cold chain solutions in Kenya.

CSKL is a portfolio company of ARCH Cold Chains Solutions East Africa Fund LP (CCSEAF), set up to develop, construct and operate the projects in Kenya. CCSEAF is developing a cold chains solutions network across East Africa including Kenya, Uganda, Rwanda, Ethiopia and Tanzania. The Tatu Project is the first facility being rolled out and the second will be in Mombasa. In total three

facilities and associated logistics operations are foreseen to be developed in Kenya within the next three years.

CCSEAF is funded by Development Finance Institutions (DFIs) and other institutional investors. As such, all projects are developed in accordance with the standards of these institutions – detailed further in Chapter 2

1.5 Environmental and Social Impact Assessment Consultant

Environmental Resources Management Consulting East Africa Limited (ERM) was appointed by the Project Proponent to undertake the ESIA for the proposed Project. ERM have no financial ties to, nor are they a subsidiary, legally or financially, of the Project Proponent.

ERM is a leading global provider of integrated environmental, health, safety, risk, social consulting and sustainability related services with over 160 offices in more than 40 countries and territories. ERM has operated throughout Africa for over thirty-five years and our Sub-Saharan Africa Business Division with over 200 employees is currently based in South Africa (Cape Town, Durban and Johannesburg), Mozambique (Maputo), Kenya (Nairobi) and Tanzania (Dar Es Salaam).

The ESIA team for this Project is presented in *Table 1.2*.

Table 1.2 ERM Project Team

Position	Name	Qualifications
Partner in Charge	Michael (Mike) Everett	• M.Sc. Hydrology, • B.Sc. (Hons) Hydrology and Soil Science • NEMA Kenya Lead EIA/Audit Expert (Reg. No 7263)
Project Manager and Environmental Specialist	Barnabas Busheshe	• Bachelor of Science in Forestry (Honours), Makerere University, Uganda, 2011.
Social Consultant and Stakeholder Engagement Lead	Gideon Owaga	• Master's in Rural Sociology and Community Development, • Bachelor of Arts in Sociology and Public Administration, • Associate Member of Environmental Institute of Kenya (EIK), • NEMA Kenya Associate EIA/Audit Expert (Reg. no 10452)

1.6 Report Structure

The structure of this ESIA Project Report is outlined in *Table 1.3*.

Table 1.3 Report Structure

Section	Contents
Chapter 1: Introduction	Contains an overview of the Project, Project justification, Project Proponent, Environmental and Social Impact Assessment Consultant and an outline of the report structure.
Chapter 2: Legal and Institutional Framework	Outlines the legislative, policy and administrative requirements applicable to the proposed Project.
Chapter 3: Approach and Methodology	Outlines the approach to the ESIA and summarises the process undertaken by the Project to date.
Chapter 4: Project Description	Includes a detailed description of the proposed Project activities.
Chapter 5: Consideration of Alternatives	Describes the alternatives that have been considered and the reasons for the selection of the preferred alternative.

Section	Contents
Chapter 6: Biophysical Baseline	Describes the receiving biophysical baseline environment.
Chapter 7: Socio-economic Baseline	Describes the receiving socio-economic baseline environment.
Chapter 8: Stakeholder Engagement	Describes the approach to and outcomes of the stakeholder engagement and public participation process.
Chapter 9: Impacts Assessment and Mitigation Measures	Describes and assesses the potential environmental and social impacts of the proposed Project. Mitigation measures are also presented.
Chapter 10: Environmental and Social Management and Monitoring Plan (ESMMP)	Specifies the mitigation and management measures to be undertaken and shows how the Project will mobilise organisational capacity and resources to implement these measures.
Chapter 11: Conclusions and Recommendations	Summarises the key findings of the ESIA process and provides recommendations for the mitigation of potential impacts and the management of the proposed Project.
References	Contains a list of references used in compiling the report.

In addition, the Report includes the following Appendices:

Appendix A: ERM NEMA Registration and 2020 Practicing Licence
Appendix B: NEMA Correspondences and Approvals already obtained for the Project Area
Appendix C: Stakeholder Engagement Plan (SEP)
Appendix D: Background Information Document (BID) used during the Stakeholder engagement exercise
Appendix E: Detailed minutes of stakeholder engagement meetings conducted during the ESIA process, including meeting photos and attendance registers/ stakeholders' comments

2. NATIONAL LEGISLATION AND INTERNATIONAL GOOD PRACTICE REQUIREMENTS

2.1 General Overview

This *Chapter* outlines the existing national and international environmental and social legislation, policies and institutions applicable to the Proposed Project that will guide the development of the Project, which is subject to this ESIA Project Report. This includes a summary of the IFC's Performance Standards on environmental and social sustainability and the Integrated Safeguard System of the African Development Bank (AfDB). As Kenya is a signatory to various international conventions and laws, relevant international conventions are also presented.

2.2 Kenya Policy Provisions

2.2.1 Session Paper No.10 of 2014 on the National Environment Policy, 2014

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

Section 5.6 of this Session Paper focusses on infrastructure development and environment and makes explicit policy statements to ensure sustainable management and use of the environment and natural resources during the construction and operation of infrastructure developments including roads. These policy statements require the commitment of the Government to:

- Ensure Strategic Environmental Assessment (SEA), Environmental Impact Assessment (EIA), Social Impact Assessment (SIA) and Public Participation in the planning and approval of infrastructural projects;
- Develop and implement an environmentally friendly national infrastructural development strategy and action plan; and
- Ensure that periodic Environmental Audits are carried out for all infrastructural projects.

Relevance to this Project

In line with the above policy statements, this ESIA has been conducted for the proposed Cold Storage Facility (CSF)to ensure that environmental and social issues are appropriately addressed within the framework of the existing SEA for Tatu City and EIA for TIP.

2.2.2 Vision 2030

Kenya Vision 2030 is the country's development blueprint covering the period 2008-2030. It aims to transform Kenya into a newly industrialised, ‘*'middle income country providing a high-quality life to all its citizens by the year 2030''*.

Vision 2030 is based on 3 key pillars namely: Economic, Social, and Political. These pillars are anchored on the following foundations:

- macro-economic stability;
- continuity in governance reforms;
- enhanced equity and wealth creation opportunities for the poor;
- infrastructure;
- energy;
- science, technology and innovation;
- land reform;
- human resources development;

- security; and
- public sector reforms.

Relevance to this Project

Vision 2030 aspires for a country firmly interconnected through, among others, improved food security and recognises that in order to achieve this, investment in the nation's food infrastructure will be given the highest priority. The proposed Project is geared towards development and operation of large-scale cold chain facilities with integrated distribution offered by third party providers as part of the actions towards improvement of food security within the country, which is in line with the objectives of Vision 2030.

2.2.3 National Policy on Water Resources Management and Development, 1999

The National Policy on Water Resources Management and Development promotes the systematic development of water facilities in all sectors while recognising wastewater as a by-product of this process. The Policy therefore calls for development of appropriate sanitation systems to protect people's health and water resources from institutional pollution. This implies that industrial and business development activities should be accompanied by corresponding waste management systems to handle the wastewater and other waste emanating there from.

Relevance to this Project

The policy advocates for appropriate waste management to avoid pollution of water resources. All the wastes (including effluents) from the Project activities will need to be appropriately managed, guided by an effective Waste Management Plan (WMP) to avoid pollution of the dams and rivers located in the Project Area, such as Syngenta Flowers Dam which is located approximately 900 metres south of the Project Site.

2.3 National Legal Framework

2.3.1 Administrative Framework

In 2001, the Government established the administrative structures to implement the Environmental Management and Co-ordination Act of 1999 (EMCA). The main administrative structures are described in the following sections.

The National Environmental Council

The National Environmental Council is responsible for policy formulation and directions in relation to the EMCA. The Council also sets national goals and objectives and determines policies and priorities for the protection of the environment.

The National Environment Management Authority (NEMA)

The responsibility of NEMA is to exercise general supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all policies relating to the environment.

Standard and Enforcement Review Committee (SERC)

EMCA provides for the establishment and enforcement of environmental quality standards by a technical committee of NEMA known as the Standards and Enforcement Review Committee (SERC).

Public Complaints Committee

EMCA also established a Public Complaints Committee, which provides the administrative mechanism for addressing environmental harm. The Committee has the mandate to investigate

complaints relating to environmental damage and degradation. The members of the Public Complaints Committee include representatives from the Law Society of Kenya, non-governmental organisations (NGOs) and the business community.

Water Resource Authority (WRA)

The WRA is responsible for the regulation of water resources such as water allocation, source protection and conservation, water quality management and pollution control and international waters. Its roles and responsibilities are as follows:

- Planning, management, protection and conservation of water resources;
- Planning, allocation, apportionment, assessment and monitoring of water resources;
- Issuance of water permits;
- Water rights and enforcement of permit conditions;
- Regulation of conservation and abstraction structures;
- Catchment and water quality management;
- Regulation and control of water use; and
- Co-ordination of the Integrated Water Resource Management (IWRM) Plan.

Relevance to this Project

The above established institutions are relevant to the CSF Project to ensure appropriate and compliant management of both environmental and social issues associated with the Project. In particular, the Project Proponent must obtain the NEMA EIA Certificate of approval prior to the commencement of the construction activities, confirming that adequate mitigation measures have been proposed and will be implemented during the Project lifecycle to reduce any identified environmental and social impacts to acceptable levels.

2.4 Relevant Statures

The current legal provisions for natural resource management in Kenya are contained in over seventy sector-specific statutes. In 1999, the Government of Kenya enacted the Environmental Management and Co-ordination Act (EMCA) which is an umbrella legal framework and institutional framework under which the environment is managed. The Act prevails over all other sectoral laws relating to the environment in cases of conflict or contradictions. It also grants the public a *locus standi* in matters of the environment.

2.4.1 The Constitution of Kenya

In the Constitution of Kenya, 2010, Part II (Environment and Natural Resources), (I), the State clearly undertakes to carry out the following:

- Ensure sustainable exploitation, utilization, management and conservation of the environment and natural resources, and ensure the equitable sharing of the accruing benefits;
- Work to achieve and maintain a tree cover of at least ten per cent of the land area of Kenya;
- Protect and enhance intellectual property in, and indigenous knowledge of, biodiversity and the genetic resources of the communities;
- Encourage public participation in the management, protection and conservation of the environment;
- Protect genetic resources and biological diversity;
- Establish systems of environmental impact assessment, environmental audit and monitoring of the environment;

- Eliminate processes and activities that are likely to endanger the environment; and
- Utilise the environment and natural resources for the benefit of the people of Kenya.

It further stipulates in Part II that "*Every person has a duty to cooperate with State organs and other persons to protect and conserve the environment and ensure ecologically sustainable development and use of natural resources*."

Relevance to this Project

The Project should observe the above stated conditions in as far as environmental protection is concerned.

2.4.2 The Environmental Management and Co-ordination Act, 1999 (and amendments made in 2015)

The Environment Management and Co-ordination Act (EMCA), 1999, and amendments made in 2015, is implemented by the guiding principle that every person has a right to a clean and healthy environment and can seek redress through the high court if this right has been, is likely to be or is being contravened.

Section 58 of the Act makes it a mandatory requirement for an EIA to be carried out by proponents intending to implement projects specified in the second schedule of the Act [(1)]. Such projects have a potential of causing significant impacts on the environment. Similarly, Section 68 of the same Act requires operators of existing projects or undertakings to carry out environmental audits in order to determine the level of conformance with statements made during the EIA.

Relevance to this Project

The proposed CSF Project falls within the category of medium risk projects for which an EIA Project Report is required. More specifically:

- *Agriculture and related activities, including medium size agricultural and livestock produce storage facilities;*
- *Medium scale processing and manufacturing industries, including:*
  - *food-processing plants or agro-based processing plants; and*
  - *go-downs for storage and warehouses.*

This EIA has therefore been carried out in line with the requirements of this Act, and the Project Proponent is required to commit to implementing the Environmental and Social Management and Monitoring Plan (ESMMP) laid out in this Project Report, as well as any other conditions as stipulated by NEMA, prior to being issued an EIA licence.

2.4.3 The Environmental (Impact Assessment and Audit) Regulations, 2003 (and amendments made in 2009, 2016 and 2019)

The Environmental (Impact Assessment and Audit) Regulations state in Regulation 3 that "the Regulations should apply to all policies, plans, programmes, projects and activities specified in Part IV, Part V and the Second Schedule of the Act". Part II of the Regulations indicates the procedures to be taken during preparation, submission and approval of the ESIA Project Report, i.e., this Report. Specifically, the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2016 and 2019 contains an updated version of the Second Schedule in which the proposed Project falls in the category of medium risk projects for which an EIA Project Report is required.

Relevance to this Project

(1) The Second Schedule of the EMCA was updated in the Environmental (Impact Assessment and Audit) (Amendment) Regulations, 2016 and 2019.

This ESIA Project Report has been undertaken to comply with the requirements of these Regulations.

2.4.4 The Environmental Management and Co-ordination (Water Quality) Regulations, 2006

The Regulations provide for sustainable management of water resources including prevention of water pollution and protection of water sources. It is an offence under Regulation No. 4 (2), for any person to throw or cause to flow into or near a water resource any liquid, solid or gaseous substance or deposit any such substance in or near it, as to cause pollution. Regulation No. 11 further makes it an offence for any person to discharge or apply any poison, toxic, noxious or obstructing matter, radioactive waste or other pollutants or permit the dumping or discharge of such matter into the aquatic environment unless such discharge, poison, toxic, noxious or obstructing matter, radioactive waste or pollutant complies with the standards for effluent discharge into the environment.

Relevance to this Project

The provision of the water quality regulations will need to be observed to avoid pollution of the nearby dams and rivers such as the Syngenta Flowers Dam located approximately 900 m south of the Project Site where any run-off from the Project Site is expected to end. Furthermore, any effluent discharged to the municipal sewer will also need to meet permit requirements.

2.4.5 The Environmental Management and Co-ordination (Waste Management) Regulations, 2006

The Regulations provide details on management (handling, storage, transportation, treatment and disposal) of various waste streams including:

- domestic waste;
- industrial waste;
- hazardous and toxic waste;
- pesticides and toxic substances;
- biomedical wastes; and
- radioactive wastes.

Regulation No. 4 (1) makes it an offence for any person to dispose of any waste on a public highway, street, road, recreational area or in any public place except in a designated waste receptacle.

Monitoring the product cycle from beginning to end is also required by:

- identifying and eliminating potential negative impacts of the product;
- enabling the recovery and re-use of the product where possible;
- reclamation and recycling; and
- Incorporating environmental concerns in the design and disposal of a product.

Regulation 6 requires waste generators to segregate waste by separating hazardous waste from non-hazardous waste for appropriate disposal. Regulation 15 prohibits any industry from discharging or disposing of any untreated waste in any state into the environment. Regulation 17 (1) makes it an offence for any person to engage in any activity likely to generate any hazardous waste without a valid Environmental Impact Assessment license issued by NEMA.

Relevance to this Project

The Project will generate wastes during the construction and operation phases, which will need to be disposed of as per the Regulations.

2.4.6 The Environmental Management and Co-ordination Act (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009

These Regulations were published as legal Notice No. 61 being a subsidiary legislation to the Environmental Management and Co-ordination Act, 1999. The Regulations provide information on the following:

- prohibition of excessive noise and vibration;
- provisions relating to noise from certain sources;
- provisions relating to licensing procedures for certain activities with a potential of emitting excessive noise and/or vibrations; and
- noise and excessive vibrations mapping.

According to Regulation 3 (1), no person shall make or cause to be made any loud, unreasonable, unnecessary or unusual noise which annoys, disturbs, injures or endangers the comfort, repose, health or safety of others and the environment. Regulation 4 prohibits any person to (a) make or cause to be made excessive vibrations which annoy, disturb, injure or endanger the comfort, repose, health or safety of others and the environment; or (b) cause to be made excessive vibrations which exceed 0.5 centimetres per second beyond any source property boundary or 30 metres from any moving source.

Regulation 5 further makes it an offence for any person to make, continue or cause to be made or continued any noise in excess of the noise levels set in the First Schedule to these Regulations, unless such noise is reasonably necessary to the preservation of life, health, safety or property.

Regulation 12 (1) makes it an offence for any person to operate a motor vehicle which- (a) produces any loud and unusual sound; and (b) exceeds 84 dB(A) when accelerating. According to sub-Regulation 2 of this Regulation, no person shall at any time sound the horn or other warning device of a vehicle except when necessary to prevent an accident or an incident. Regulation 13 (1) provides that except for the purposes specified in sub-Regulation (2) there under, no person shall operate construction equipment (including but not limited to any pile driver, steam shovel, pneumatic hammer, derrick or steam or electric hoist) or perform any outside construction or repair work so as to emit noise in excess of the permissible levels as set out in the Second Schedule to these Regulations.

Regulation 19 (1) prohibits any person to carry out activities relating to fireworks, demolitions, firing ranges or specific heavy industry without a valid permit issued by the Authority. According to sub-Regulation 4, such permit shall be valid for a period not exceeding three months. Table 2.1 presents the maximum permissible noise levels for construction sites in Kenya per these regulations.

Table 2.1 Maximum Permissible Noise for Construction Sites in Kenya

	Facility	**Maximum Permissible Noise Level in dB(A)**	
		Day (06:01 – 18:00, LAeq, 12 hour)	Night (18:01 – 06:00, LAeq 12 hour)
(i)	Health facilities, educational institutions, homes for disabled etc.	60	35
(ii)	Residential	60	35
(iii)	Areas other than those prescribed in (i) and (ii) (and of applicability to this Project).	75	65

Relevance to this Project

The Proponent will be required to ensure compliance with the above Regulations in order to promote a healthy and safe working environment throughout the construction and operation phases. This shall include regular inspection and maintenance of equipment to reduce noise and vibration, prohibition of

unnecessary noise emitted from movement of construction equipment and Project heavy and light vehicles, adherence to the noise levels stipulated for day and night etc.

2.4.7 The Environmental Management and Co-ordination Act (Air Quality), Regulations, 2014

The Kenyan Air Quality Standards as part of *The Environmental Management and Co-ordination Act 1999*, were transposed into Kenyan legislation through *The Environmental Management and Co-ordination (Air Quality) Regulations, 2014*. These standards include a consideration of the type of area within which the proposed Project is located – i.e. industrial area.

Relevance to this Project

The Project is located in an industrial zone where a number of light industrial developments are on-going. Dust creating activities during the construction phase will largely be associated with land clearing and earthworks. Air quality considerations during the operations phase will be associated with truck movements and the infrequent operation of a backup generator for power. Table 2.2 *presents the ambient air quality tolerance limits for industrial areas.*

Note - where Kenyan standards are set out in terms of parts per million, these have been converted to µg/m^3 for ease of comparison.

Table 2.2 Kenya's Ambient Air Quality Tolerance Limits for Industrial Areas

Pollutant	Time Weighted Average	Tolerance Limit
SO_X	Annual average	80 µg/m^3
SO_X	24 hours	125 µg/m^3
NO_X	Annual average	80 µg/m^3
NO_X	24 hours	150 µg/m^3
NO_2	annual average	150 µg/m^3
NO_2	24 hours	100 µg/m^3
Suspended Particulate Matter (SPM)	Annual average	360 µg/m^3
Suspended Particulate Matter (SPM)	24 hours	500 µg/m^3
Respirable Particulate Matter (<10µm) (RPM)	Annual average	70 µg/m^3
Respirable Particulate Matter (<10µm) (RPM)	24 hours	150 µg/m^3
$PM_{2.5}$	Annual average	35 µg/m^3
$PM_{2.5}$	24 hour maximum	75 µg/m^3
Lead	Annual average	1.0 g/Nm^3
Lead	24 hours	1.5 g/m^3
Carbon monoxide (CO)/ carbon dioxide (CO_2)	8 hours	5.0 mg/m^3
Carbon monoxide (CO)/ carbon dioxide (CO_2)	1 hour	10.0 mg/m^3

Pollutant	Time Weighted Average	Tolerance Limit
Hydrogen Sulphide	24 hours	150 µg/m^3
Non-methane hydrocarbons	instant Peak	700 ppb
Total Volatile organic Compounds (VOC)	24 hours	600 µg/m^3
Ozone	1-Hour	200 µg/m^3
Ozone	8 hour (instant Peak)	120 µg/m^3

2.4.8 Traffic Act (Cap 403, revised in 2015 and the Amendments of 2017)2017

This Act consolidates the law relating to traffic on the roads. Part III of this Act details the procedure for licensing of vehicles while Part IV details the process of obtaining a driving license. Part V of this Act lists the driving and other offenses relating to the use of vehicles on the road.

Section 69 of this Act makes it the duty of the police:

- to regulate all traffic and to keep order and prevent obstruction in all roads, parking places and other places of public resort; and
- to divert traffic temporarily, or to restrict or close and deny public access to any road, parking place or other place of public resort, where any emergency or any assembly or other event appear to render advisable such a course.

Section 70 of this Act further makes it a requirement for the relevant authority to install road signs on or near a road including road traffic signs prescribing speed limits on the road.

Relevance to this Project

A number of vehicles and equipment will be used for the Project during both construction and operation. All of these vehicles and pieces of equipment need to be licensed, as well as their drivers, in line with the requirements of this Act. Where necessary, the Project Proponent will liaise with the police for the regulation of Project related traffic as well as the installation of any additional Project road signs, as required.

2.4.9 Urban Areas and Cities Act, 2011

This Act provides for the, classification, governance and management of urban areas and cities, among others. Part V of this Act focusses on integrated development planning which shall give effect to the development of urban areas and cities as required by this Act and any other written law, among others.

Relevance to this Project

Implementation of the Project will be aligned to the integrated development planning of Kiambu County and Tatu City in particular.

2.4.10 The National Transport and Road Safety Act, 2012

This Act provides for the establishment of the National Transport and Safety Authority (NTSA), the powers and functions of the Authority, and for connected purposes. Section 22 of this Act provides for the establishment of county transport and safety committees in each county whose roles are to:

- Oversee the management and regulation of the road transport system by the Authority at the county level;

- Prepare and submit to the Authority such audit reports as the Authority may require on the safety, reliability and efficiency of the road transport system within the county;
- Advise the Authority on matters affecting the road transport system within the county; and
- Perform such other functions as may be assigned to it by the Authority.

Relevance to this Project

In implementing the proposed Project, the Project implementation team will liaise with County transport and safety committees as well as the management of Tatu City in planning for Project related road transportation.

2.4.11 Land Act, 2012

This is an Act of Parliament intended to give effect to Article 68 of the Constitution, to revise, consolidate and rationalise land laws, to provide for the sustainable administration and management of land and land-based resources, and for connected purposes.

Parts 1 and 2 of Section 4 of the Act outline the main guiding principles in land management and administration, binding to all land actors including State officers. These principles are to be applied when enacting, applying or interpreting any provisions of this Act; and when making or implementing public policy decisions. In discharging their functions and exercising of their powers under this Act, the Commission and any State officer or Public officer shall be guided by the following values and principles:

- equitable access to land;
- security of land rights;
- sustainable and productive management of land resources;
- transparent and cost-effective administration of land;
- conservation and protection of ecologically sensitive areas;
- elimination of gender discrimination in law, customs and practices related to land and property in land;
- encouragement of communities to settle land disputes through recognised local community initiatives;
- participation, accountability and democratic decision making within communities, the public and the Government;
- technical and financial sustainability;
- affording equal opportunities to members of all ethnic groups;
- non-discrimination and protection of the marginalized;
- democracy, inclusiveness and participation of the people; and
- alternative dispute resolution mechanisms in land dispute handling and management.

Article 5 of the Land Act lists forms of land tenure: Freehold; Leasehold; such forms of partial interest as may be defined under this Act and other law, including but not limited to easements and customary land rights, where consistent with the Constitution. This article also provides for equal recognition and enforcement of land rights arising under all tenure systems and non-discrimination in ownership of, and access to land under all tenure systems.

Article 56 of the Land Act on the power to lease land states that the owner of private land may:

(a) Lease that land or part of it to any person for a definite period or for the life of the lessor or of the lessee or for a period which though indefinite, may be terminated by the lessor or the lessee; and

(b) Subject the lease to any conditions that may be required by this Act or any other law or that the lessor may impose.

Relevance to this Project

The plot for the proposed Project is one of the many plots in the wider Tatu City whose management has a long-term (99 years) lease (L.R. No. 28867/1). The Project Proponent is in the process of obtaining a sub-lease for the Plot through a Land lease agreement, from the management of Tatu City, in accordance with the requirements of this Act.

2.4.12 National Land Commissions Act, 2012

This is an Act of Parliament to make further provision as to the functions and powers of the National Land Commission, qualifications and procedures for appointments to the Commission, to give effect to the objects and principles of devolved government in land management and administration, and for connected purposes.

The mandate of the Commission, as provided for in the Act, Pursuant to Article 67(2) of the Constitution, shall be:

- to manage public land on behalf of the national and county governments;
- to recommend a national land policy to the national government;
- to advise the national government on a comprehensive programme for the registration of Title in Land throughout Kenya;
- to conduct research related to land and the use of natural resources, and make recommendations to appropriate authorities;
- to initiate investigations, on its own initiative or on a complaint, into present or historical land injustices, and recommend appropriate redress;
- to encourage the application of traditional dispute resolution mechanisms in land conflicts;
- to assess tax on land and premiums on immovable property in any area designated by law;
- to monitor and have oversight responsibilities over land use planning throughout the country;
- on behalf of, and with the consent of the national and county governments, alienate public land;
- to monitor the registration of all rights and interests in land;
- to ensure that public land and land under the management of designated state agencies are sustainably managed for their intended purpose and for future generations;
- develop and maintain an effective land information management system at national and county levels;
- manage and administer all unregistered trust land and unregistered community land on behalf of the county government; and
- develop and encourage alternative dispute resolution mechanisms in land dispute handling and management.

Relevance to this Project

Any land ownership documents required for the Proposed Project must be confirmed by the National Land Commission (NLC).

2.4.13 Land Registration Act, 2012

This is an Act of Parliament intended to revise, consolidate and rationalise the registration of titles to land, to give effect to the principles and objects of devolved government in land registration, and for connected purposes.

Land Registry

Section 7(1) of the Act provides for establishment of a land registry in each registration unit which shall keep registers of the following regarding land:

- a land register, in the form to be determined by the Commission;
- the cadastral map;
- parcel files containing the instruments and documents that support subsisting entries in the land register;
- any plans which shall, after a date appointed by the Commission, be geo-referenced;
- the presentation book, in which shall be kept a record of all applications numbered consecutively in the order in which they are presented to the registry;
- an index, in alphabetical order, of the names of the proprietors; and
- a register and a file of powers of attorney.

Maintenance of Documents, including Land Title Deeds

Further, Section 9 (1) provides that the Registrar shall maintain the register and any document required to be kept under this Act in a secure, accessible and reliable format. These documents include:

- publications, or any matter written, expressed, or inscribed on any substance by means of letters, figures or marks, or by more than one of those means, that may be used for the purpose of recording that matter;
- electronic files; and
- an integrated land resource register.

The register, as provided for in Part 2 of Section 9, shall contain the following particulars;

- name, personal identification number, national identity card number, and address of the proprietor;
- in the case of a corporate body, name, postal and physical address, certified copy of certificate of incorporation, personal identification numbers and passport size photographs of persons authorised and where necessary attesting the affixing of the common seal;
- names and addresses of the previous proprietors;
- size, location, user and reference number of the parcel; and
- any other particulars as the Registrar may, from time to time, determine.

Relevance to this Project

The land lease agreement for the Project land will need to be registered in accordance with the provisions of this Act.

2.4.14 Water Act, 2016

The Water Act No. 43 of 2016 provides for the regulation, management and development of water resources, water and sewerage services; and for other connected purposes. As stated in Section 63,

every person in Kenya has the right to clean and safe water in adequate quantities and to reasonable standards of sanitation as stipulated in Article 43 of the Constitution.

Section 21(1) of this Act provides for national monitoring and information systems on water resources. Section 21(2) that follows mandates the Water Resources Authority (WRA) to demand from any person, within a reasonable time or on a regular basis, to provide it with specified information, documents, samples or materials in relation to the system referred to in Section 21(1). Under these rules, specific records may require to be kept by a site operator and the information thereof furnished to the authority.

Section 36 makes it a requirement to obtain a permit for any of the following purposes:

- any use of water from a water resource, except as provided by Section 37 (1);
- the drainage of any swamp or other land;
- the discharge of a pollutant into any water resource; and
- any other purpose, to be carried out in or in relation to a water resource, which is prescribed by Regulations made under this Act to be a purpose for which a permit is required.

Section 38 makes it an offence for any person who:

- without a permit, constructs or employs works for a purpose for which a permit is required; or
- being the holder of a permit, constructs or employs any such works in contravention of the conditions of the permit.

In line with Section 5(1) of the Second Schedule of this Act, the permit holder shall submit a completion certificate in the prescribed form upon the expiration of the time limited by a permit for construction of works authorised by the permit, or where the construction is completed before the expiration of that time.

Section 143 (1) further prohibits any person from participating in any of the following activities without authority conferred under this Act:

- wilfully obstruct, interfere with, divert or obstruct water from any watercourse or any water resource, or negligently allow any such obstruction, interference, diversion or abstraction; or
- throw, convey, cause or permit to be thrown or conveyed, any rubbish, dirt, refuse, effluent, trade waste or other offensive matter or thing into or near to any water resource in such manner as to cause, or be likely to cause, pollution of the water resource.

Relevance to this Project

Water at the Project site will be provided by Tatu City which was permitted under a separate arrangement; however, discharges from the on-site wastewater treatment plant will need to be done in line with the provisions of this Act and conform to the permit requirements. A permit for the onsite WWTP will be obtained via Tatu City DCC once detailed designs are completed.

(1) Section 37 lists water use practices that are exempted from the acquisition of a water use permit. These include:

(a) for the abstraction or use of water, without the employment of works, from any water resource for domestic purposes by any person having lawful access to the water resource;

(b) for the abstraction of water in a spring which is situated wholly within the boundaries of the land owned by any one landholder and does not naturally discharge into a watercourse abutting on or extending beyond the boundaries of that land; or

(c) *for the storage of water in, or the abstraction of water from a reservoir constructed for the purpose of such storage and which does not constitute a water course for the purposes of this Act.*

2.4.15 Water Quality Regulations, 2006

The Water Quality Regulations (2006) are contained in the Kenya Gazette Supplement No 68, Legal Notice No 120. Of immediate relevance to the proposed project for the purposes of this ESIA Project Report is Part II, Sections 4 - 5, as well as Part V, Section 24.

Part II, Section 4 states that "Every person shall refrain from any act which directly or indirectly causes, or may cause, immediate or subsequent water pollution."

Part V, Section 24 states that "No person shall discharge or apply any poison, toxic, noxious or obstructing matter, radioactive wastes, or other pollutants or permit any person to dump or discharge any such matter into water meant for fisheries, wildlife, recreational purposes of any other uses."

Relevance to this Project

Effluent discharges from the Project WWTP will need to comply with the provisions of these Regulations.

2.4.16 Water Resources Management Rules (2007)

In addition to the Water Act 2016, the main document outlining applicable Regulations is the Water Resource Management Rules 2007. The rules set out the procedures for obtaining water use permits and the conditions placed on permit holders.

Relevance to this Project

Water for the Project will be provided by the Tatu City; however, discharges from the on-site Wastewater Treatment Plant will need to conform to the effluent permit provisions/conditions.

2.4.17 Climate Change Act, 2016

This is an Act to provide for a regulatory framework for enhanced response to climate change; to provide for mechanisms and measures to achieve low carbon climate development. Section 3 stipulates in part, that the national and county governments shall promote low carbon technologies, improve efficiency and reduce emissions intensity by facilitating approaches and uptake of technologies that support low carbon, and climate resilient development. According to section 15 of the Act, each state department and national government public entity shall integrate the climate change action plan into sectoral strategies, action plans and other implementation projections for the assigned legislative and policy functions and report on sectoral greenhouse gas emissions for the national inventory.

Relevance to this Project

While designing the Project, low carbon technologies are supposed to be evaluated and considered where feasible to minimise greenhouse gas emissions. (These are discussed in the Project Description chapter (Chapter 4)).

2.4.18 The Public Health Act (Cap 242)

This is an Act of Parliament to make provision for securing and maintaining health. Section 115 of this Act prohibits causing nuisance or other condition liable to be injurious or dangerous to health. Section 118 provides a list of nuisances which includes any noxious matter, or wastewater, flowing or discharged from any premises, wherever situated, into any public street, or into the gutter or side channel of any watercourse, irrigation channel or bed thereof not approved for the reception of such discharge.

Relevance to this Project

Implementation of the Project will pose potential health risks especially to the Project workers such as dust and noise impacts, and Occupational Health and Safety (OHS) risks. These risks and impacts will need to be appropriately managed as recommended in Chapter 9 of this report.

2.4.19 The Public Health (Drainage and Latrine) Rules, Cap 130, 1958

Rule 85 provides that every owner or occupier of every workshop, workplace or other premises where persons are employed shall provide proper and sufficient latrines for use by employees.

Rule 87 requires every contractor, builder or other person employing workmen for the demolition, construction, reconstruction or alteration of any building or other work in any way connected with building to provide in an approved position sufficient and convenient temporary latrine for use by such workmen. Rule 91 provides that no person shall construct a latrine in connection with a building other than a water closet or a urinal, where any part of the site of such building is within 200 feet of a sewer belonging to the local authority which is at a suitable level, and where there is sufficient water supply.

Relevance to this Project

Human waste particularly from the construction and operations workers will need to be properly managed in line with the provisions of these rules. For instance, there should be appropriate lavatories for the Project workers at the workplace, with discharge into either a sewage network, or collection for discharge by a licensed NEMA waste contractor.

2.4.20 The Physical Planning Act, 1996

This is the main Act that governs land planning. It stipulates that all proposed developments must be approved by the respective local authority and a certificate of compliance issued accordingly.

This Act provides for the preparation and implementation of physical development plans for connected purposes. It establishes the responsibility for the physical planning at various levels of Government in order to remove uncertainty regarding the responsibility for regional planning.

Relevance to this Project

A key provision of the Act is the requirement for an Environmental Impact Assessment (EIA) to be conducted prior to the issuing of a certificate of compliance for the Project Facility. In addition, the building plans of the proposed Project will need to be approved by the Development Control Committee (DCC) of Tatu City and by the appropriate officials of Kiambu County.

2.4.21 Civil Aviation Act, 2013

This is an Act of Parliament to provide for the control, regulation and orderly development of civil aviation in Kenya and for connected purposes and Safety of aircraft and persons on board.

Section 46 (1) of the Act stipulates that a person shall not wilfully or negligently:

a) Imperil the safety of an aircraft or any person on board, whether by interference with any member of the crew of the aircraft or by tampering with the aircraft or its equipment, or by disorderly conduct or by any other means;

b) Cause or permit an aircraft to endanger any person or property;

c) Interfere or tamper with an air navigation facility.

(2) A person who contravenes the provisions of subsection (1) commits an offence and shall be liable upon conviction to a fine not exceeding two million shillings.

Relevance to this Project

In approving the Project's Development Plans, Kiambu County in liaison with Tatu City DCC will evaluate and consider applicability of this Act. To note that the Tatu City DCC have granted a waiver for the building height, and thus if is the responsibility of the DCC to obtain the waiver from the Civil Aviation Authority (CAA) as part of the land purchase agreement.

2.4.22 The Occupational Safety and Health Act, 2007

This is an Act of Parliament to provide for the safety, health and welfare of all workers and all persons lawfully present at workplaces, to provide for the establishment of the National Council for Occupational Safety and Health and for connected purposes.

It applies to all workplaces where any person is at work, whether temporarily or permanently.

The purpose of this Act is to:

- secure the safety, health and welfare of persons at work; and
- protect persons other than persons at work against safety and health arising out of, or in connection with the activities of persons at work.

Relevance to this Project

The Act establishes codes of practices to be approved and issued by the Directorate of Occupational Safety and Health Services (DOSHS) for practical guidance of the various provisions of the Act. For the purposes of this Project, the Contractor will be required to have in place an adequate Health and Safety Plan, which may be subject to inspection as to the adequacy of its implementation by the DOSHS. During operations, a valid certificate of occupancy will be required for the Project. Annual DOSH audits will also be required during operations.

2.4.23 The Employment Act No 11, 2007

The Act is enacted to consolidate the law relating to trade unions and trade disputes, to provide for the registration, regulation, management and democratisation of trade unions and employers organisations and federations. Its purpose is to promote sound labour relations through freedom of association, the encouragement of effective collective bargaining and promotion of orderly and expeditious dispute the protection and promotion of settlement conducive to social justice and economic development for connected purposes. This Act is important since it provides for an employer – employee relationship that is important for the activities that would promote management of the environment at a workplace.

Relevance to this Project

The contractor and Project Proponent, being the primary employer, during the construction and operational phases of the Project, are bound by this law to abide to its stipulations on employee management and relations.

2.4.24 HIV/AIDS Prevention and Control Act (Act No.14 of 2006, Revised in 2012)

This is an Act of Parliament to provide measures for the prevention, management and control of HIV and AIDS, to provide for the protection and promotion of public health and for the appropriate treatment, counselling, support and care of persons infected or at risk of HIV and AIDS infection, and for connected purposes.

Part II, Section 7 of this Act requires HIV and AIDs education in the workplace. In accordance with the requirements of this Act, the government is expected to ensure provision of basic information and instruction on HIV and AIDs prevention and control to: Employees of all Government ministries, Departments, authorities, and other agencies; and, Employees of private and informal sectors. The information on HIV and AIDs is expected to be treated with confidentiality at the workplace and positive attitudes shown towards infected employees and workers.

Relevance to this Project

HIV and AIDs prevention and control is one of the main challenges facing many countries in Sub-Saharan Africa, including Kenya. The Project Proponent will need to implement awareness

programmes to share information with regards to HIV and AIDS prevention and control to all Project employees as well as other measures to curb the spread of HIV/AIDS, in conformance to this Act.

2.4.25 List of Environmental and Social Permits Required for the Project, as per the Requirements of Kenyan Law

Table 2.3 provides a summary of the environmental and social permits and licences required for the Project for both the construction and the operations phases.

Table 2.3 Relevant Environmental and Social Permits Required for the Project

Phase	Sector	Legislation	Authority	Permit/Licence	Comments
Construction Phase	Environment	EMCA	NEMA	EIA Licence	The EIA licence will give the decision criteria for NEMA and associated conditions of approval, which will need to be met. An annual audit report to NEMA will be required to indicate conformance to these permit conditions are achieved.
		Environmental Management and Coordination (Waste Management) Regulations, 2006	NEMA	Ensure that the contracted waste handlers (transport and disposal) are licensed by NEMA	When disposing waste; it is important to note that Tatu City have licensed waste disposal arrangements in place, in conformance with NEMA requirements.
	Land	Land Act 2012, National Land Commissions Act, 2012, Land Registration Act, 2012	National Land Commission	Title Deeds/ lease	Acquire a long-term lease from the management of Tatu City
		Physical Planning Act, 1996	Planning Department (Ministry of Lands) through Tatu City DCC	Development Approval	Relates to building and urban planning. In particular, the height of the building will be considered during the design approval process. A Condition Precedent of the land sale agreement is that TCL/DCC and the CAA are to provide approval for a 24m building height waiver, post submission of detailed concept design drawings submitted to DCC.
	Occupational Health and Safety	Occupational Health and Safety, 2007	Directorate of Occupational Health and Safety (DOSH)	Registration of workplace	Prior to construction
	Height Safety	Civil Aviation Act, 2013	Kenya Civil Aviation Authority (KCAA)	Height Permit	In the sales agreement for the purchase of the land, the property height restriction has been defined as *"the maximum Height of any Building to be constructed by the Purchaser on the Property shall not exceed twenty-four (24) meters above the Natural Ground Level of the site to the top of the ridge of the highest Storey"*

Phase	Sector	Legislation	Authority	Permit/Licence	Comments
Operation Phase	Environment	EMCA	NEMA	Initial Environmental Audit Acknowledgement Letter and Self-Audit Acknowledgement thereafter	An annual NEMA audit is required throughout the operations phase
	Occupational Health and Safety	Occupational Health and Safety, 2007	Directorate of Occupational Health and Safety (DOSH)	Registration of workplace	Permit renewed annually subject to annual DOSH Audits. In particular, the annual audits will also need to include fire safety inspections. These audits are to be conducted by DOSH accredited independent parties.

2.5 Relevant Tatu City Management Plans

2.5.1 Tatu Industrial Park Architectural Guidelines

These are the principle guidelines aimed at streamlining all the developments within the TIP in the interest of those who will live, work, and operate businesses within the Project Area. These guidelines give the Development Control Committee (DCC) of Tatu City the mandate to conduct design reviews and serve as the monitoring body for their implementation. While complying with the approved land use of the TIP, these guidelines are designed to:

- Apply to all industrial designated properties within Tatu City;
- Allow for flexibility to accommodate creative design that meets the intent of adopted principles;
- Do not prolong approval processes, and
- Encourages design review that parallels development design for economy of design resources.

Section F of these guidelines states that "*major change(s) to plans approved by the DCC may only be amended by the same procedures provided herein for original design approval. Design review for amendments shall be limited to the proposed change, except the proposed amendment shall be considered in context with approved design review*."

Section G of these guidelines indicates that approved designs will be varied for a period of 2 years (period in which construction activities are supposed to have started). A single two-year extension may be granted for good cause as determined by the DCC.

Section 2.3.2 of these guidelines states that "*buildings shall observe fire protection distances between adjacent buildings (as outlined in the Kenya Building Code and the Occupational Safety & Health Act.) and Special conditions and protection distances in the case of the storage of potentially explosive or highly flammable liquids, gases or other hazardous materials*."

The guidelines further state in Section 2.5 that:

- The maximum height of building in the Tatu Industrial Park shall not exceed 15m; however, this has been varied in the land sale agreement and the DCC shall obtain any necessary waivers for this change in height; and
- The Maximum number of storeys shall be 2 (Two). The DCC interpretation of 2 storeys is ground floor (6m) and first floor (4.5m – floor to the ceiling soffit or wall plate).

Section 3 of the guidelines requires the designs to incorporate appropriate pedestrian access and other relevant amenities. Furthermore, Section 4 requires incorporation of appropriate vehicular access and parking at the projects.

Section 14 makes it the responsibility of the developer(s) to conduct and obtain relevant environmental permits/ an EIA License.

2.5.2 DCC Building Plan Preparation and Submission Guidelines

These guidelines describe the appropriate process for the preparation and submission of the building plans to the DCC. They require each developer within Tatu City to prepare a Site Development Plan, Building plans, Landscape designs, Sections, Elevations and all other detailed drawings in sufficient detail as required by the DCC, for scrutiny in electronic format, for approval prior to submission to the County Government of Kiambu. After a comprehensive review, DCC will issue the developer a Review and Comments Letter, communicating the comments raised during the review process. If the drawings are found to be satisfactory, the DCC shall issue a DCC Approval letter and a

recommendation to submit to Kiambu County for county approval. County approval is not guaranteed, and county may still come back with comments or request for additional information.

Prior to the commencement of the construction phase (after obtaining all the pre-requisite approvals), all developers shall notify the DCC of their intent to start construction and arrange for a site handover meeting with the DCC. This will allow the DCC to make all necessary arrangements for the contractor to commence works.

After the completion of the construction activities, the DCC shall issue a certificate of compliance prior to application for an occupation permit from the county, if the construction is found to have complied with the approved drawings and architectural guidelines, standards and codes from Tatu City. The developer will then apply and obtain a county occupation permit.

2.6 International Conventions, Protocols and Agreements

Kenya is signatory to a number of international conventions and agreements relating to environmental and social matters (refer to **Table 2.4**). In certain cases, these have influenced the promulgation of domestic policy, guidelines and regulations.

Although not all treaties/ conventions listed below have been enacted into domestic legislation; good practice would require that the ethos of each treaty be taken into consideration during the planning, construction and operations phases of the Project.

Table 2.4 Summary of International Conventions

International Convention	Objective	Relevance to this Project
Montreal Protocol on substance that deplete the ozone layer, 1987 (and the Kigali Amendment of 15th October 2016)	Control of manufacture and use of ozone depleting substances.	Many refrigerants have both Global Warming Potential (GWP) and Ozone Depleting Potential (ODP). The selection of the refrigerants for the Project should avoid those phased out under this protocol as described in the analysis of alternatives in Chapter 5 of this report.
United Nations Convention on Biological Diversity (CBD)	The three goals of the CBD are to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources.	The habitats at the Project Site are highly modified which is attributed to previous land use (particularly farming) and the subsequent zoning of the Project Area as an industrial zone. However, landscape planning should consider the need to conserve biodiversity and prevent spread of invasive plant species.
United Nations Framework for Convention on Climate Change (UNFCCC)	Its main objective is to achieve the stabilisation of greenhouse gas concentrations in the atmosphere at a level that prevents dangerous anthropogenic interference with climate systems and within a specific timeframe which will allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.	The emission of greenhouse gases during the implementation of the proposed Project should be controlled to avoid compromising the objective of this convention.

International Convention	Objective	Relevance to this Project
Bamako Convention, 1991	This convention focusses on the ban of the import of hazardous wastes into Africa and the control of transboundary movement and management within Africa.	Any Project associated hazardous wastes will need to be appropriately managed to avoid contravention of this convention. Moreover, Project Procurement will need to screen all Project goods and products exported from the Country. Appropriate and authorised destinations for the export of hazardous waste will need to be identified.
Basel Convention, 1989	Transboundary transportation and disposal of hazardous wastes. Its objective is to protect human health and the environment against the adverse effects of hazardous wastes.	Any Project waste will need to be correctly classified to identify what qualifies as hazardous waste according to this convention. Appropriate and authorised destinations for the export of hazardous waste will need to be identified.
World Heritage Convention, 1972	This convention requires each State Party to recognise the duty of ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage.	There is a *Mugumo* Tree identified on the Project site that is of Cultural importance and should be managed as described in detail in Chapter 9 of this Project Report.
Convention for the safeguarding of the intangible cultural heritage, 2003	The objectives of this convention include to: safeguard the intangible cultural heritage; ensure respect for the intangible cultural heritage of the communities, groups and individuals concerned and raise awareness at the local, national and international levels of the importance of the intangible cultural heritage, and of ensuring mutual appreciation thereof.	As part of the social study associated with the ESIA, cultural and natural heritage (including intangible cultural heritage) have been considered and appropriate measures for their management have been included in Chapter 9 of this Project Report.

2.7 International Good Practice and Lender Requirements

2.7.1 ARCH's Environmental and Social Framework

CCSEAF has developed an Environmental and Social Management System (ESMS) that will guide all investments into East Africa. CCSEAF is committed to developing and operating best-in-class cold storage and logistics operations in its target countries.

The objective of CCSEAF's ESMS is to continually endeavour to enhance effective environmental and social (E&S) management practices in all of her activities, products, and services with a special focus on the following considerations:

- Ensuring that applicable E&S requirements are met for all Investments;

- Integrating environmental and social risk assessments into investment due diligence processes;
- Ensuring appropriate consultation and transparency in project activities;
- Working together with the portfolio companies and business partners to put into practice applicable E&S requirements; and
- Actively seek investments with positive development benefits.

CCSEAF's ESMS includes the following policy statements:

2.7.1.1 CCSEAF E&S Compliance Framework

- Comply with or exceed all applicable legislation and regulations in the countries of investment;
- Apply the IFC Environmental and Social Performance Standards (2012) and the World Bank Group (WBG) General Environmental, Health and Safety Guidelines (2007) to assess and manage E&S risks of investments – explained in Sections 2.7.2 and 2.7.3 respectively; and
- Apply the African Development Bank Group's (AfDB) Integrated Safeguards System (2013) – explained in Section 2.7.4.

2.7.1.2 Environmental and Social Commitments

- Ensure the sustainable and efficient use of resources;
- Prevent, or where this is not feasible minimise and mitigate, the release of pollutants to air, water and land;
- Minimise our contribution to climate change through the renewable power (solar) and minimising waste to landfill;
- Avoid or otherwise minimise and mitigate degradation of natural habitats, biodiversity and ecosystem services;
- Promote a culture of environmental stewardship by employees, portfolio companies, operational partners and contractors;
- Deliver positive contributions to the environmental conditions of the local area of investments;
- Ensure that no hydrofluorocarbons (HFCs) or other ozone depleting substances listed under the Montreal Protocol and its Amendments are used in the facilities refrigeration technology;
- Where batteries are used in conjunction with roof-top solar, on disposal they will be sent to a licenced recycling facility;
- Cause CCSEAF's facilities to be certified to ISO 2200 Food Safety Management™;
- Provide a safe and healthy work environment for all of CCSEAF's employees and require the same of our portfolio companies;
- Treat all of CCSEAF's employees fairly and respect their dignity, well-being and diversity and require the same of our portfolio companies;
- Comply with the International Labour Organisation's Fundamental Conventions and the UN Declaration of Human Rights;
- Protect neighbouring communities from the impacts of investment activities and prioritise them in the distribution of project benefits, for example employment;
- Provide additional support to vulnerable groups from investment activities and identify and manage differing impacts on women and men, youth and elderly;

- Avoid physical and economic displacement, and where this is not possible identify land that is the least impacting and within a Category B profile;
- Identify and manage local and cultural community sensitivities through comprehensive stakeholder engagement.

2.7.1.3 Engagement and Disclosure

- Ensure that interactions with stakeholders are inclusive, transparent and are relationship building driven;
- Ensure that planning of investment activities is done in consultation with affected communities;
- Provide mechanisms for stakeholders to raise issues and grievances; and
- Publicly disclose this Policy and ensure that it is communicated to key stakeholders.

2.7.1.4 Governance and Business Integrity

- Conduct all of business dealings with honesty, integrity, fairness, diligence and respect;
- Have zero tolerance of bribery, corruption, fraud and unethical behaviour, whether under UK law or the law of any other country where there are operations;
- Seek to invest in businesses that commit to these values.

2.7.1.5 Development Impact

CCSEAF seeks to achieve positive development outcomes in the markets it serves through supporting the following UN Sustainable Development Goals:

- Goal 1&2 – End Poverty and Zero Hunger: through reducing post-harvest losses across East Africa by 2 to 3%;
- Goal 3 – Good Health & Well-being: designing facilities to be able to store essential pharmaceutical products for the region;
- Goal 5 – Promote Gender Equality and Empower Women: by being an equal opportunities employer and actively promoting the recruitment of women;
- Goal 8 – Decent Work and Economic Growth: providing long-term employment aligned with the ILO's Fundamental Conventions and investing in workforce development; and
- Goal 13 – Climate Action: maximising renewable energy, reducing post-harvest losses, reducing waste and waste to landfill;

2.7.1.6 Commitment to continuous Improvement

CCSEAF is committed to continuous improvement of its E&S Management. As such, this Policy and associated ESMS will be regularly reviewed and updated as required, to reflect International Best Practice.

2.7.2 International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability, 2012

The International Finance Corporation (IFC), a division of the World Bank Group that lends to private investors, has a Sustainability Policy and set of Performance Standards (PSs) on Social and Environmental Sustainability (January 2012). It should be noted that even for Projects that do not

anticipate seeking financing from the IFC, the IFC PSs are typically applied as a benchmark of international good practice.

The PSs are directed towards providing guidance on how to identify 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. In the case of direct investments for the IFC (including project and corporate finance provided through financial intermediaries), the IFC requires that its clients apply the PSs to manage environmental and social risks and impacts so that development opportunities are enhanced (IFC, 2012). A number of lenders have adopted these IFC PSs.

A summary of the scope of the IFC PSs and the applicability to the Project is set out in Table 2.5.

Table 2.5 IFC Performance Standards

No.	Title	Key Requirement	Relevance to the Project
1	Assessment and Management of Social and Environmental 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.	The proposed Project will be associated with some environmental and social impacts which will need to be appropriately managed.
2	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 Organisation (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 recognising 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 the developer or contractor (direct workers), engaged through third parties (contracted workers), and workers engaged by the client's primary suppliers (supply chain).
3	Resource Efficiency and Pollution Prevention	This PS aims to abate pollution to air, water, and land that may threaten people and the environment at the local, regional, and global levels. This Performance Standard promotes the ability of private sector companies to adopt such technologies and practices where feasible.	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 first priority to avoid or minimise pollution as much as possible.
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 none routine events. The PS also requires an assessment of how use of security by the Project to safeguard personnel and property could impact on community security considering human rights.	Implementation of the proposed Project will need to ensure that the health, safety and security of local community members is not compromised.
5	Land Acquisition and Involuntary Resettlement	PS5 aims to anticipate and avoid physical and economic displacement or, where avoidance is not possible, to minimise adverse social and economic impacts.	Not applicable since the Project site is located in a gazetted industrial zone devoid of any settlement and will not result in physical or economic displacement.

No.	Title	Key Requirement	Relevance to the Project
6	Biodiversity Conservation and Sustainable Management of Living Resource	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, and guides on the required level of assessment for Projects in each type of habitat. For modified habitats (1), impacts on biodiversity should be minimised and mitigation measures implemented appropriately. 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.	This PS is not applicable since the Project is located within modified habitats without any significant biodiversity value as described in detail in Chapter 6 of this report. However, reference has been made to this standard when designing the mitigation measures such as those for the appropriate management of invasive plant species.
7	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.	This PS does not apply since the Project Site located within a gazetted industrial zone devoid of any settlement. There are no people currently dependent on the Project Site and thus the Project will not result in either physical or economic displacement.
8	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 groves, 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 practices of communities embodying traditional lifestyles.	There is a *Mugumo* Tree at the Project Site that will be impacted. The process of removing it will need to comply with the requirements of this PS as well as to local cultural practices.

(1) This Performance Standard applies to those areas of modified habitat that include significant biodiversity value, as determined by the risks and impacts identification process.

2.7.3 IFC General Environmental, Health and Safety (EHS) Guidelines

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

General EHS Guidelines exist which contain information on cross-cutting environmental, health, and safety issues potentially applicable to all industry sectors; these are listed Box 2.1.

Box 2.1 IFC General EHS Guidelines

. 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 will be applied to the proposed Project.

2.7.4 Integrated Safeguard System of the African Development Bank

The Integrated Safeguards System (ISS) were adopted by the African Development Bank (AfDB) on the 7th December, 2013. The ISS outlines the AfDB's strategy to promote growth that is both socially inclusive and environmentally sustainable.

The AfDB requires that all borrowers/clients comply with the ISS requirements during all Project preparation and implementation processes. A brief description of each of the Operational Safeguards is included in Box 2.2.

Box 2.2 AfDB ISS Operational Safeguards

Operational Safeguard 1: Environmental and Social Assessment
This overarching safeguard governs the process of determining a project's environmental and social category and the resulting environmental and social assessment requirements.

Operational Safeguard 2: Involuntary Resettlement, Land Acquisition, Population Displacement and Compensation
This safeguard consolidates the policy commitments and requirements set out in the AfDB's policy on involuntary resettlement and incorporates a number of refinements designed to improve the operational effectiveness of those requirements. This is not applicable to the proposed Project.

Operational Safeguard 3: Biodiversity and Ecosystem Services
This safeguard aims to conserve biological diversity and promote the sustainable use of natural resources. It also translates the commitments in the AfDB's policy on integrated water resources management into operational requirements.

Operational Safeguard 4: Pollution Prevention and Control, Hazardous Materials and Resource Efficiency
This safeguard covers the range of key impacts of pollution, waste, and hazardous materials for which there are agreed international conventions, as well as comprehensive industry-specific and regional standards, including greenhouse gas accounting, that other multilateral development banks follow.

Operational Safeguard 5: Labour Conditions, Health and Safety
This safeguard establishes the Bank's requirements for its borrowers or clients concerning workers' conditions, rights and protection from abuse or exploitation. It also ensures greater harmonisation with most other multilateral development banks.

2.7.5 Parameter Specific International Guidelines

2.7.5.1 IFC EHS Guidelines – 1.1 Air Emissions and Ambient Air Quality

The IFC recommend that the air quality guidelines as set out by the World Health Organisation (WHO) be utilised in such an assessment. The WHO standards are divided into a number of stages, which have interim targets and a final guideline target. The WHO guidelines are recognised to be particularly conservative, as they make no consideration of the economic burden of achieving the stipulated guidelines. The WHO final guideline target is aspirational, and as such, this target should be progressively worked towards. In the case of the proposed Project, progression towards the achievement of the final guideline target may be assisted by regulatory changes to the quality of fuel used for construction and project-owned vehicles (for example, low sulphur fuels) and the regular maintenance and potential mandatory testing of those vehicle emissions.

On the basis of the above, Table 2.2 sets out the Kenyan Air Quality Emission Standards for industrial areas (as defined in *Section2.4.7*), which will be used for this assessment, given the Project location and low risk of air quality impacts as a result of Project activities.

2.7.5.2 IFC EHS Guidelines – 1.3 Wastewater and Ambient Water Quality

IFC EHS Guideline 1.3 specifies that discharges should not result in contaminant concentrations in excess of local ambient water quality criteria or, in the absence of local criteria, other sources of ambient water quality. Receiving water use and assimilative capacity, taking other sources of discharges to the receiving water into consideration, should also influence the acceptable pollution loadings and effluent discharge quality.

As Kenya has water quality criteria / standards for effluent discharge into the environment (refer to *Section2.4.4*), these will be used in this assessment.

2.7.5.3 IFC EHS Guidelines – 1.4 Water Conservation

Mechanisms included in the water conservation guidelines include –

- The setting of targets for water use, and monitoring of water flows against these targets;
- Water reuse where possible; and
- Reducing leaks and making more efficient use of water within the water reticulation system.

This will be achieved through the reuse of water in the cooling systems.

2.7.5.4 IFC EHS Guidelines – 1.7 Noise

The IFCs EHS Guidelines – *General EHS Guidelines: Environmental Noise Management 1.7 Noise* (IFC 1.7 Noise) is an internationally recognised guideline document containing information for the assessment and management of noise.

Table 2.6 presents the IFC noise guidelines that should not be exceeded at the nearest Noise Sensitive receptor (NSR) locations offsite. In addition to the absolute values provided in Table 2.1, the IFC also requires that noise increase above existing (background) levels should not exceed 3 dB.

Table 2.6 IFC Noise Level Guidelines

Receptor	**One Hour L_{Aeq} (dB(A))**	
	Daytime (07:00 – 22:00)	**Night (22:00 – 07:00)**
Residential; institutional; educational	55	45
Industrial; commercial	70	70

LAeq = A-weighted equivalent sound levels over a measurement period, dB(A) = A-weighted decibel

IFC Guidelines are designed to apply to noise emissions from facilities and stationary noise sources such as factories. The value of 70 dB(A) at the property boundary differs to the Kenyan standard (Table 2.1); hence the Kenyan noise standard of 75 dB(A) and 65 dB(A) for day and night time at the property boundary will apply to this Project.

2.7.6 Institutional Framework

The overall authority for implementation of the environmental and social mitigation measures and management plans will be the Project Proponent's Environmental and Social Governance (ESG) Director who will have an oversight of the ESMS implementation on a day-to-day basis, including E&S Manager activities. The Project Proponent's Managing Director will be ultimately responsible in ensuring that the Project team discharge their respective E&S duties.

A summary of other organisations that are relevant to the proposed TCSF Project are provided in Table 2.7 and explained in more details in Chapter 10 of this report.

Table 2.7 Institutional Framework

Organization	Responsibilities
National Environmental Management Authority (NEMA)	▪ General supervision and, co-ordination of all matters relating to the environment. NEMA is the principal instrument in Government in the implementation of all policies relating to the environment. ▪ NEMA is also responsible for monitoring compliance with all the environmental regulations. ▪ NEMA annual audit report required to be submitted.
Kenya Civil aviation Authority (KCAA)	▪ Regulation and oversight of Aviation Safety & Security; regulation and issuing height approval permits
Tatu Connect	▪ Undertaking full Owners Engineer (OE) package including procurement and management of EPC Contractors.
Tatu City DCC	▪ This is the Tatu City established entity responsible for the review and approval of the plans for all developments within Tatu City, before relevant approvals from other third parties is sought. It also monitors the implementation of all projects within Tatu City. In particular, the Project's designs/ plans will be approved by the Tatu City DCC.
Department of Occupational Health and Safety (DOSH)	▪ Monitor the implementation of health and safety plans for construction and operation workers and members of public coming into contact with construction activities. ▪ Annual Health and Safety and Fire Inspection audits are required to be submitted to DOSH.
County Government	▪ Monitor developments within the Kiambu County. ▪ Review master plans for compatibility with the approved zoning.
Ministry of Health	▪ Surveillance of public health with respect to workers and affected communities, especially in regard to HIV/AIDS and other communicable diseases. ▪ Identify suitable linkages between the Project and health facilities including emergency access.
Lands, Housing and Urban Development/National Land Commission	▪ Facilitate land acquisition. ▪ Monitor compliance with the approved land zone requirements.

3. METHODOLOGY AND APPROACH

3.1 ESIA Objectives

The objectives of the ESIA are to:

- Identify all potentially significant adverse environmental and social impacts of the Project and recommend measures for mitigation.
- Gather baseline data to inform the assessment of impacts and to monitor changes to the environment as a result of the Project as well as evaluate the success of the mitigation measures implemented.
- Recommend measures to be used to avoid or reduce the anticipated negative impacts and enhance the positive impacts.
- Prepare an ESIA Project Report compliant to EMCA and the Environmental (Impact Assessment and Audit) Regulations of 2003 (and the Amendments of 2016 and 2019), detailing findings and recommendations for review by NEMA.

3.2 Methodology

3.2.1 Screening

The proposed Project was screened to determine the need to undertake an ESIA based on:

- Project characteristics;
- The Second Schedule of EMCA (as amended in the Environmental (Impact Assessment and Audit) Regulations amendments of 2016, which lists the projects that must undergo an EIA; and
- International Finance Performance Standards on Environmental and Social Sustainability, 2012.

ERM carried out a reconnaissance site visit on 16th April 2020. The purpose of the site visit was to familiarise the Project Team with the Study Area and to collect primary environmental and social baseline data to inform the required level of assessment. A review of the environmental approvals for the study area such as the NEMA approval of the Strategic Environmental Assessment (SEA) for the Tatu City Structure Master Plan issued on 6th September 2011 (NEMA/SEA/5/2/11), the EIA for the precinct 3BA, dated 14th August 2015 (NEMA/EIA/PSL/2158), and the variation of this EIA, dated 28th July 2017 (NEMA/EIA/VC/636), were all reviewed as part of this screening process.

Based on the above criteria, it was concluded that an ESIA resulting in the preparation of an ESIA Project Report would be required for the proposed Project due to the following aspects:

- Legal Notices no 149 of the National Environment (Impact Assessment and Audit) (Amendment) Regulations of 2016 and no 31 National Environment (Impact Assessment and Audit) (Amendment) Regulations of 2019 classifies the proposed Project (specifically, agriculture and related activities, including medium size agricultural and livestock produce storage facilities, and, go-downs for storage and warehouses) as Medium Risk which can be approved through the preparation and submission of ESIA Project Reports(5);

(5) As per the 2016 and 2019 amendments of the National Environment (Impact Assessment and Audit) Regulations, Projects are classified as Low, Medium and High Risk based on their environmental and social risks. Low and Medium Risk projects

- Legal Notice no 32 of the National Environment (Impact Assessment and Audit) (Amendment) Regulations of 2019 which states that every proponent undertaking a project specified in the Second Schedule of the Act as being a low risk project of a medium risk project, shall submit to the Authority a Summary Project Report of the likely environmental effects of the project;

- The fact that the proposed Project is located within an approved mixed use Special Economic Zone (SEZ) – specifically, Tatu City Industrial Park (TIP), thus, fits within the planning of the Study Area;

- The fact that a Strategic Environmental Assessment (SEA) was conducted for the Tatu City SEZ in which the proposed Project Site is located, and approved by NEMA;

- The fact that an Environmental Impact Assessment was conducted for the precinct 3BA of the Tatu Industrial Park (TIP) in which the proposed Project is located, and approved by NEMA, and

- The nature and extent of the potential impacts of the Project (all the associated facilities such as electricity supply, piped water supply, sewerage management and solid waste management are already catered for in the approved Tatu City Master Plan and the management of Tatu City will foresee their development and operation).

3.2.2 Baseline Data Collection

In order to understand the existing baseline environmental and social conditions in the Study Area, a variety of data collection methods were used. These are described below:

3.2.2.1 Remote Sensing and GIS Analysis

Remote sensing was undertaken and ground-truthed in the field by the consultants at the time of the site visit. Remote sensing was based on available satellite imagery of the Project Site.

3.2.2.2 Document Review

A literature review was undertaken based on the findings of the reconnaissance process, which involved reviewing legislation, policies, the County Integrated Development Plan, Tatu City Master Plan, and previous studies carried out in the area to determine the baseline conditions and establish the legal, institutional and biophysical/socio-economic environmental setting of the Project area.

The desk-based study also included the development of fieldwork tools, fieldwork schedules as well as the approach to stakeholder engagement as outlined in the Stakeholder Engagement Plan (**Appendix B** of this Project Report).

3.2.2.3 Site Visits

A site investigation was undertaken on Thursday 16th April 2020 during which detailed environmental and social baseline data was collected and preliminary stakeholder engagement was undertaken. Data was collected through:

- Sharing the Project's Background Information Document (BID, and presented as **Appendix D**) to identified formal stakeholders and requesting them to share their views/ comments on the proposed Project;

maybe approved through the submission of ESIA Project Reports; however, these amendments specify that High Risk projects shall require submission of an ESIA Study Report.

- Key Informant Interviews (KII) especially with the technocrats of the relevant institutions;
- Focus Group Discussions (FGD) with the Area Chief and village elders; and
- Site walkovers.

Photography and Global Positioning Systems (GPS) were used to record the salient features and baseline conditions at the Project sites and surroundings environs.

3.2.3 Impact Assessment Methodology

3.2.3.1 Impact Assessment Process

The purpose of impact assessment is to identify and evaluate the significance of potential impacts on identified receptors and resources according to defined assessment criteria and to develop and describe mitigation measures that will be taken to avoid or minimise any potential adverse effects and to enhance potential benefits.

The impacts of the proposed Project were identified based on the findings of stakeholder consultation, the existing baseline conditions, the proposed Project activities and professional knowledge of the consultants. Impacts are first distinguished as either positive or negative (*Chapter 9* of this Project Report). The cross-sectoral issues and aspects are: health; safety; air quality, especially dust; waste management; social aspects particularly labour recruitment and management; infrastructure, and utilities.

3.2.3.2 Definition of Key Terminology

- **Project** - The features and activities that are a necessary part of the Project Developer's development plans without which the Project cannot proceed. The Project is also the collection of features and activities for which authorisation is being sought.
- **Project Site** - The (future) primary operational area for the Project activities.
- **Project Footprint** - The area that may reasonably be expected to be directly affected by Project activities, across all phases. The Project Footprint includes land used on a temporary basis such as construction lay down areas, materials yards, borrow pits or construction haul roads, as well as disturbed areas in transport corridors, both public and private.
- **Area of Influence:** The area where impacts could reasonably be expected.
- **Project Area:** Also referred to as the Study Area is the area that needs to be studied in order to adequately understand and describe the baseline likely to be affected by the Project. The Project Area encompasses the Project Footprint, Project Site and the Area of Influence.

3.2.3.3 Impact Types and Definitions

An impact is any change to a resource or receptor brought about by the presence of a Project component or by the execution of a Project related activity. The evaluation of baseline data provides crucial information for the process of evaluating and describing how the Project could affect the bio-physical and socio-economic environment.

Impacts are described according to their nature or type, as summarised in *Table 3.1*.

Table 3.1 Impact Nature and Type

Nature or Type	Definition
Positive	An impact that is considered to represent an improvement on the baseline or introduces a positive change.
Negative	An impact that is considered to represent an adverse change from the baseline or introduces a new undesirable factor.
Direct impact	An impact that results from a direct interaction between a planned project activity and the receiving environment/receptors (e.g. between occupation of a site and the pre-existing habitats or between an effluent discharge and receiving water quality).
Indirect impact	An impact that results from other activities that are encouraged to happen as a consequence of the Project (e.g. in-migration for employment placing a demand on resources).
Induced impact	An impact that results from other activities (which are not part of the Project) that happen as a consequence of the Project (e.g., influx of camp followers resulting from the importation of a large Project workforce).
Cumulative impact	An impact that acts together with other impacts (including those from concurrent or planned future third-party activities) to affect the same resources and/or receptors as the Project.

3.2.3.4 Assessing Significance

Impacts are described in terms of 'significance'. Significance is a function of the **magnitude** of the impact and the **sensitivity/vulnerability/importance of resource/receptor**.

Determining Impact Magnitude

Impact magnitude (sometimes termed severity) is a function of the **type, extent, duration, scale** and **frequency** of the impact. These characteristics apply to both planned and unplanned events/ impacts and are briefly described in *Table 3.2*.

An additional characteristic that pertains **only to unplanned events** is **likelihood**. The likelihood of an unplanned event occurring is designated using a qualitative scale, as described in *Table 3.3*.

Table 3.2 Impact Characteristics Terminology

Characteristic	Definition	Designations
Type	A descriptor indicating the relationship of the impact to the Project (in terms of cause and effect) as explained in *Table 3.1*.	Direct Indirect Induced
Extent	The "reach" of the impact (e.g., confined to a small area around the Project Footprint, projected for several kilometres, etc).	**Local** - impacts that affect an area in a radius of 20km around the development site. **Regional** - impacts that affect regionally important environmental resources or are experienced at a regional scale as determined by administrative boundaries, habitat type/ecosystem. **International** - impacts that cross national borders, affect nationally important environmental resources or affect an area that is nationally important/or have macro-economic consequences.

Characteristic	Definition	Designations
Duration	The time period over which a resource / receptor is affected.	**Temporary** - impacts are predicted to be of short duration and intermittent/occasional. **Short-term** - impacts that are predicted to last only for the duration of the construction period. **Long-term** - impacts that will continue for the life of the Project but ceases when the Project stops operating. **Permanent** - impacts that cause a permanent change in the affected receptor or resource (e.g. removal or destruction of ecological habitat) that endures substantially beyond the Project lifetime.
Scale	The size of the impact (e.g., the size of the area damaged or impacted, the fraction of a resource that is lost or affected, etc)	[no fixed designations; intended to be a numerical value or a qualitative description of "intensity"]
Frequency	A measure of the constancy or periodicity of the impact.	[no fixed designations; intended to be a numerical value or a qualitative description]

Table 3.3 Definition for Likelihood Designations

Likelihood	Definition
Unlikely	The event is unlikely but may occur at some time during normal operating conditions.
Possible	The event is likely to occur at some time during normal operating conditions.
Likely	The event will occur during normal operating conditions (i.e., it is essentially inevitable).

The overall magnitude of an impact is a combination of the above characteristics. The universal magnitude designations are:

- Negligible;
- Small;
- Medium; and
- Large.

Determining sensitivity/vulnerability/importance of resource/receptor

There are a range of factors to be considered when defining the sensitivity/vulnerability/importance of the resource/receptor, which may be physical, biological, cultural or human. Other factors may also be considered when characterising sensitivity/vulnerability/importance, such as legal protection, government policy, stakeholder views and economic value.

As for the case of magnitude, the sensitivity/vulnerability/importance designations themselves are universally consistent, but the definitions for these designations vary on a resource/receptor basis. The sensitivity/vulnerability/importance designations used herein for all resources/receptors are:

- Low;
- Medium; and

- High.

Table 3.4 presents an illustrative example of the sensitivity/vulnerability/importance of the resource/receptor.

Table 3.4 Illustrative Example of Sensitivity/Vulnerability/Importance of the Resource/Receptor

Designation	Receiving environment	
	Biophysical environment	**Socio-economic environment**
Low	The impact affects the environment in such a way that natural functions and processes are not affected.	People/communities are able to adapt with relative ease and maintain pre-impact livelihoods.
Medium	Where the affected environment is altered but natural functions and processes continue, albeit in a modified way.	People/communities are able to adapt with some difficulty and maintain pre-impact livelihoods but only with a degree of support.
High	Where natural functions or processes are altered to the extent that they will temporarily or permanently cease.	Affected people/communities will not be able to adapt to changes or continue to maintain-pre impact livelihoods.

Determining Impact Significance

As earlier stated above, Impact Significance is a function of the magnitude of the impact and the sensitivity/vulnerability/importance of resource/receptor. As presented in

*Table 3.*5 below, the impact significance can be Negligible, Minor, Moderate or Major.

Table 3.5 Impact Significance

SIGNIFICANCE				
		Sensitivity/Vulnerability/Importance of Resource/Receptor		
		Low	Medium	High
MAGNITUDE	Negligible	Negligible	Negligible	Negligible
	Small	Negligible	Minor	Moderate
	Medium	Minor	Moderate	Major
	High	Moderate	Major	Major

Table 3.6 below presents a brief description of the different categories of Impact Significance.

Table 3.6 Significance Definitions

Significance definitions	
Negligible significance	An impact of negligible significance (or an insignificant impact) is where a resource or receptor (including people) will not be affected in any way by a particular activity, or the predicted effect is deemed to be 'negligible' or 'imperceptible' or is indistinguishable from natural background variations.
Minor significance	An impact of minor significance is one where an effect will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value.
Moderate significance	An impact of moderate significance is one within accepted limits and standards. The emphasis for moderate impacts is on demonstrating that the impact has been reduced to

	a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that 'moderate' impacts have to be reduced to 'minor' impacts, but that moderate impacts are being managed effectively and efficiently.
Major significance	An impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. A goal of the ESIA process is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long term or extend over a large area. However, for some aspects, there may be major residual impacts after all practicable mitigation options have been exhausted (i.e. ALARP has been applied). An example might be the visual impact of a development. It is then the function of regulators and stakeholders to weigh such negative factors against the positive factors such as employment, in coming to a decision on the Project.

Note: It is important to note that the positive impacts are not rated, merely stated. It is considered sufficient for the purpose of the Impact Assessment to indicate that the Project is expected to result in a positive impact, without characterising the exact degree of positive change likely to occur. However, positive impacts are presented quantitatively where possible.

3.2.3.5 Identification of Mitigation and Enhancement Measures

For activities with significant impacts, the ESIA process is required to identify, in collaboration with the Project Developer/Proponent, suitable and practical mitigation measures that can be implemented. Mitigation that can be incorporated into the Project design, in order to avoid or reduce the negative impacts or enhance the positive impacts, have been defined and require final agreement with the Project Proponent as these are likely to form the basis for any conditions of approval by NEMA. The implementation of the mitigation is ensured through compliance with the Environmental and Social Management and Monitoring Plan (ESMMP).

3.2.3.6 Residual Impact Evaluation

After first assigning significance in the absence of mitigation, each impact is re-evaluated assuming the appropriate mitigation measure(s) is/are effectively applied, and this results in a significance rating for the residual impact.

3.3 Reporting

As a result of the ESIA process, a comprehensive ESIA Project Report (this document) was developed for submission to NEMA for review and consideration for approval.

3.4 Assumptions and Limitations

ESIA is a process that aims to identify and anticipate possible impacts based on past and present baseline information and details of the proposed Project. As the ESIA deals with the future, there is, inevitably, always some uncertainty about what will happen.

Impact predictions have been made based on field surveys and with the best data, methods and scientific knowledge available at this time. However, some uncertainties could not be entirely resolved. Where significant uncertainty remains in the impact assessment, this is acknowledged, and the level of uncertainty is provided.

In line with best practice, this ESIA Project Report has adopted a precautionary approach to the identification and assessment of impacts. Where it has not been possible to make direct predictions of the likely level of impact, limits on the maximum likely impact have been reported and the design and implementation of the Project (including the use of appropriate mitigation measures) will ensure

that these are not exceeded. Where the magnitude of impacts cannot be predicted with certainty, the team has used professional experience and available scientific research from similar projects worldwide to judge whether a significant impact is likely to occur or not. Throughout the assessment, this conservative approach has been adopted to the allocation of significance.

4. PROJECT DESCRIPTION

4.1 Introduction

This Chapter provides an overview of the Project location, the design and the activities that will be undertaken during the different Project phases including construction, operation and maintenance (O&M) and decommissioning.

The information contained in this chapter is sourced from:

- The Project Concept Design Report (Amana, 2020);
- Tatu City Studies (SEA, 2011; TIP EIA, 2015), engineering drawings and meetings conducted with the various Tatu City entities for the management responsible for these aspects; and
- The experience of the CSKL development team in constructing and operating similar facilities globally.

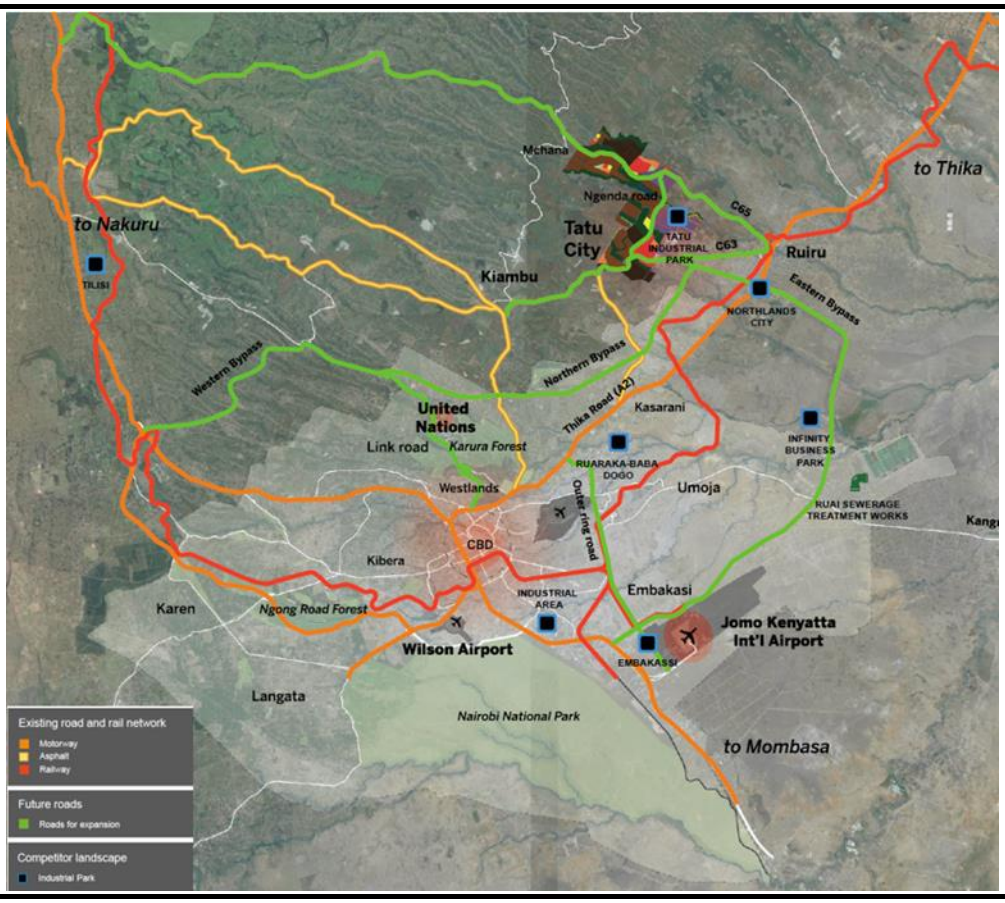
4.2 Project Location and Regional Setting

Tatu City lies approximately 17 km North-East from Nairobi's Central Business District (CBD) in Kiambu County, directly west of and bordering the outskirts of Ruiru Town, and 6.5 km to the east of Kiambu Town. It is accessible via the following road linkages:

- The A2 (Thika Road) via the C63 Ruiru-Kiambu road;
- The C65 Road which is located 1.5 km north of the City; and
- Kiambu Road (C63) which connects to the western part of the site with Kiambu Nairobi.

Figure 4.1 shows the Project location in relation to these roads and Nairobi CBD (also refer to Section 1.1).

Figure 4.1 Location of the Project Site

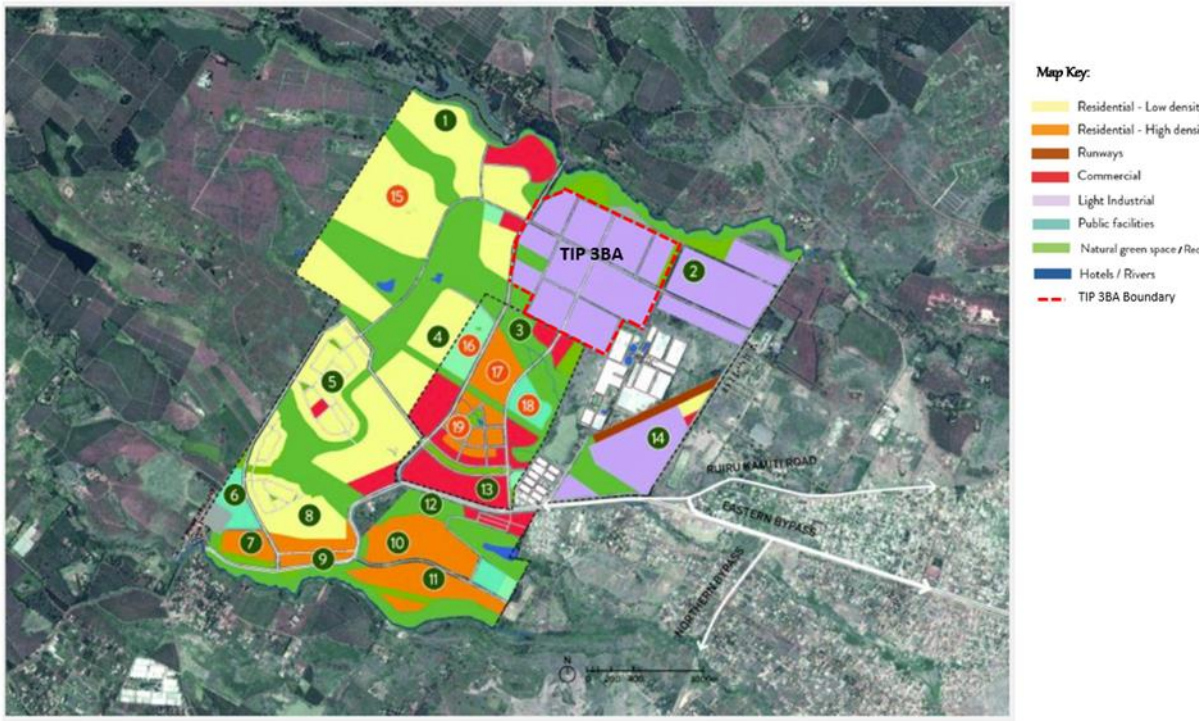


Tatu City is a purpose-built mixed-use development located on 5,000 acres. The planning of the City has been guided by a Strategic Environmental Assessment (SEA), carried out in 2010-11 and approved by NEMA in 2011. Subsequently, the planning of the TIP is guided by the Environmental Impact Assessment for precinct 3BA which was conducted and approved by NEMA in 2015. Generally, Tatu City Comprises planned:

- Residential developments;
- Hospitals and healthcare facilities; and
- The Tatu Industrial Park (TIP).

An overview of the Tatu City Masterplan is presented in Figure 4.2. The Project is located in TIP Precinct 3BA (bordered in red).

Figure 4.2 Overview of Tatu City



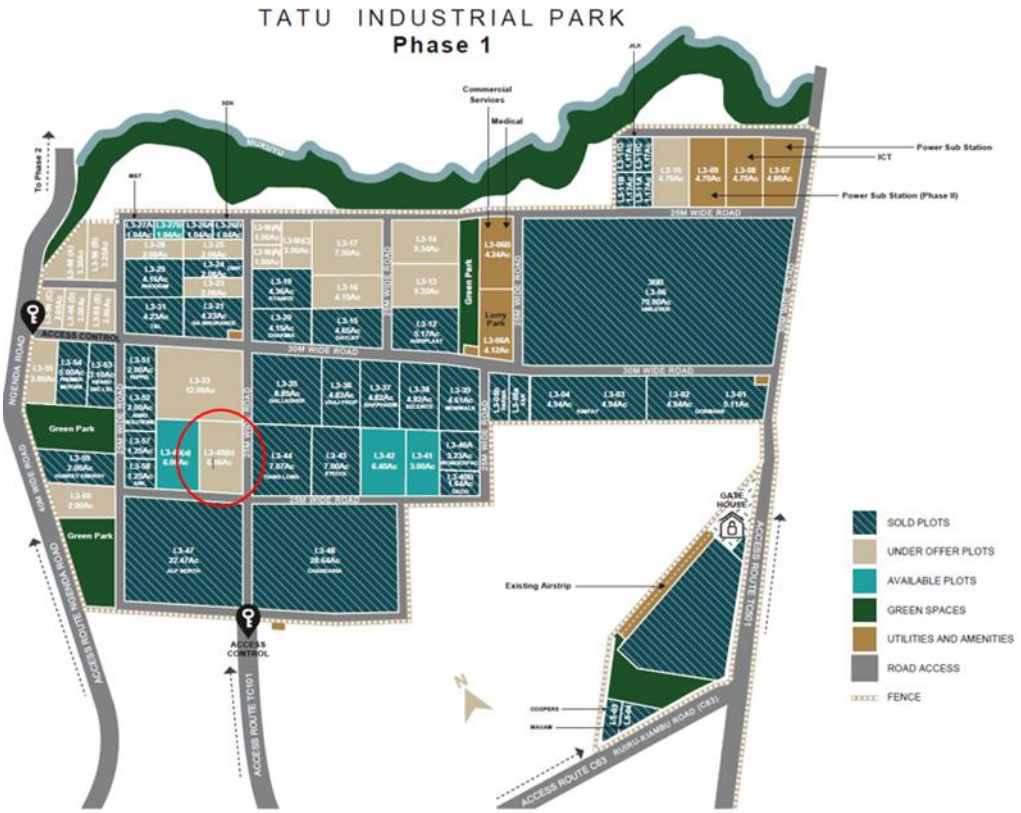
TIP is built on land that was previously a coffee estate. Approved by NEMA in 2015, it has undergone extensive construction works and is now a fully serviced industrial area with over 80% of plots sold.

The infrastructure built includes:

- 33 MVA total power supply;
- 10,000 m^3 water storage and mains supply to each plot;
- Wide access roads for servicing heavy vehicles (30 T weight capacity);
- Wastewater trunks connected; and
- Green spaces for TIP customers to access.

CSKL are in the process of acquiring a 6-acre plot (plot L3-45b), the coordinates are (centre point): Latitude - 1° 8'8.67"S, Longitude - 36°54'41.89"E. Figure 4.3 presents the CSKL plot (circled in red) in the context of the wider TIP while the developments already implemented around the Project Site is presented in Chapter 7 (Socio-economic Baseline).

Figure 4.3 Location of CSKL's Plot in the TIP (circled in red)



4.3 Project Overview and Layout

The Project involves the construction and operation of up to 12,000 m^2 cold storage warehouse, including end to end logistics for customers. As such, the main Project components comprise:

- The collection, storage and distribution of the following products:
  - Agricultural (fruit and vegetables);
  - Meat, poultry and seafood;
  - Food products for supermarkets, quick service restaurants and hotels;
  - Pharmaceuticals and healthcare; and
  - Food manufacturing.
- Capacity for approximately 15,000 - 20,000 pallets of storage.
- Utility infrastructure including:
  - an onsite wastewater treatment plant for treatment (WWTP) and recycling of water used in the refrigeration system and for water used in light food processing (washing and packaging of fruits and vegetables);
  - An integrated power system comprising roof-top solar Photovoltaic (PV) system and a backup generator in case of grid outages (to service 2-3 MW power demand);
  - Supporting facilities including office space, ablution facilities, and a guardhouse.
- 25-30 cross-docking bays for loading and un-loading of goods.
- End-to-end customer logistics serviced by 40 refrigerated vehicles.

Figure 4.4 provides conceptual layout of the Project facility including the superstructure and docking bays.

Figure 4.4 Conceptual Layout of the proposed Project

4.4 Key Project Components

This section outlines key Project components outside of the warehouse structure itself which is covered under construction activities.

4.4.1 Superstructure Components

Table 4.1 outlines the main structural components of the superstructure.

Table 4.1 Superstructure Structural Components

Component	Description
Below ground infrastructure	Utility infrastructure including mains water, sewage drainage and surface water/stormwater drainage. A wastewater treatment plant will also be installed below ground (see Section 4.4.2 on Utilities Infrastructure section below).
Foundations and ground floor slab	Suitable subgrade will be installed to support the carry loads imposed by the structure outlined in the detailed design. The ground floor slab will be reinforced concrete able to withstand a uniformly distributed loading of 50kN/m^2 and the racking load.
Steel frame	The steel frame structure will be constructed to a height of 24 metres and allow for 9 m spacing between columns for bay spacing. The steel framework will be designed to accommodate the building loads specified in the detailed design.
Warehouse roof cladding	Roof cladding will be steel sheeting supported by galvanised steel/purlin system capable of supporting the roof-top solar installation.
Warehouse external walls	Concrete pre-cast panels at the ground floor level to a height of 4.5 m. the remaining warehouse walls shall consist of vertically laid proprietary composite polyisocyanurate (PIR) insulated panels.
Warehouse internal walls	Partition walls for separating zoning for operational purposes in conformance with the detailed design.

Dock system	The building is to accommodate dock levellers, dock shelters (collapsible / inflatable) and dock doors & required steel structure & cladding.

4.4.2 Utilities Infrastructure

Utility infrastructure required includes grid-connected power, water supply and sewage treatment which are all provided by Tatu City to its customers. The Project will have its own wastewater treatment plant and power solutions in addition to these services.

4.4.2.1 Power

Power is provided by Tatu City Power Company who have installed a new 66/11 kV substation in the northeast corner of TIP. The substation houses three 45 MVA transformers on three separate circuits to ensure reliable power supply to customers.

In addition to the grid supplied power, the Project will install:

- Roof-top solar PV sized to the maximum supporting capacity and size of the roof space (approximately 1 MW);
- A back-up generator sized to meet the total power demand of the facility. The grid has been stable at Tatu City over the last seven years of available data but given that power is critical for maintaining a temperature-controlled environment a back-up generator is required.

4.4.2.2 Water Supply

Water is provided by the Tatu City Water and Sanitation Company (TWC) which receives its bulk water supply from the Ruiru-Juja Water and Sewerage Company (RUJWASCo). Raw water is sourced from the Riuru River and treated at the Jacaranda water treatment works where it is then fed to TWC's concrete storage tanks for distribution to Tatu City's customers. Tatu City currently have a capacity of 10,000 m^3 storage but a new 600 m well is being constructed with capability of providing 150 m^3 per hour, which will be operational by November 2020.

4.4.3 Wastewater Treatment

TWC has trunk sewer lines comprising Polyvinyl Chloride (PVC) pipes laid along the City's service corridors connected to all plots. These trunk lines discharge sewage to external mains trunks which connect to the Ruai Treatment Plant, a project that Tatu City has worked closely on with Athi Water Services Board and the World Bank over the last five years. Located 8 km away from Tatu City, this Project is part of the wider World Bank Group Nairobi Metropolitan Services Improvement Project to strengthen urban services and infrastructure in the Nairobi metropolitan area.

The Project will also have an on-site Wastewater Treatment Plant (WWTP) installed below the ground floor of the facility. This will treat and recycle water used in the refrigeration technology and also from light food processing undertaken on site, for example packaging of fruit and vegetables. The WWTP will discharge effluent treated to national discharge standards into the sewage trunk lines. The water quality is monitored twice daily through Tatu Connect.

4.4.4 Cooling System

The choice of cooling technology will be finalised during the detailed design and procurement of the EPC contractor. In all cases, the system will be based on a natural refrigerant gas from one of: Ammonia, Carbon Dioxide, Glycol or a combination of these. An overview of the choice of refrigerants is presented in Chapter 5 (Analysis of Alternatives). The two options considered most likely at this juncture in the design process are:

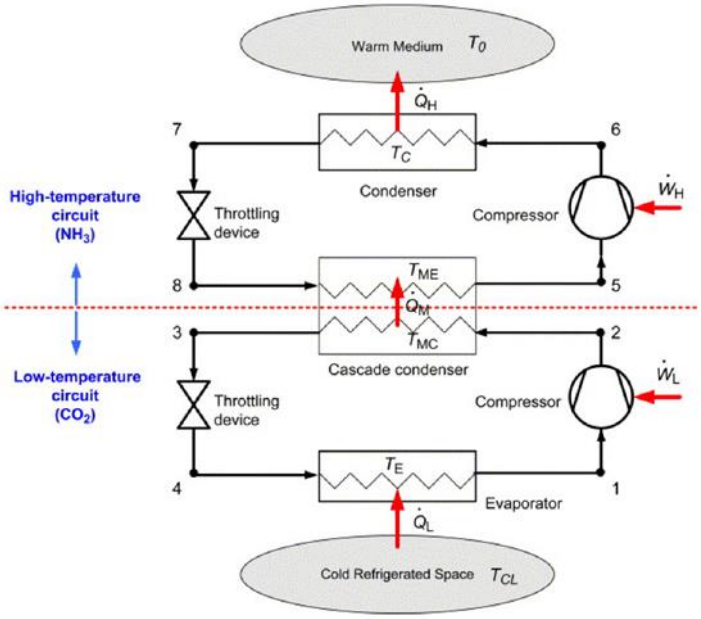
- An entirely ammonia-based chiller system;

- A cascade system using Ammonia (R717) for the first stage and Carbon Dioxide (R744) for the second stage.

Each of these systems are considered acceptable from an environmental and social perspective, with each offering different technical and commercial benefits. All natural refrigerants have zero Ozone Depletion Potential (ODP) and zero Global Warming Potential (GWP) in the case of Ammonia and a GWP of 1 in the case of Carbon Dioxide. Ammonia however is both toxic and flammable and therefore presents additional health and safety risks arising from leaks or system malfunctions. However, these are managed successfully globally as assessed in detail in Chapter 9 and included in the ESMMP in Chapter 10.

Figure 4.5 presents an overview of how a cascade system functions.

Figure 4.5 Overview of Cascade Refrigeration System



4.4.5 Building Management System

A fully integrated PC based Building Management System (BMS) incorporating Direct Digital Control (DDC) Energy Management, Equipment Monitoring and control of building services installations shall be installed.

The Building Management System shall be fully integrated to provide the end-users with full control, monitoring and management functions, based on a common computer operating system and operating procedures.

The BMS shall interface with the master control system whereby if an alarm is triggered (fire alarm, leak) a full shutdown of plant will be implemented.

4.4.6 End-to-End Logistics

The Project will include end-to-end logistics to service its customer base comprising 30-40 refrigerated trucks ranging in size from 3 tonne to 20 tonne weight. The fleet will likely comprise of diesel trucks with a self-powered refrigeration unit attached to the trailer. CSKL will procure new trucks to ensure the most efficient and up to date technology is used. Examples of the type of trucks envisaged are presented in Figure 4.6.

The majority of trips are expected to service the Nairobi metropolitan area but there will also be long-haul trips to produce aggregators and customers located in areas throughout Kenya. At this stage it is impossible to determine the profile of trips since this is based on a CSKL customer base, which will become clearer closer to Project Commercial Operation Date (COD).

Figure 4.6 Examples of Refrigerated Trucks

5 tonne refrigerated truck

20 tonne refrigerated truck

4.5 Project Development Programme

The main Project development milestones are outlined in Table 4.2. The construction phase is expected to be up to 12 months with operations commencing in Q2/3 2021.

Table 4.2 Project Development Programme

Development Milestone	Timeline
Project Design and Construction Permits	Q1 2020 – Q3 2020
Procurement and Construction Phase	Q3 2020 – Q3 2021
Commercial Operations Date (COD)	Q2/3 2021

4.6 Project Preparation and Construction Phase Overview

4.6.1 Construction Phase Activities

Table 4.3 presents the activities that will take place during the Project preparation and construction phases of the Project. These are illustrated in Figure 4.7.

Table 4.3 Construction Phase Activities

Phase	Activity	Description
Project Preparation	Land Acquisition	Negotiation and completion of long-term leasehold with Tatu City for the project land.

	Technical Studies	Topographical, geotechnical and ESIA studies.
	Facility Design	Concept and detailed design of the facility to feed into the ESIA and for Tatu City design approval (through the DCC).
Construction Phase	Site Preparation	Site clearing and enabling works including cut and fill for plot levelling.
	Below ground works	Civil works associated with the installation of surface, stormwater, foul water and sewage drainage.
	Foundations and concrete slab	Installation of a concrete foundation with uniform distributed loading capacity of 50/kN/$m^{2.}$
	Warehouse superstructure	Construction of the warehouse superstructure including steel framework, roof cladding and external walls.
	Internal structures	Construction of internal refrigeration chambers, racking and supporting facilities.
	Electrical and Mechanical	Installation of refrigeration technology and power solution
	Finishing Works	Installation of windows, doors and finishing activities such as painting and landscaping.

Figure 4.7 Illustrative Images

Site Preparation

Civil Works

Superstructure

Internal components

Finishing

4.6.2 Land Acquisition

Tatu City, under the overall Master Plan development, has acquired the lands within the boundaries of the development under a long-term government lease. Under this provision, Tatu City has the right to sub-lease plots within this development to private developers under the approved activities for each precinct.

CSKL is in the process of acquiring plot L3-45b in TIP Phase 1, a 6-acre plot (2.4 ha), through a long-term leasehold agreement with Tatu City (88-year lease). Under this agreement, CSKL has the right to develop and operate the Project during this period subject to the approval of the designs by the Design Control Committee (DCC) in conformance with the Tatu City Architectural Guidelines.

4.6.3 Materials, Waste and Emissions

The materials required and waste streams associated with the construction of the Project are outlined in Table 4.4.

Table 4.4 Project Materials and Waste Streams

Item	Local/Imported	Description
Materials		
Fill	Local	A small amount of fill will be required to level the plot, taken from spoil stored from other plot construction in TIP.
Concrete (cement)	Local	Concrete foundation for the superstructure and docks. Concrete will be transported ready-mixed to site for pouring.
Steel	Local	For the framework of the warehouse superstructure.
Roof cladding	Local	Steel sheets for roof cladding capable of supporting the solar PV installation.
External wall	Local (if available)	External wall panelling typically in prefabricated modules.
Internal cooling chambers	Imported	Module panels made from polyurethane foam (PUR).
Internal racking system	Local/Imported	Steel framed racking system for storing pallets within the refrigerated chambers. Racking will be up to six pallets equivalent high.
Cooling System	Imported	Cooling system based on natural gas technology.
Power system	Imported	Solar PV based power solution with option of battery storage being considered. A back-up generator sized to facility demand will be necessary for grid outages.
Finishing items	Local	Paints, office furniture, landscaping materials.
Fuel	Local	Diesel, in small quantities for generators.
Waste and Emissions		
Vegetation	n/a	Grass and small shrubs from plot clearing.
Packaging	n/a	General construction packaging waste including pallets and plastics from construction materials and electrical and mechanical equipment.
General household type waste	n/a	From presence of construction workforce onsite.
Liquid waste	n/a	From temporary ablution facilities.
Hazardous waste	n/a	Paints/lubricants/solvents used for finishing.
Liquid waste	n/a	From ablution facilities, food processing and refrigeration cooling water. All the liquid waste will be managed as described in Section 4.4.3.
Oils and lubricants	n/a	Small quantities used in maintenance of vehicles and electrical and mechanical equipment.
Emissions	n/a	Emissions to air from the operation of diesel fuelled plant and generators including NO_x, CO_2, CO and PM/ dust from land clearing activities. These are expected to be short in duration and localised. There will also be short periods of dust generation associated with site preparation and civil works.

4.6.4 Utilities Demand during Construction

Demand for power and water during construction is expected to be low based on the construction activities outlined and the prefabricated nature of the infrastructure. These will be serviced as follows:

- Power demand associated primarily with handheld mechanical tools, will be serviced by small generators.
- Water demand, used for dust suppression, cleaning and drinking water for workers, will be provided by TWC through the mains system.
- Wastewater associated with temporary ablution facilities on site will be collected by a licensed liquid waste disposal company or discharged directly to the sewer system if feasible.

4.6.5 Construction Equipment

Table 4.5 outlines the type of equipment that will be present on site during the construction phase. It does not include vehicles and equipment used to transport materials to and from the site (e.g. concrete mixers and trailers).

Table 4.5 On-site Construction Plant

Type of Plant	Number
Bulldozer	1
Grader	1
Excavator	2
Crawler Crane	1
Trucks (20 tonne)	2

4.6.6 Construction Workforce and Accommodation

The construction workforce will vary at different times during construction phase but will have a peak on site presence of approximately 30 people during the superstructure construction. With the exception of construction oversight and complex electrical and mechanical work, most importantly the cooling system installation, the majority of positions will be filled through the local workforce. Tatu City, through their community programme, have trained in excess of 500 people in their Tatu City Training Centre including qualified plumbers, electricians and plant operators to service Tatu City's construction and O&M needs. CSKL, through its Local Content Policy, promotes the full use of local resources (supplies and workforce) where they are available.

The following workers are envisaged for the construction phase:

- 15-20 general labourers;
- 5-10 plant operators;
- 10 skilled workers including electricians, plumbers and cooling specialists;
- Construction oversight team of the main EPC Contractor; and
- 3 security guards for 24-hour shifted site supervision.

Since the majority of the workforce is drawn from the local labour pool, only expats, who will be few in number (if any), will require accommodation. In these instances, they will be accommodated in hotels or guesthouses meeting DFI requirements[6].

4.7 Operations and Maintenance Phase Overview

The operations phase is concerned with the movement and storing of goods within the warehouse. It is typically low impacting with the main environmental and social impacts associated with the energy demand, occupational health and safety and movement of vehicles as assessed in detail in Chapter 9.

4.7.1 Operations Phase Activities

Table 4.6 outlines the activities performed during this phase.

Table 4.6 Operation Phase Activities

Activity	Description
Packing	Un-packing of pallets received and packing of goods to deliver to clients.
Storage of Pallets	Storing of pallets in the cooling chambers and ripening rooms.
Food Processing	Light food processing including vegetables and fruits for packing for end-user.
Maintenance of Plant	General maintenance of the facility and cooling system and light maintenance of the truck fleet.
Docking Activities	Un-loading and loading of trucks at the docking bays.
Office Administration	Office based administration activities including accounts and customer administration.

4.7.2 Operations Workforce

A workforce of approximately 100-150 people is expected during the operations phase, roles outlined in Table 4.7. CSKL will ensure that both direct and indirect employees apply GIIP labour and working conditions aligned to IFC PS 2.

Table 4.7 Operations Workforce Profile

Employee	Estimated Number	Description
Management and based team	10	Facility manager and office team (HR, accounts, admin).
Warehouse team	25	Supervisors, maintenance, plant operators and warehouse general labourers.
Drivers	30	Drivers of trucks.
Outsourced workers*	70	Lumpers for unloading and loading of trucks.

* typically, lumpers are employed by third party operators

[6] As specified in the IFC/EBRD Guidance Note: Workers' Accommodation: Processes and Standards (2009). Available at: https://www.ebrd.com/downloads/about/sustainability/Workers_accomodation.pdf

4.7.3 Waste and Emissions from Operations

Table 4.8 outlines waste streams associated with the operations and maintenance of the Project. A waste sorting area is included in the facility design and it is likely that the Project will use the existing licensed waste disposal firm that services Tatu City.

Table 4.8 Waste Streams during Operations

Waste Type	Description
General household type waste	From office and workforce.
Packaging	Typically, plastics and carton from pallets received.
Food waste	Food waste associated with food processing activities.
Oils and lubricants	From vehicle and facility maintenance activities – small quantities expected.
Emissions to Air	NO_x, CO_2, CO and particulates from truck movements and use of the backup generator. Local emissions are expected to be small due to the expected infrequent use of the generator and truck cooling/ freezing units will plug into the mains during docking to prevent truck engines having to be maintained on idle to run the truck mounted cooling/freezing units.

Power, Water and Wastewater
Table 4.9outlines the demand for utilities during the operations phase.

Table 4.9 Utility Demand during Operations

Utility	Description
Power	Power demand for the facility will be approximately 2 MW serviced by a rooftop solar PV installation and grid supplied power by Tatu City. A backup diesel generator will be installed for use during power outages.
Water	Daily cooling water demand is 60 m^3. Water will also be required for staff, ablution facilities and food processing activities, in significantly smaller quantities than the cooling system demand.
Wastewater	Wastewater associated with cooling system (60% recycled, 30% discharged) and general facility demand.
Foul water	Foul water will be discharged directly to TIP's sewage system.

4.8 Decommissioning Phase Overview

It is expected that the warehouse superstructure will have a lifespan in excess of 50 years and demand for cold storage will only grow during this period in Kenya. As such, two options are considered for decommissioning:

- Components that have a shorter lifespan such as the cooling system and vehicles will be replaced and the facility will continue to function. It is likely that the cooling system, at least in part, will need to be replaced after 20 years and this provision is made in the design of the facility.
- On the basis that the facility is no longer required it will be dismantled and the site returned to its original state.

Should option 2 materialise then the decommissioning phase will be similar to the construction phase in terms of environmental and social impacts. The majority of the warehouse superstructure is made

of steel and recyclable components. The concrete foundations and other non-recyclable elements will be disposed of to landfill. Given that the lifespan is over 50 years, provisions will be made in the ESMP for a decommissioning plan to be developed one year prior to decommissioning.

5. ANALYSIS OF PROJECT ALTERNATIVES

5.1 Project Location Alternatives

CSKL, on the basis of market studies and proximity to the largest customer base in Kenya, selected to locate the first facility in the Nairobi environs. From an initial screening by the development team, three industrial areas were analysed:

- Tatu Industrial Park (TIP) – the preferred site and the subject of this ESIA Project Report;
- Tilisi Logistics Park (TLP) – a 400-acre mixed use development located approximately 30 km north-west of Nairobi's CBD; and
- Nairobi Gate Industrial Park (NGIP) – a 100-acre logistics and business park located along the Eastern Bypass, approximately 15 km east of Nairobi's CBD.

Figure 5.1 presents the location of each of the above industrial areas in relation to Nairobi and **Figure 5.2** that follows presents aerial views of the TLP and NGIP options. As can be seen in the figures, both TLP and NGIP are in very early stages of development, and whilst still viable for the project do not have the same level of infrastructure services (particularly access roads and utilities such are power) that are currently available at TIP. Of particular importance for the Project is the provision of reliable power. In this regard, TIP has its own dedicated 66/11KV transmission/distribution line with three circuits thereby reducing the possibility of power outages which in turn reduces the reliance on backup generators.

In terms of environmental and social considerations, all three sites have similar ground conditions, albeit at different stages of development. No significant environment and social sensitives are present at any of the developments and as such the location decision is primarily driven by technical and commercial considerations.

Figure 5.1 Project Location Alternatives

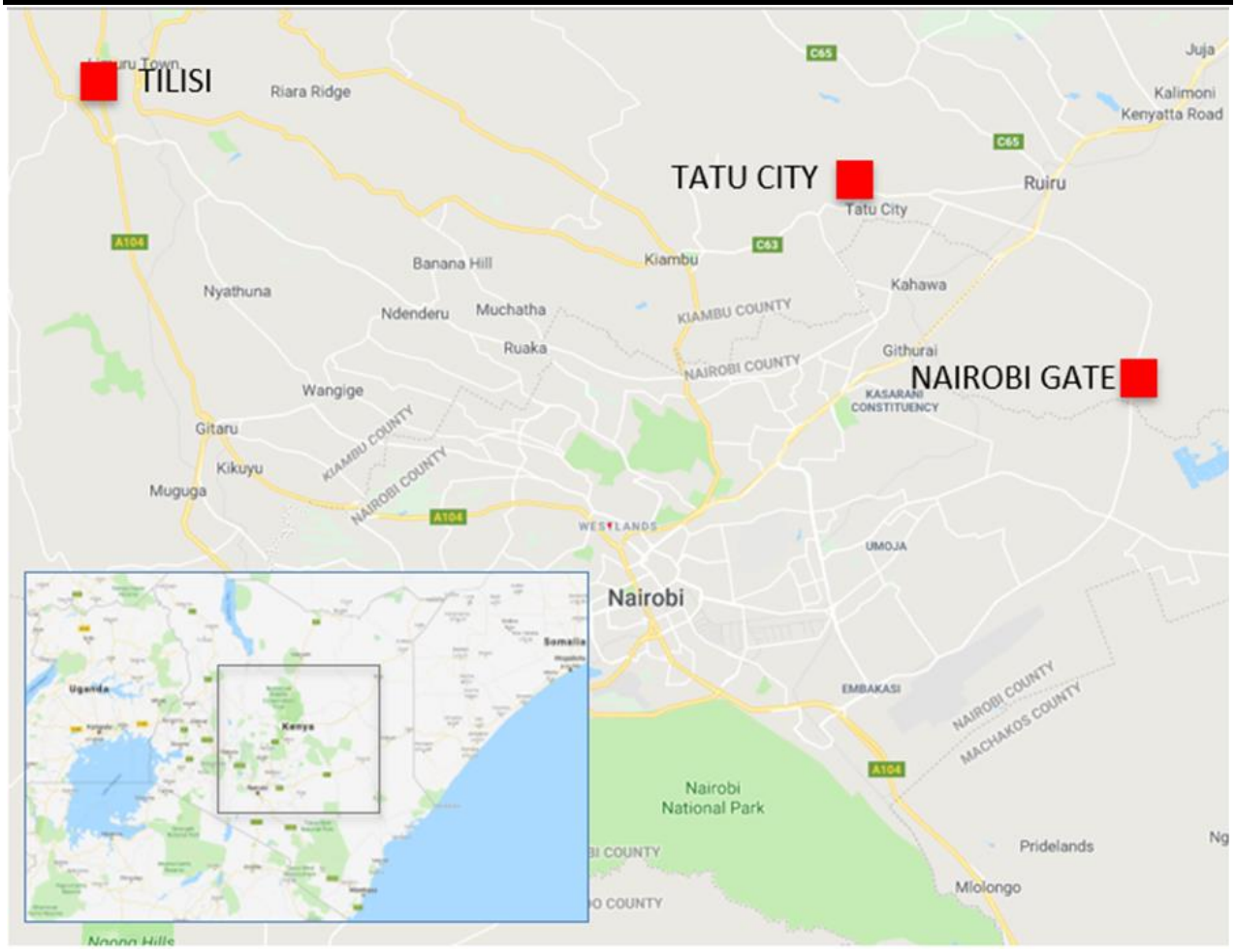


Figure 5.2 Aerial View of TLP and NGIP Alternative Project Locations

Nairobi Gate Industrial Park

Tilisi Logistics Park

5.2 Project Layout Alternatives

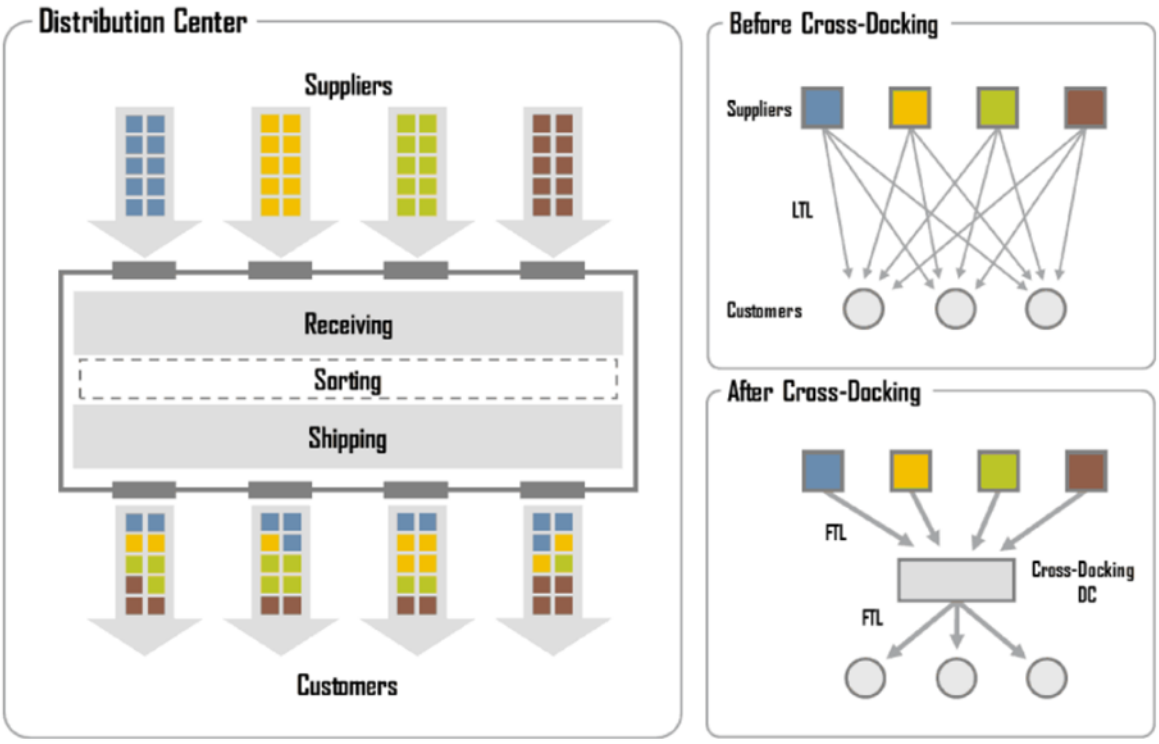
The layout of the facility is constrained by the land available at the outlined Project Site, the cost of land and the size of the warehouse. The 6-acre plot is sufficient to accommodate all Project components. There are two primary layouts for storage warehouses and associated logistics which are driven by the docking arrangement:

- Standard docking – bays on one side of the warehouse to receive and delivery goods to customers; and
- Cross-docking – bays on both sides of the warehouse to allow for efficient sorting and distribution.

Each option provides benefits and limitations from an operational perspective – standard docking allows for a larger facility size whilst the cross-docking allows for faster handling times and through-out of goods, considered essential for temperature-controlled items. The latter also allows for a smaller facility size without compromising (in significant terms) the volume of goods the facility can handle. The benefits of cross-docking are most easily communicated in Figure 5.3 and this is the preferred facility design.

With the exception of a Magumo tree, which has a sacred value for the Kikuya community, there are no other sensitive environmental or social resources present at the Project Site. Due to the central location of the tree on the plot it is impossible to avoid it in the design of the Project. Consultations with the Area Chief and Council of Elders have confirmed that this is not an active sacred tree, i.e. it is not used for cultural activities, and as such it can be removed subject to a ritual/cultural ceremony being performed (as assessed in detail in Chapter 9 of this Project Report). As such, the Project will proceed on this basis.

Figure 5.3 Benefits of Cross-docking



5.3 Technological Alternatives

5.3.1 Refrigeration Technologies

The choice of refrigeration technology is arguably the most important component of the Project since it has a large energy demand and needs to be reliable. In turn, it is a significant Project cost and, depending on the choice of refrigerant, a contributor of greenhouse gas (GHG) emissions. There are three main categories of refrigerants available on the market:

- Saturated chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs and HFCs);
- Unsaturated hydrofluorocarbons (U-HFCs); and
- Natural gases such as ammonia, carbon dioxide, propane and glycol.

Although now phased out under the Montreal Protocol (1987) and its subsequent Kigali Amendment (2016), saturated CFCs and HCFCs are still widely available. These refrigerants have both high ozone depletion potential (ODP) and global warming potential (GWP). Kenya, as signatory to these agreements, has made them illegal and therefore these refrigerants are not considered an option.

U-HFCs have emerged as a replacement of CFCs and HFCs in order to meet the requirements of these multilateral agreements and have low GWP and zero ODP. However, whilst these refrigerants solve this problem, they produce persistent wastes. Through the decomposition of U-HFCs they produce trifluoroacetic acid (TFA), a strong acid with toxicity to some organisms. There is also no known degradation mechanism for them (GIZ, 2015). As such, these refrigerants will also not be considered for the Project.

The choice of refrigerant technology will therefore be based on a natural gas. These gases share similar GWP profiles (0-20 over 100-year life) and zero ODP. The principal differences between them are around:

- Energy efficiency - carbon dioxide has lower efficiency in warmer climates;
- Human safety - ammonia, propane and glycol are both toxic and hazardous if leaks occur; and
- Cost – ammonia, as a direct supply cost, is more expensive; however, compared to other gases these costs may be offset in energy efficiency.

All of these gases are considered acceptable from an environmental and social perspective with the appropriate mitigation measures implemented. Whilst carbon dioxide presents the least risks when considering health and safety, it is a relatively new technology that has not been deployed at scale in sub-Saharan Africa (with the exception of South Africa). Therefore, parts availability and ongoing maintenance needs to be considered carefully as part of this decision.

In consideration of the above, the choice of refrigerant technology will be:

- A system based on one of the natural gases discussed above;
- A cascade system using a combination of ammonia and carbon dioxide.

The final decision will be made as part of the detailed design and procurement phase for the Project. This is assessed further in Chapter 9 (Impacts Chapter) of this report.

5.4 Power Supply Technology Alternatives

The power demand for the facility will be 2-3 MW and as previously stated needs to be reliable. As such, the following three power supply options have been assessed for the Project:

- Grid supply with a backup generator;
- Roof-top solar, grid supply and backup generator;
- Roof-top solar with battery storage, grid supply and backup generator.

In order to meet the requirements of the Green Building certification, the Project is required to include renewable energy supply. This decision, given the energy tariffs in Kenya, also makes sense commercially – i.e. it will reduce the operating costs of the facility. The use of roof-top solar will reduce the GHG emissions associated with the facility's power demand, the level of which is determined by the sizing of the solar installation which is largely dependent on available roof space. However, in all cases solar technology directly supplied by the facility will not be sufficient to power the entire Project and so grid supply will always be required. Tatu City is itself exploring options to develop solar installations to service businesses in TIP and this option will be considered as and when it materialises. GHG emissions during operations are assessed further in the impact assessment chapter (Chapter 9 of this report).

The decision to adopt battery storage is driven by technical considerations of system integration and space availability but also the waste streams associated with batteries and lack of current recycling options available in Kenya. In addition, the decision to include storage may be taken at a later date to capture the significant advances that battery technology is undergoing including more sustainable options.

Whilst the grid has been generally stable in the region over the last seven years that Tatu City has been active, there will always be a need for backup power sized to total facility power demand. The backup generator technology is still to be decided but will include the following fuel options: diesel, liquefied natural gas (LNG) and hydrogen fuel cell. The latter two options are preferable from an emissions perspective but may not be viable in Kenya due to lack of availability, running costs and ongoing maintenance requirements. Given the criticality of this component, reliability is a primary consideration. In all cases, the number and duration of outages, given the available history at Tatu City, are expected to be limited. This is further assessed in Chapter 9 (Impacts Chapter) of this report.

5.5 No-Go Alternative

A No-Go/ no Project alternative will mean that any potential Project specific impacts are not manifested but the Project benefits, outlined in Section 1.3 of this report, will not be realised. Whilst the project is not of sufficient size to address all the market issues associated with a lack of temperature-controlled storage solutions in Kenya, the benefits that this sector generates are well documented and until there are market entrants into the country, these issues will continue to be faced, including:

- Significant seasonal fluctuations of fruit and vegetable prices;
- Food losses and associated impacts including food insecurity and GHG emissions;
- Reduced food hygiene and public health; and
- Reduced economic development opportunities including product export and businesses moving up the value chain.

The main barrier to entry for cold chain solutions businesses is the very high initial capital costs which many investors will not take the risk on without the confidence that a proven market exists. As such, until a facility is operational and proven, Kenya is unlikely to see an influx of other facilities required to address these market deficiencies in the near to medium term future. Where CSKL differs from other

cold chains businesses is through their funding from DFI investors with a mandate to achieve development goals. This secured funding for the Project and patient capital from these investors provides the platform for the Project as a new market entrant to be successful.

In addition to the market shifting platform the Project provides, there will also be a relatively significant number of direct permanent jobs (100-150) and indirect jobs created as businesses move up the value chain. Secure employment will in turn provide benefits at the household level including financial security. In the no Project scenario these benefits would not be realised for the Project affected communities and potentially further afield should no cold chains businesses materialise in the short to medium term.

Given the above analysis, the No-Go/ no Project is not a favourable alternative and not considered further in this assessment.

6. BIOPHYSICAL BASELINE

6.1 Introduction

This *Chapter* of the Report provides a description of the existing physical and biological conditions of the Project Area, which will directly or indirectly be affected by the proposed Project Activities. It is essential that the baseline conditions of an environment are characterised in order to accurately predict the potential effects the Project will have on the environment. The collection of baseline data therefore focused on providing information to support the assessment of any potential impact of the Project. To put the Project into context, information was collected at the following levels:

- *County Level*: Secondary information was collected at the county level aimed at providing a contextual overview of the host county.
- *Project Area*: Secondary and primary information was collected within the Project Area specifically within and in the immediate vicinity of the Project Site/Plot (biophysical Area of Influence), given its location it an the approved Tatu Industrial Park (TIP) within the gazetted Tatu City Special Economic Zone (SEZ) for which a Strategic Environmental Assessment (SEA) and subsequent Environmental Impact Assessment (EIA) have been conducted and approved by the NEMA.

6.2 General Overview

The Project Site is located in Tatu Industrial Park (TIP) which is part of the wider Tatu City mixed use Special Economic Zone (SEZ) in the western neighbourhood of Ruiru Town and approximately 10 km north-east of Kenya's Capital City, Nairobi (Figure 4.1). Previous land use was mainly characterised by farming; however, since its gazettement as a SEZ and in particular, TIP, a number of industrial developments are on-going.

Given the above developments, the land use of the Project Area is industrial (refer to Sections 7.5 for a detailed description of the Land Use of the Project Area).

6.3 Climate

Kiambu County receives bi-modal type of rainfall. The long rains fall from mid-March to May followed by a cold season usually with drizzles and frost from June to August, and the short rains from mid-October to November. The annual rainfall varies with altitude, with higher areas receiving as high as 2,000 mm and lower areas of Thika Town constituency receiving as low as 600 mm. The average rainfall received by the County is 1,200 mm [(7)].

The mean temperature in the County is 26°C with a temperature range of 7°C in the upper highlands areas of Limuru and some parts of Gatundu North, Gatundu South, Githunguri and Kabete constituencies, to 34°C in the lower midland zone found partly in Thika Town constituency (Gatuanyaga), Kikuyu, Limuru and Kabete constituencies (Ndeiya and Karai). The lowest temperatures are experienced in July and August, whereas January to March are the hottest months.

The County's average relative humidity ranges from 54% in the dry months of January to March, to 300% in the wet months of March up to August.

6.4 Geomorphology and Topography

6.4.1 County Level

Kiambu County is divided into four broad topographical zones; Upper Highland, Lower Highland, Upper Midland and Lower Midland Zone. The Upper Highland Zone is found in Lari constituency and it is an extension of the Aberdare ranges that lies at an altitude of 1,800-2,550 metres above sea level (m.a.s.l). It is dominated by highly dissected ranges and it is very wet, steep and important as a water

(7) Kiambu County Integrated Development Plan, 2018 – 2022.

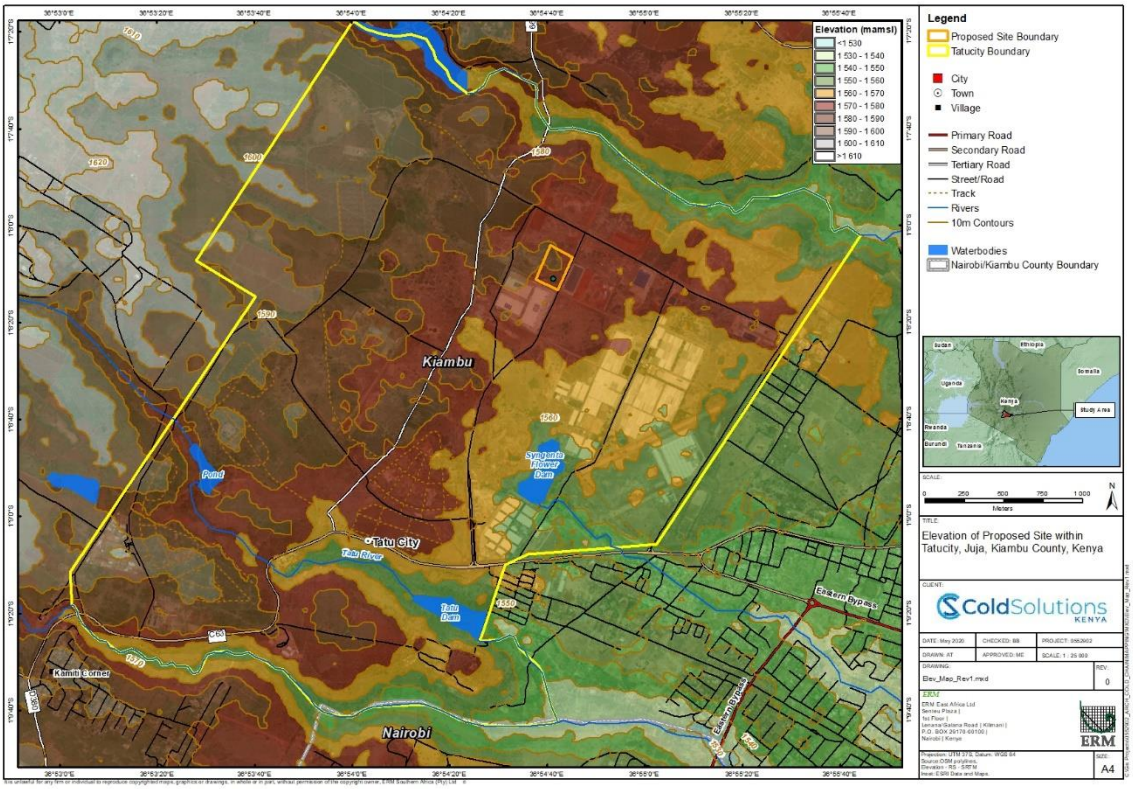
catchment area. The lower highland zone is mostly found in Limuru and some parts of Gatundu North, Gatundu South, Githunguri and Kabete constituencies. The area is characterized by hills, plateaus, and high-elevation plains. The area lies between 1,500-1,800 m.a.s.l.

The upper midland zone lies between 1,300-1,500 m.a.s.l and it covers mostly parts of Juja and other constituencies with the exception of Lari. The landscape comprises of volcanic middle level uplands. The lower midland zone partly covers Thika Town (Gatuanyaga), Limuru and Kikuyu constituencies. The area lies between 1,200-1,360 m.a.s.l. The soils in the midland zone are dissected and are easily eroded. Other physical features include steep slopes and valleys, which are unsuitable for cultivation.

6.4.2 Project Area

The Project Area is located on a high-elevation plain that gently slopes to the south-east. In particular, the Project Site gently slopes from north to South and any runoff from the Project Site is expected to join the Syngenta Flower Dam located approximately 900 metres in the south (Figure 6.1). The elevation at the Project Site ranges from 1,585 m.a.s.l on the eastern side to 1,578 m.a.s.l on the western side.

Figure 6.1 Topography of the Project Area



6.5 Hydrology

6.5.1 County Level

Water in the County is from two principal sources, that is, surface and sub-surface. The County is divided into several sub-catchment areas.

- **Nairobi River Sub-catchment**: This occupies the southern part of the County with the major rivers being Nairobi, Gitaru, Gitathuru, Karura, Rui Rwaka, and Gatharaini.

- **Kamiti and Ruiru Rivers Sub-catchment**: This is located to the north of the Nairobi river sub-catchment. It has eight permanent rivers which include Riara, Kiu, Kamiti, Makuyu, Ruiru, Bathi, Gatamaiyu and Komothai.
- **The Aberdare plateau**: This contributes to the availability of two sub-catchment areas comprising of Thiririka and Ndarugu Rivers. The main streams found in the two areas include Mugutha, Theta, Thiririka, Ruabora, Ndarugu and Komu. They flow from Nairobi, Kamiti, Ruiru, Thiririka, and Ndarugu sub-catchments to form Athi River sub-catchment.
- **Chania River and its tributaries**: This comprises of Thika and Karimenu Rivers which rise from the slopes of Mt. Kinangop in the Aberdares range.

6.5.2 Project Area

There is no river or stream at the Project Site. However, Syngenta Flowers Dam is located approximately 900 metres south of the Project Site (Figure 6.1 and Figure 6.2). Given this proximity, run-off from the Project Site will end into this dam. Syngenta Dam and other dams in the Project area are drained by Tatu River and its tributaries. Due to the land use in the Project Area which is mainly industrial and previous farming activities, the quality of the water in the dams is poor (Figure 6.2); however, effluent discharge from the Project activities if not well controlled could worsen the situation. The Project's effluent discharge management is described in Chapter 4 and the associated impacts assessed in details in Chapter 9 of this report.

Figure 6.2 Syngenta Flower Dam

Source: Google Earth Image

6.6 Geology and Soils

6.6.1 County Level

Kiambu County is covered by three broad categories of soils which are: high level upland soils, plateau soils and volcanic footbridges soils. These soils are of varying fertility levels with soils from high-level uplands, which are from volcanic rocks, being very fertile. Their fertility is conducive for livestock keeping and growth of various cash crops and food crops such as tea, coffee, horticultural

products, pyrethrum, vegetables, maize, beans, peas and potatoes. These soils are found in the highlands, mostly in Gatundu South, Gatundu North, Githunguri, Kiambu, Kiambaa, Lari, Kikuyu, Kabete and Limuru Constituencies. Low fertility soils are mainly found in the middle zone and the eastern part of the County which form part of the semi-arid areas. The soils are sandy or clay and can support drought resistant crops such as soya beans and sunflower as well as ranching. These soils are mostly found in parts of Juja, Thika Town, Ruiru, Kabete, Limuru, Gatundu North and Gatundu South Constituencies.

Most parts of the County are covered by soils from volcanic footbridges. These are well drained with moderate fertility. They are red to dark brown friable clays, which are suited for cash crops like coffee, tea and pyrethrum. However, parts of Thika Town, Ruiru, Juja and Lari constituencies are covered by shallow soils, which are poorly drained, and these areas are characterized by low rainfall, which severely limits agricultural development. However, these areas are suitable for ranching and growth of drought resistant crops.

6.6.2 Project Area

The soils of the Project Area and Project Site in particular are red soils known to be of moderate fertility (Figure 6.3). They used to support coffee growing before the Project Area was converted into a mixed use SEZ and in particular, the Tatu Industrial Park in which the Project Site is located. Given that the Project Site is located in an already approved industrial park where a number of light industries are planned for development, the fertility of the soils (although generally moderate) is not of interest since no crops are expected to be grown there given the current zoning and planning.

Figure 6.3 Red Soils at the Project Site

***Note**: On-going levelling of the Project Site by the management of Tatu City guided by the EIA Report and EIA Certificate of the wider Precinct 3BA in which it is located.*

6.7 Biodiversity

6.7.1 General Overview

Important biodiversity habitats and conservation areas such as Kinale and Kereita forests are located in Lari Sub-county.

Given the Project Area's previous land use (dominated by coffee growing), currently approved land use (development of Tatu Industrial Park (TIP) within the wider Tatu City mixed SEZ), its location in the outskirts of Ruiru Town and proximity to Kenya's Capital City of Nairobi, the habitats in the Project Area are highly modified by human activities particularly, previous farming activities and, urbanisation and industrialisation. It therefore does not contain any important biodiversity habitats and not of any conservation concern.

The Master Plan for the SEZ was approved by NEMA through approval of the SEA. Subsequently, NEMA approval for the development of the Tatu Industrial Park in which the Project Site is located was obtained through an EIA for the construction of light industrial, commercial, residential recreational, school and hospital, and other associated amenities – Precinct 3BA. Guided by these approvals, the Management of Tatu is already levelling the Project Site which includes clearance of the secondary vegetation at the Project Site (Figure 6.3 and Figure 6.4).

6.7.2 Flora

The Project Site is dominated by secondary vegetation comprised on grasses invaded by *Lantana camara*, an invasive plant species whose spread should be controlled as much as possible (Figure 6.4). A fig "Mutumo" tree was also identified at the site which is not of conservation concern but an important cultural tree/ sacred tree amongst the Kikuyu tribe (refer to Chapter 7).

Figure 6.4 Vegetation at the Project Site

Grasses at the Project Site

Lantana camara at the Project Site

The "Mugumo" (fig) tree at the Project Site

A section of the Project Site where the Management of Tatu City is already undertaking vegetation clearance and levelling guided by the already acquired approvals.

6.7.3 Fauna

Given the history of the Project Site as formerly a commercial coffee plantation which was later acquired by Tatu City and gazetted as a SEZ, particularly, the TIP, there are no known faunal habitats of conservation value at the Project Site and its surroundings. At the time of the site visit, no fauna was observed at the Project Site. All habitat on the Project site is classified as highly modified.

6.8 Summary of Biophysical Sensitivities

- Kiambu County in which the Project Site is located receive bi-modal rainfall; the long rains are received from mid-March to May and the short rains from mid-October to November and this has implications for stormwater management.
- The Project Area is located on a high-elevation plain that gently slopes to the south-east. In particular, the Project Site gently slopes from north to South and any runoff from the Project Site is expected to join the Syntenta Flower Dam located approximately 900 metres in the south. The altitudinal range at the Project Site is from 1,585 to 1.578 m.a.s.l, east to west.
- The Project Site has red soils which are generally considered to be of moderate fertility; however, given the current zoning in which it is gazetted as an industrial park within a mixed use SEZ, soil fertility at the Site is not of interest.
- There is no river or stream at the Project Site; however, given the topography, run-off from the Site is expected to end into the Syngenta Flowers Dam located approximately 900 metres to the south.
- The Project Site and its immediate surroundings has highly modified habitats, which are not of any conservation value. The only flora of any value on the site is one Magumo tree which has cultural significance (discussed in details in Section 7.9).

7. SOCIO-ECONOMIC BASELINE

7.1 Introduction

The purpose of this Chapter is to describe the socio-economic environment within which the Project is located. The baseline provides a contextual component for identifying and assessing any potential socio-economic impacts of the Project.

A brief description of the County's socio-economic context is provided below, with further details provided for the Project Area, particularly, the Project Site / Site Specific information which forms the key focus of the socio-economic baseline.

7.2 Project Location

Kiambu County in which the Project Site is located borders Nairobi and Kajiado Counties to the South, Machakos to the East, Murang'a to the North and North East, Nyandarua to the North West, and Nakuru to the West. The County lies between latitudes 00 25' and 10 20' South of the Equator and Longitude 360 31' and 370 15' East (Kiambu CIDP, 2018 – 2022). The County is divided into twelve (12) sub-counties namely Limuru, Kikuyu, Kabete Lari, Gatundu South, Gatundu North, Githunguri, Kiambu, Kiambaa, Ruiru, Juja and Thika Town. These are further divided into 60 wards (Kiambu CIDP, 2019 – 2020).

Specifically, the Project Site is located at Tatu Industrial Park (TIP) within the wider Tatu City mixed use Special Economic Zone (SEZ), Ruiru Sub-county, Kiambu County, Kenya.

7.3 Profile

7.3.1 County Level

According to the 2019 Kenya Population and Housing Census, Kiambu County had total population of 2,417,735 persons comprising of 1,187,146 (49%) males and 1,230,454 (51%) females. The total number of households in the County was 795,241 implying an average Population Density of 952 Persons per square kilometre.

In particular, Ruiru Sub-County had a total population of 371,111 persons in 129,470 households and a Population Density of 1846 persons per square kilometre in 2019.

7.3.2 Project Area

The Project site is located within Tatu Industrial Park (TIP) which is devoid of settlements. Field observations made at the time of conducting detailed site investigations in April 2020 indicate that the Project Site is surrounded by other industrial plots some of which are already being developed (Section 7.3). The nearest settlements are in Ruiru Town of which the closest homesteads are approximately 1.7 km South East of the Project Site.

Consultations with the Area Chief indicated that Ruiru Town is an industrious town with a number of operational factories. Therefore, there is availability of both semi-skilled and unskilled labour who can be employed at the Project Site as necessary.

7.4 Land Use and Land Tenure

7.4.1 County Level

The size of arable land in Kiambu County is 1,878.4 km^2 and the non-arable land is 649.7 km^2 whereas 15.5 km^2 is under water. The average household land ranges from approximately 0.36 Ha on small-scale to 69.5 Ha on large-scale. The small-scale land holdings is mostly found in upper parts of Gatundu North, Gatundu South, Kiambaa, Limuru and Kikuyu constituencies. The fragmentation of the land has made it uneconomical and hence majority of the- farmers are converting their farms into residential plots

to supplement the income from the farms. The large land holdings are usually found in the lower parts of the County especially in Juja Constituency and the upper highlands in Limuru and Lari constituencies. According to Kiambu CIDP (2018 – 2022), 85% of the land in the County is titled with the owners in possession of their respective title deeds and there are no recorded cases of incidences of landlessness. The remaining 15% of the landowners have not received their title deeds due to unfinished land adjudication process and non-payment of the necessary levies.

7.4.2 Project Area

The Project Site is located within the gazetted Tatu Industrial Park (TIP) which is currently under development and is part of the wider Tatu City mixed use SEZ. (Figure 7.1 to Figure 7.3). The TIP is located in the wider Tatu City SEZ where other planned main land uses (outside of the TIP) include:

- **Mixed Use:** Shops, business, entertainment, community facilities, offices and residential. Some parts of mixed-use parcels will provide opportunities for small, possibly even emerging, entrepreneurs to live and run business on very favourable locations with high numbers of passers-by, with high visibility and walking distance from a public transport stop point.
- **The High-Density Residential Zones:** The High-Density Residential Zones is primary focused on high intensity residential development characterised by apartments/flats in a highly urban environment.

Prior to the gazettement into a SEZ, the land in the wider Tatu City was used for commercial coffee farming which was acquired by Tatu City. To mitigate economic impacts (especially for former workers in the coffee plantation), Tatu City established a training academy within the Project Area where many of the local people are admitted and trained on a number of skills including construction. Many of them have since been employed on the construction activities within the SEZ.

Figure 7.1 Land Use of the Project Area

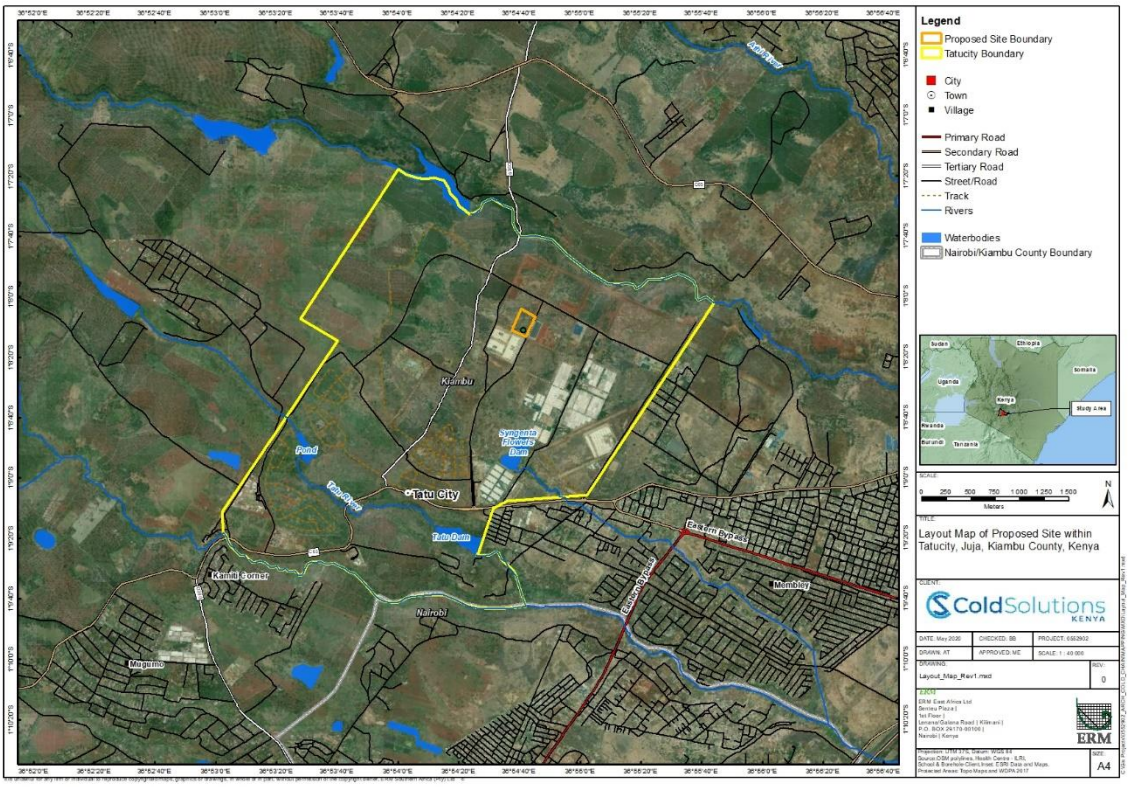


Figure 7.2 Detailed Satellite Imagery of Land Use Activities around the Project Site

Source: Google Earth Image

Figure 7.3 Extent of Tatu City Industrial Park

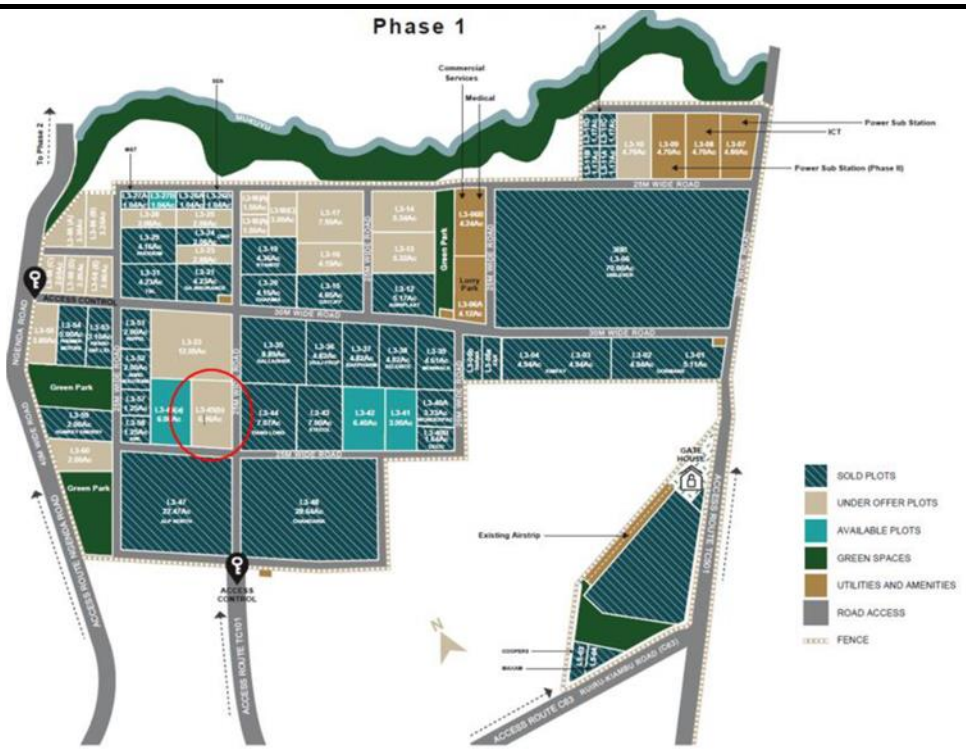


Figure 7.4 below shows some of the industrial developments bordering the Project Site.

Figure 7.4 Industrial Developments around the Project Site

An industrial facility under construction east of the Project Site

Completed Facility for Africa Logistics Properties (AFL) on the south of the Project Site, which is an ambient storage business

The management of Tatu City has a 99-year lease of the Project Area (L.R. No. 28867/1) from which a sub-lease will be given to the Project Proponent.

7.5 Economic Activities

7.5.1 County Level

7.5.1.1 Crop Production

Major crops grown in the County include maize, beans, Irish potatoes, coffee, tea and macadamia. Their production is as summarized in Table 7.1 below:

Table 7.1 Crop Production in Kiambu County

CROPS	AREA (HA)	Average Yield	POTENTIAL
Maize	45981	20 bags/Ha	50 bags/Ha
Beans	17,427	2 bags/Ha	8 bags/Ha
Irish Potatoes	9198	8 tons/Ha	20tons /Ha
Coffee	38279	5 kgs/tree	20kg/tree
Tea	16940	400mt/ha/yr.	3000mt/ha/yr.
Macadamia	817	10kg/tree	50kg/tree

Source: Kiambu CIDP, 2019 – 2020.

The County has extension officers deployed at the ward, Sub County and County levels. The staff to farmer ratio is 1:2000. Due to this large ratio, the main extension method used is group approach which target farmer in groups of similar interests, informal or formal groups. Other approaches include Field days/ exhibitions, trade fairs and demonstrations (Kiambu CIDP, 2018 – 2022).

A characteristic feature of the County's agriculture is the dominance of primary production. Currently, 40 percent of agricultural production is lost through poor storage. There are several farmer groups undertaking value addition of agricultural produce in the County. This is mainly done for milk, bananas, honey, sunflower, spices and vegetables. The value-added products include yoghurt, banana flour, sunflower oil, dried spices, dried vegetables, and jams among others (Kiambu CIDP, 2018 – 2022).

Based on the available surface, sub surface water and water harvesting capacity, Kiambu County has an Irrigation potential of over 62,812 acres (254 km^2). So far, only 7,500 acres (12%) is under irrigation. To increase the area under irrigation, several irrigation projects have been initiated which include Kamwamba, Gatina, Wamoro, Kawira, Kiruiru, Nyamuku, Karia and Waruhiu ATC. Two water pans have also been built in Kimuyu and Waruhiu ATC (Kiambu CIDP, 2018 – 202).

7.5.1.2 Livestock

Dairy industry is the leading enterprise with nearly 70% of the farm families keeping an average of 2-3 cows under zero grazing systems. Milk is the major livestock product in Kiambu County and currently leading in Kenya. Production has increased from 264,773,621 litres in 2013 to 308,818,919 litres in 2016. In order to facilitate milk value addition, eleven bulk milk coolers with a cumulative capacity of 39,000 litres have been procured and issued to farmer dairies including Muguga, Kiriita, Mangu, Karatu, Gatamaiyu, Ndumberi, Bibirioni, Githiga and Ngewa. Two pasteurizers procured; one of 5000 litres installed in Muguga and another of 5000 litres per hour capacity for Kiambaa (Kiambu CIDP, 2018 – 2022).

Poultry and pig keeping continue to take precedence after dairy farming. Egg production and piggery are the second in income generation. According to 2017 data provided by the department of Agriculture, Livestock and Fisheries, Kiambu County, the numbers of livestock in the County were as follows: 247,706 cattle, 139605 Sheep, 102366 goats, 2,550,523 poultry, 52588 pigs and 10227 donkeys. Agro-processing industries in the County include Brookside Dairies, Githunguri Dairies, Ndumberi Dairies, Limuru Milk and Palmside Dairies and local food processing factories such as Farmers Choice Ltd and Kenchic Co. Ltd. The County has 216 Communal cattle dips, out of which 7 are functional and 209 are non-functional. The presence of Wangige wholesale market and Gitaru market for eggs; and Ndumbu-ini slaughterhouse for pigs continue to provide market outlet that favor the enterprises (Kiambu CIDP, 2018 – 2022).

7.5.1.3 Fisheries

The main fish species farmed in the County is Tilapia and catfish which are warm water species. Recreational fishery (sport fishing) is practiced mainly in Gatamaiyu fishing camp in Lari Sub-county. The County has potential for cold water fish such as trout in Lari sub county (Kiambu CIDP, 2018 – 2022).

7.5.1.4 Bee Keeping

Having known the importance of honey to human health, adoption of bee keeping in the County has gradually increased leading to an increase in the amount of honey produced as well as the farmers' income. Beekeeping is scattered in the County and most farmers use Langstroth hives, Top Bar Hive and Log Hives. The production of honey has risen from 102,397 Kgs of honey produced in 2014 to 114,000 Kgs in 2017. The value of honey has also increased from Kshs 51.2 Million in 2014 to 56 Million shillings in 2017 (Kiambu CIDP, 2018 – 2022).

7.5.2 Project Area

Ruiru Sub-county in which the Project Site is located is an industrial town with several major factories, including Devki Steel Mills, Super Foam Limited, Spinners & Spinners Garment Factory and Ruiru Feeds Limited (Figure 7.5) all of which are expected to have their own environmental and social impacts (also refer to cumulative impact assessment in Chapter 9).

Figure 7.5 Industries in Ruiru Town

Super Foam Limited in the Project Area

Devki steel Mills Ltd. In the Project Area

There are also small-scale business such as retail shops and kiosks, *Boda* (Motorcycle) business and supermarkets (Figure 7.6). The town is well served by banks and shopping malls and currently is enjoying a housing boom, as many coffee estates are converted into residential areas. Information and Communication Technology businesses are also emerging, including SmartEdge PASHA Center, a digital village where the community can buy computers and get free computer training.

Figure 7.6 Ruiru Town which starts approximately 1.6 km South East of the Project Site

Given the above background of an industrious Ruiru Town, TIP aims at consolidating the light industrial activities in a well-planned manner and some of the industries are already being set up around the Project Site (Figure 7.4).

7.6 Water and Sanitation

7.6.1 County Level

7.6.1.1 Water Resources

Kiambu County is endowed with both surface and ground water resources. The County has sixteen permanent rivers originating from Aberdare Ranges, which is the main water tower for the County. The major rivers that meet the County's water demand are; Ndarugũ, Thiririka, Ruiru, Kamiti and Kiu, all of which eventually drain into Athi River (also refer to Section 6.5: Hydrology). The Eastern part of the County that includes Thika, Gatundu, Ruiru and Juja is well endowed with surface water from Chania, Thika, Karimenu, Ruabora, Ndarugu, Thiririka, Theta, Mukuyu, Ruiru rivers. The Western part of the County that includes Limuru, Kikuyu, Kiambu, Karuri, Lari and Githunguri areas has limited surface water sources, hence rely on underground water sources mainly boreholes. Table 7.2below summarises the Catchment discharge for the four main rivers of Kiambu County.

Table 7.2 Catchment Discharges of Kiambu County

River	Low (m^3/day)	High (m^3/day)
Kamiti	3,620	216,000
Ruiru	38,790	1,331,300
Thiririka	2,160	776,740
Ndarugu	3,500	662,770

Source: Kiambu CIDP, 2018 – 2022.

Kiambu County has a total of eight main licensed water management institutions. Table 7.3 shows the area coverage and the percentage sustainable water usage by each company.

Table 7.3 Kiambu County Main Licensed Water Management Institutions

S/no	Water Company	Area Coverage in km^2	Percentage of Sustainable Use
1.	Limuru Water and Sewerage Company	108	80
2.	Kikuyu Water Company	41	80
3.	Kiambu Water and Sewerage Company	32	80
4.	Karuri Water and Sanitation Company	18	60
5.	Githuguri Water and Sanitation Company	98	87
6.	Ruiru Juja Water and sewerage Company	175	76
7.	Gatundu Water and Sanitation Company	150	80
8.	Thika Water and Sewerage Company	254	65

Source: Kiambu CIDP, 2018 – 2022.

In the County, 46% of the population is not served by the above main licensed water management institutions but are rather served by Community Based Organizations (CBOs), private water operators and direct abstraction from surface and ground water sources (Kiambu CIDP, 2018 – 2022).

7.6.1.2 Sanitation

Kiambu County is considered as 60% urban with numerous peri-urban centres mushrooming rapidly due to land use changes. There are twelve main urban centres within the County out of which five, namely, Thika, Kiambu, Limuru, Ruiru and Juja urban centres have convectional sewer treatment systems. As explained in Section 4.4.3, Tatu City working closely with Athi Water Services Board and the World Bank have established the Ruai treatment plant; the trunk sewer lines from Tatu City will be connected to the main sewer trunk to this treatment plant. Apart from Ruiru, Ruai and Juja treatment works the rest of the treatment works are old and currently treating beyond their design limits. Kiambu sewer treatment works was constructed in 1974 with a design capacity of 1,000m^3/day. It's currently receiving 2,200m^3/day; Limuru was commissioned in 1984 with a design capacity of 540m^3. It's currently receiving 2000m^3/day; Thika was constructed 1978 with a design capacity of 6,100m^3/day. The treatment facility is currently receiving 8,000m^3/day. In order to address the shortfalls, Thika treatment works is currently undergoing improvement through donor funding. The capacity of the treatment system is expected to increase by 6500m^3/day when the on-going improvements works are completed (Kiambu CIDP, 2018 – 2022).

Garbage collection and disposal around the urban centres within the County of Kiambu is at 75%. The average number of residents in a household is 5 persons/household, with an average daily waste discharge of 0.53 to 0.65kg/person/day (JICA, 2010). 72 private firms and 26 registered youth group compliment Kiambu County government in waste collection. An engineered semi aerobic landfill (Fukuoka method) has been constructed at Kangoki in Thika Sub County, the first of its kind in Kenya and Africa which will handle solid waste from the surrounding sub-counties after commissioning. The new technology will be accompanied by a modern waste segregation unit and composting facility. A pylorisis plant for recycling plastic waste is in place at Thika Sub-county (Kiambu CIDP, 2018 – 2022).

Public sanitation facilities in Kiambu County are spread in the various sub-counties as follows: one in Juja Sub-county, two in Gatundu South Sub-county, two in Lari Sub-county, three in Ruiru Sub-county, four in Gatundu North Sub-county, three in Githunguri Sub-county, five in Kiambu Sub-county, three in Kiambaa Sub-county, four in Limuru Sub-county, six in Kikuyu Sub-county, five in Kabete Sub-county and twenty one in Thika Sub-county (Kiambu CIDP, 2018 – 2022).

7.6.2 Project Area

The facilities within the Project Area are currently connected to the Ruiru Municipal water supply system. A new well for future use is planned to be constructed in Tatu City with a delivery of 150 m^3/per hour; however, the current water demand is well met by the water storage tanks within Tatu City. Liquid waste for the facilities within the Project Area is discharged directly to the SEZ Sewer System[8]. However, as per the NEMA Certificate Number NEMA/EIA/VC/343, the sewers in Tatu City will be connected to the Ruiru-Juja Water and Sewerage Company network.

Observations made at the time of the Site visit conducted in April 2020 showed that there are proper concrete drainage channels along the constructed access roads as well as manholes (expected to be connected or planned for connection to the sewer line (Figure 7.7).

[8] ARCH E&S Tatu City Proposed CCS Warehouse Site Visit and Rapid E&S Checklist, 21st November 2019

Figure 7.7 Water Management Infrastructure within TIP

Concrete slabs over drainage channels along access roads; designed to allow for stormwater run-off

Manhole along the constructed access road to the Project Site

7.7 Education and Literacy

7.7.1 County Level

The total number of Early Childhood Development Education (ECDE) teachers is 5,370 of whom 1,200 work in public/government education centres and the rest are in private education centres. The teacher to pupil ratio is 1:28. The total enrolment for ECDE is 99,061 pupils. 33,336 pupils have been enrolled in public ECDE comprising 17,071 males and 16,266 females while private ECDE centres have total enrolment of 65,725. The gross enrolment rate is 71.70% with completion rate retention and transition rate falling at 95%. There are 98 schools for pupils with special needs where 3163 pupils have been enrolled (Kiambu CIDP, 2018 – 2022).

There are 948 primary schools in Kiambu County out of which 576 are public and 472 are private. The total number of primary school teachers is 21,090 and the teacher to pupil ratio is 1:38. The total enrolment rate stands at 326,770pupils comprising of 164,539males and 62,231females. The net enrolment rate is 96.9%. In addition, the number of pupils enrolled for special needs is 3,055. The school infrastructure has greatly improved through devolvement of funds such as constituency development fund. Transition rate was at 80% (Kiambu CIDP, 2018-2022).

There are 365 secondary schools in the County consisting of 271 public and 74 private schools. The total enrolment rate is 130,473 of which 63,939 are males and 65,534 are females. The number of students enrolled for special needs is 573. The number of teachers in private schools is 5,402 while those in public schools are 7,067. The gross enrolment rate is 86.4% while the dropout rate is 7.5%. The teacher to student ratio is 1:25. There is need to put more effort to ensure that dropout rate falls to 0% (Kiambu CIDP, 2018 – 2022).

The County has one public University, Jomo Kenyatta University of Agriculture and Technology (JKUAT) located in Juja Constituency and 6 private universities, namely Zetech University, Mount Kenya University, Gretsa University, St Pauls University, Presbyterian University of East Africa and Kiriri Womens University of Science and Technology. There are also four university campuses which include Lower Kabete campus of University of Nairobi, Upper Kabete campus of university of Nairobi, Kikuyu campus of University of Nairobi and Ruiru campus of Kenyatta University. The County also has 26 colleges of which two are teachers training colleges namely Thogoto and Kilimambogo with a total enrolment of 1,884 of which 679 are male and 1,205 are female. The total enrolment in the various

universities in the County is 24,740 with 13,497 males and 11,243 females. The total number of students in colleges is 36,372 with males being 17,474 males and 18,898 females (Kiambu CIDP, 2013 – 2017).

Literacy rate in the County is at 95.6% (those who are able to read) while 95.2% of the population is able to write. About 95.4% of the total population in the County can both read and write. The high literacy rates in the County are a result of continued investment in the education sector and there is need for more investment to attain 100% literacy rates.

7.7.2 Project Area

There are about 16 Primary Schools in the in Ruiru Sub-county in which the Project Site is located that include Nova Pioneer Primary School (Figure 7.8), St. George Primary School, Tatu Primary School, Twiga Primary School, Ruiru Primary School, Ngewe Primary School, Oakland Primary School, Ruera Primary School, Murera Primary School, Mutundu Primary School, Kitamaiyu Primary School, Matopeni Primary School, Mugutha Primary School, Mukuyu Primary School, Kwa Ngethe Primary School, Thome Promary School and Kwihota Primary School.

There are about 13 Secondary Schools in the in Ruiru Sub-county in which the Project Site is located that that include Crawford International School (Figure 7.8), Nova Pioneer Boys High School, Nova Pioneer Girls High School, Spinners Boys Secondary School, Ruiru Girls High School, Uhuru Kenyatta Secondary School, Blessed Mugutha Secondary School, Gikumari Springs Secondary School, Githurai Mixed Secondary School, Kitamaiyu Secondary School, Githunguri High School, Zabibu Centre is a Private Secondary School and Sukari Presbyterian Senior School.

Figure 7.8 Schools in the Project Area

Nova Pioneer Primary School within Tatu City

Crawford International School within Tatu City

Two universities have their main campuses in Ruiru Sub-county; that is, Kenyatta University and Zetech University. The University of Nairobi and other institutions of higher learning have campuses in or near Ruiru Sub-county.

None of the above institutions is located at or within close proximity of the Project Site; however, Project impacts such as noise, and, dust emissions, and health and safety will need to be appropriately managed to avoid impacting on school going children as assessed in detail in Chapter 9 of this report.

Within the wider Tatu City, there is an established Tatu City Training Academy. Engagements made with the management of this training academy during the ESIA process revealed that:

- The training academy, in partnership with Arc Skills, teaches skills relevant to the construction industry, such as masonry, plasterwork, electrical, plumbing, painting, tiling, and carpentry. On

completion of each six-week course, graduates are placed in construction jobs provided by contractors at Tatu City and the burgeoning development surrounding the SEZ.

- All the training provided by Tatu City Training Academy is provided exclusively for communities in nearby areas to create appositive impact on the local community.

- All contractors working at the SEZ are required to hire from the local community. At present, about 3,100 workers from the local community are currently employed at various projects within the SEZ.

7.8 Health

7.8.1 County Level

Kiambu County has 505 health facilities; 108 are public health facilities, 64 are faith-based health facilities and 333 are private health facilities. As per the Kenya Essential Package for Health (KEPH), these are categorised into 70 dispensaries (Level 2), 24 Health centres (Level 3), 11 Level 4 hospitals and 3 Level 5 hospitals (Kiambu CIDP, 2018 – 2022). These are distributed across the sub-counties in the County. The County is served by a good road network hence easy access to health facilities, with the average distance to the health facilities being 7 kms.

The top five causes of morbidity in the County are respiratory diseases, which had 1,006,395 hospital cases, disease of the skin had 190,576 cases, diarrhoea disease had 140,493 cases, urinary tract infection had 101,120 cases, and hypertension had 82,882 cases (2016 statistics, contained in Kiambu CIDP, 2018 – 2022).

HIV prevalence rate in Kiambu County is at 5.6% according to the 2016 estimates. With this prevalence rate, the County ranks the sixths in the country (Kiambu CIDP, 2018 – 2022).

It is important to note that this ESIA Project Report has also been prepared at a time when the pandemic COVID-19 has affected a number of countries including Kenya and it is still a health threat.

7.8.2 Project Area

There are about 7 health facilities in Ruiru Sub-county which include Ruiru Sub-county Hospital, Nazareth Hospital Ruiru, Ruiru Health Clinic, Transcon Wendo Hospital Ruiru, Kalimoni Mission Hospital, Ruiru Hospital Limited and Equity Afia Medical Centre (Figure 7.9). In particular, there is no health facility located at or within close proximity of the Project Site; therefore, the Project activities are not expected to directly affect the physical infrastructure of any health facility in the Project Area.

Disease prevalence in the Project Area mirrors that of the wider County as stated above. The impact of the Project activities on the disease prevalence within the Project Area, particularly, Occupational Health and Safety (OHS) and community health is assessed in Chapter 9 of this report.

Figure 7.9 Health Facilities in the Project Area

Nazareth Ruiru Hospital in Ruiru Sub-county

Transcon Wendo Hospital in Ruiru Sub-county

7.9 Archaeology and Cultural Heritage

7.9.1 County Level

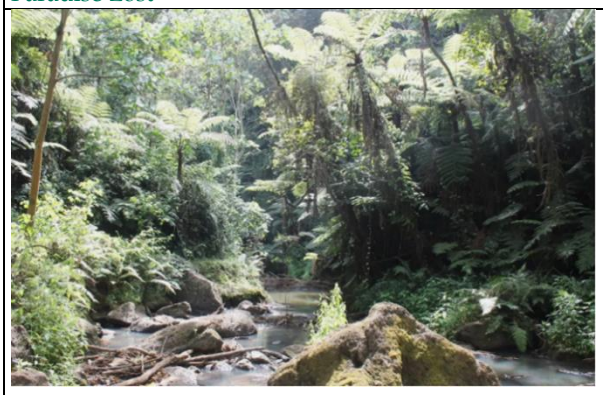
The archaeological and cultural sites in Kiambu County also double as the County's main fascinating local and international tourism sites as described below (also refer to Figure 7.10):

- ***Paradise Lost***: It is located in Kiambu town, 16 km from Tatu City, off the junction of Nairobi-Kiambu Road. It is a magnificent park and resort located in the middle of a coffee farm. The main attractions here include scenic waterfalls and caves. It is a suitable destination for bird watching, nature trails, picnics, fishing, boat riding and horse riding.
- ***Mugumo Gardens:*** This is one of the Kiambu county sights named after a 15-foot diameter, giant tree. The site in Thika serves as a historical site in memory of Prophet Mugo wa Kibiro. Locals in this area confirm that most of Mugo wa Kibiro's prophesies have come true. A case in point is the fall on the Mugumo tree in 1963 which implied termination of British governance in Kenya.
- ***Gatamaiyu Camp and Fishing Grounds***: Gatamaiyu Camp is a popular Kiambu sightseeing found in Gatamaiyu forest which forms part of the Kereita forest. Besides the camping site, visitors have full access to the fishing grounds. Gatamaiyu riverine is another top Kiambu sights through which guests can improve on their adventure within the forest. Riverine walk is especially for urban birding lovers.
- ***Fourteen Falls***: Fourteen Falls is among the thrilling Kiambu sights located 65 kilometers off Thika - Garissa Road. The Falls are all named after fourteen successive falls in Athi River which get water from the Aberdare Mountains. Fourteen Falls offers its visitors with an impressive view of deep waters estimates at 27 meters. Tourists equally have a lot of experience to go away with when they leave these falls. For instance, visitors often carry out fishing, boating, photography, and wholesome interaction with nature.
- ***Chania Falls***: These falls are strategically located off Thika road as you enter Thika Town. The falls can better be viewed from Blue Posts hotel grounds. This is one of the Kiambu sights that can easily be accessed from Nairobi Town. Chania Falls offers a good experience with birding and scenic attraction. Guests can also have a memorable picnic while in this site for a retreat or camping.
- ***Kereita Forest:*** This forest is found in Lari District within Kiambu County. Found along Nairobi-Nakuru Highway, Kereita Forest is part of the Aberdare Forest Reserve. The two forests offer guests with several ecosystem benefits that include thrilling hiking trails facilitated by Kijabe Environment Volunteers. Kereita is a serene area that is heavily endowed with indigenous birds and animals. As a result, visitors can mingle with nature and appreciate our global ecosystem diversity.
- ***Kilimambogo:*** Kilimambogo ranks high among other Kiambu top sights. Kilimambogo houses the grave of Sir Macmillan, a renowned philanthropist who passed on decades ago. As you climb up, you will have a view of Macmillan's grave, together with that of his wife, and house help. Historically, Macmillan entertained the former president of the United States, Theodore Roosevelt, and Sir Winston Churchill at the foot of Kilimambogo hill. In Swahili, Kilimambogo refers to the mountain of the Buffalo.
- ***Thika World War Memorial Park:*** This is another sightseeing near Kiambu located along general Kago Road. The facility regularly attracts tourists interested in learning more about the world war and those who lost their lives in defence of their country.

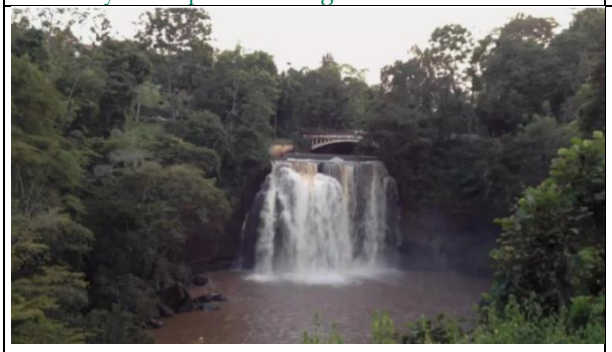
Figure 7.10 Cultural and Archaeological Sites in Kiambu County

Paradise Lost


Mugumo Gardens


Gutamaiyu Camp and Fishing Grounds


Fourteen Falls


Chania Falls


Kereita Forest


Kilimambogo


Thika World War Memorial Park

7.9.2 Project Area

A *Mugumo* Tree (Figure 7.11), that will need to be removed was identified at the Project Site. The process of confirmation that it was indeed a *Mugumo* tree was done through a Site Visit on 16th April 2020 that was undertaken by the consultants from ERM in collaboration with the Area Chief and a local Village Elder. *Mugumo* trees are considered as sacred trees among the Kikuyu community who are the local inhabitants in Ruiru Sub-county and central Kenya at large. Its name was inherited from the ancestors. It is believed that the spirits of the ancestors and the living dead hover around this tree.

The Kikuyu community inhabiting the slopes of mount Kirinyaga, which has since been renamed Mount Kenya, consider *Mugumo* trees to be shrines. They use them to commemorate their land's independence.

The main sacred Mugumo tree is located in the Project Area but outside the Project Site and will thus not be physically affected by the Project Activities (Figure 7.12). It was a favourite stopover for Kenya's first President Mzee Jomo Kenyatta and has been named after him (Mugumo wa Kenyatta). Kikuyu elders often meet under the tree to perform prayers and ceremonies. Engagements with the management of Tatu City confirmed that this main Mugumo tree has been integrated within the wider Tatu City SEZ and will be retained to maintain its cultural value and legacy.

Figure 7.11 Mugumo Tree at the Project Site

A Mugumo Tree at the Project Site that will need to be removed – Photo 1

A Mugumo Tree at the Project Site that will need to be removed – Photo 2

Figure 7.12 The main Sacred Mugumo Tree located outside the Project Site

ERM consultants accompanied by the Area Chief and Village Elder conducting a Site Visit the main *Mugumo* Tree outside the Project Site	Names of the Village Headmen leaders and members of the *Muthamaki* inscribed on the *Mugumo* Tree that has been preserved at Tatu City. The inscription of ones names signified membership among the important Kikuyu traditional leadership.

A second visit to the *Mugumo* Tree at the Project Site was undertaken by a team of 6 Village Elders on 20th April 2020 to reconfirm it and provide guidance on the required process to remove it. The required cultural process to be followed before removing the tree was discussed and shared with the ERM consultants and the Project Proponent. As part of the process, a special ceremony (ritual specifically known as "*Kutoa Kafara*") will need to be performed by the village Elders before the tree is removed. The Project Team will liaise closely with the local administration and leadership to ensure the process is followed in line with the local cultural requirements and international best practice as assessed in details in Chapter 9 of this report. This is also further elaborated in the SEP, provided in **Appendix C**.

7.10 Infrastructure

7.10.1 County Level

Most of the infrastructure in Kiambu County is presented under the respective sections above (Sections 7.3 to 7.9). In addition, the County has a total of 5,533 km of road network and249 km of road network are yet to be opened (Kiambu CIDP, 2018 – 2022). The roads under bitumen standards are 865.4 km, 1,051 km on gravel, and 3,167 km on earth surface. In particular, the County is served by Thika Super Highway (Githurai – Ruiru – Juja – Thika), approximately 50 km and A104 Uthiru – Kikuyu – Kamandura – Kinungi, approximately 65 km. It is also served by a railway line which is 131 km and has railway stations in Kahawa, Ruiru, Juja, Thika, Kikuyu and Limuru. There exist bus parks in all sub-counties, 9 paved and 4 unpaved bus parks (Kiambu CIDP, 2018 – 2022).

The County has 98% mobile network coverage owing to its location and proximity to Kenya's Capital City of Nairobi. Landline coverage has been on the decline due to adoption of new technology and ease of using mobile phones. There is a total of 19 post offices and 14 sub-post offices which are fairly distributed in the County. There are quite a number of cyber cafes offering internet access services. This has been possible due to introduction of fibre optic cables in the County. Many residents listen to local radio stations mainly Kameme, Inooro and Coro Frequency Modulation (FM) stations for primary information in addition to other national stations. The citizens are able to watch a variety of television (TV) stations operating in the Country. There is one Huduma centre[9] located at Thika where citizens access government services (Kiambu CIDP, 2018 – 2022).

7.10.2 Project Area

Ruiru Sub-county and town centre can be accessed via the Thika Super Highway and the Eastern and Northern by-passes. The business district of Ruiru is well connected with tarmac roads which connects it to Nairobi, Thika, Gatundu, Juja and Kiambu Towns. With this improved road network connectivity, there has been rapid population growth in Ruiru Town and its surroundings.

The main infrastructure around the Project Site include a tarmacked access roads, electricity transmission lines, street lighting network and sign posts as already presented in the respective sections above (particularly, Figure 7.4, Figure 7.7 and Figure 7.13).

[9] Huduma Centre are established under the Huduma Kenya Programme which are one-stop public service delivery centres across the country.

Figure 7.13 Main Access Road to Tatu City

7.11 Summary of the Socio-economic Baseline

- The Project Site is located at Tatu City Industrial Park (TIP) which is a gazetted industrial park devoid of settlements. Therefore, the Project fits within the planning of the Project Area and its development will not cause any physical or economic displacement. There are a number of other light industrial activities such as Africa Logistics Properties (ALP) around the Project Site.
- Ruiru Sub-county where in which the Project Site is located is mainly an industrial town with several major factories. There are also small-scale business such as retail shops and kiosks, *Boda Boda* (Motorcycle) business and supermarkets. Each of the facilities also have their own environmental and social impacts.
- The management of Tatu City has a 99-year lease of the Project Area (L.R. No. 28867/1) from which a sub-lease will be given to the Project Proponent.
- The facilities within the Project Area are currently connected to the Ruiru Municipal water supply system. A new well is being drilled in Ruiru Sub-county with a delivery of 150 m^3/per hour and is expected to be operational in November 2020.
- Liquid effluent for all the facilities within the Project Area are discharged directly to the SEZ Sewer System. However, as per the NEMA Certificate Number NEMA/EIA/VC/343, the sewers in Tatu City will be connected to the Ruiru - Juja Water and Sewerage Company network, which is being upgraded through World Bank funding.
- Observations made at the time of the Site visit conducted in April 2020 showed that there are proper concrete drainage channels along the constructed access roads in the Project Area as well as manholes (expected to be connected or planned for connection to the sewer line).
- Given that the Project Site is located in a gazetted industrial park under the management of Tatu City, all land acquisition was completed. No physical resettlement was required, only economic displacement was applicable as the site was a former coffee plantation.

- No social service facilities at or in the immediate vicinity of the Project Site such as schools, health facilities, churches, etc. The Tatu City Project has however provided for schools and a training programme for previously affected workers, through the Tatu City training Academy. Many of these trained, are now employed on construction sites, as available work is prioritized for the local community, and contractors are obligated to employ from the local community as a first priority.
- The top five causes of morbidity in the County and which could be replicated in the Project Area are respiratory diseases, disease of the skin, diarrhoea, urinary tract infection and hypertension.
- There is one *Mugumo* Tree, a traditional sacred tree among the Kikuyu community at the Project Site. A cultural ceremony led by the village elders is required to remove this tree.
- The main infrastructure around the Project Site include tarmacked access road, electricity transmission lines, street lighting network and sign posts.

8. STAKEHOLDER ENGAGEMENT

This Chapter presents a summary of the stakeholder engagement undertaken as part of the ESIA process for the Proposed Project. It also serves as a summary of a more detailed Stakeholder Engagement Plan (SEP), which presents the engagement approach and identifies stakeholders and the mechanisms through which stakeholders have been engaged. The complete SEP is included in **Appendix C**.

The engagement process has been designed to meet both Kenyan legal requirements for public participation in relation to an ESIA Project Report, and international requirements for engagement as outlined in the IFC Performance Standards.

8.1 Objectives of Stakeholder Engagement

The objectives of engaging stakeholders and the community during the ESIA process and beyond include:

- **Ensuring understanding:** An open, inclusive and transparent process of culturally appropriate engagement and communication is undertaken to ensure that stakeholders are well informed about the proposed Project as it develops. Information is disclosed as early and as comprehensive as possible and appropriate.
- **Involving stakeholders in the assessment:** Stakeholders are included in the scoping of issues, the assessment of impacts, the generation of mitigation and management measures and the finalisation of the ESIA Project Report. They also play an important role in providing local knowledge and information for the baseline to inform the impact assessment.
- **Building relationships:** Through supporting open dialogue, engagements help establish and maintain a productive relationship between the Project and stakeholders. This supports not only an effective ESIA, but also strengthens the existing relationships and build new relationships between the Proponent and stakeholders.
- **Engaging vulnerable peoples:** An open and inclusive approach to consultation increases the opportunity of stakeholders to provide comment on the Project and to voice their concerns. Some stakeholders, however, need special attention in such a process due to their vulnerability. Special measures are to be considered to ensure that the perspectives of vulnerable stakeholders are heard and considered.
- **Managing expectations:** It is important to ensure that the Project does not create or allow unrealistic expectations to develop amongst stakeholders about Project benefits. The engagement process serves as one of the mechanisms for understanding and then managing stakeholder and community expectations, where the latter is achieved by disseminating accurate information in an accessible way.
- **Ensuring compliance:** The process is designed to ensure compliance with both local regulatory requirements and international best practice.

One of the key outcomes of engagement should be free, prior and informed consultation of stakeholders, where this can be understood to be:

- **Free:** engagement free of external manipulation or coercion and intimidation;
- **Prior:** engagement undertaken in a timely way, for example the timely disclosure of information; and
- **Informed:** engagement enabled by relevant, understandable and accessible information.

8.2 Project Stakeholders

A stakeholder is defined as any individual or group which is potentially affected by the Project or who has an interest in the Project and its potential impacts. Different issues are likely to concern different stakeholders; as such stakeholders have been grouped based on their connections to the Project.

Table 8.1 presents the range of stakeholder groups that have been identified and included within the stakeholder engagement process to date.

Table 8.1 Project Stakeholders

Stakeholder Category	Stakeholder Group	Connection to the Project	Stakeholders Required to be consulted	Stakeholders TBC	Comment
National Government	National Regulatory Bodies Government Agencies	National Government are of primary importance in terms of establishing policy, granting permits or other approvals for the proposed Cold Storage Facility, and monitoring and enforcing compliance with Kenyan Law throughout all stages of the Project life cycle.	National Environment Management Authority (NEMA)	▪ Ministry of Transport, Infrastructure Housing, Urban Development and Public Works ▪ Ministry of Health ▪ Ministry of Agriculture, Livestock, Fisheries and Irrigation ▪ Ministry of Lands and Physical Planning	The aim is to conduct a stakeholder engagement meeting with the relevant departments at the County Level and determine whether further engagements are required at the national level. In all cases NEMA will be consulted.
County Government	Kiambu County Government	The County Government is also of primary importance as it is responsible for implementation of legislation, and development plans and policies at the County level. The County Government will also have a role in issuing permits and processing applications. Finally, the County Government has a role in ensuring the views of the communities it represents are	▪ Office of County Governor Ministries (Departments) – Department of Water, Environment, Energy & Natural Resources – Department of Agriculture, Livestock and Irrigation – Department of Lands, Housing, Physical Planning, Municipal Administration & Urban Development – Department of Education,	N/A	These are the departments identified as being relevant to the project development. The aim is to have one meeting with all relevant departments present and the DCC.

Stakeholder Category	Stakeholder Group	Connection to the Project	Stakeholders Required to be consulted	Stakeholders TBC	Comment
		presented to the Project.	Gender, Culture and social Services – Department of Health services – Department of Roads, Transport & Public Works – NEMA County Director of Environments ▪ Deputy County Commissioner (DCC)		
Tatu City		The DCC is the planning control function at Tatu City who are responsible for approving the project design in line with their approved guidelines.	Development Control Committee	N/A	The interface with Tatu City will be via the DCC who will coordinate with other relevant departments – e.g. Tatu Connect, Community Liaison
Traditional Authorities	Administrative and Customary authorities such as Village Elders	Local community leaders acting as representatives of their local community. The traditional leaders and local authorities are the gatekeepers and play a key role in mobilization and maintaining law and order	▪ Area Chiefs ▪ Sub-Chief ▪ Elders	N/A	The meeting with the Area Chief and Elders will be organised in coordination with Tatu with the DCC and member of Tatu Community Liaison present for the meeting.
Neighbours	Neighbouring Companies within Tatu City	Companies that may be directly or indirectly affected by Project activities	▪ E.g. Africa Logistics Properties (ALP) Company and other neighbouring Companies	Property Owners Association – consulted as part of the DCC approval process	CCS in coordination with Tatu will consult with immediate neighbours which is understood to be two operating companies. Tatu City to confirm other immediate neighbours that may be relevant.

8.3 Approach to Stakeholder Engagement

Stakeholder engagement for the proposed Project will be and was undertaken using a staged approach in line with the various phases of its development as follows:

- ESIA process engagement; and
- Post ESIA engagement.

8.3.1 ESIA Process Engagement

The Objectives of the ESIA process engagement were to:

- To meet/communicate with key stakeholders and introduce them to the Project and ESIA process.
- To discuss the Project with the stakeholders including identified impacts and the plans in place to manage them.
- To obtain stakeholders' view on the Project.
- To obtain stakeholders' concerns on the Project.
- To understand stakeholders' expectation from the Project.
- To collect baseline data through a variety of methods including using participatory tools.
- To notify stakeholders of the next steps of the Project development.

Table 8.2 presents a summary of the stakeholder engagements conducted during the ESIA process, while a summary of the key issues raised/ comments made is presented in *Section 0*. The results of the stakeholder consultations have been incorporated into the baseline information as well as into the impact assessment Chapter (Chapter 9 of this ESIA Project Report).

Table 8.2 Details of ESIA Process Stakeholder Engagement

Stakeholder	Mode of Engagement	Engagement Date	Venue
Tatu City Management	Key Informant Interviews (KII)	20th May 2020.	Via Zoom
		3rd June 2020.	Tatu City Management Offices
Tatu City Training Academy	KII	3rd June 2020	Tatu City Training Academy
Area Chief, Ruiru	KII	16th April 2020.	Assistant Chief's Office
Katrina Management Consultants Limited	By email	18th June 2020	By email
Office of the Deputy County Commissioner, Ruiru Sub-county	Teleconference and by email	1st July 2020	Teleconference and by email
Ruiru Village Headmen	KII	29th June 2020	Area Chief's Office
Hankar Trading Company Limited	By email	10th July 2020	By email

8.3.2 Outcomes of Engagement Conducted to Date

As indicated in *Table 8.2* stakeholder engagement meetings were held during the ESIA process of the Project.

The key questions and concerns raised by stakeholders during the ESIA process are outlined in Table 8.3 and further details included in the SEP (**Appendix C**). The Background Information Document

(BID), detailed minutes of the stakeholder engagement meetings conducted during the ESIA process, meeting photos, attendance registers, and the developed stakeholder engagement database, are all presented **in Appendix D** and **Appendix E**.

Table 8.3 Outcomes of ESIA Process Stakeholder Engagements

Main Theme brought up by Stakeholders	Key stakeholders issues/ comments
On Stakeholder Engagement	Consult widely, including consultations with Tatu City, the District Commissioner (DC), County Commissioner (CC), Clerk County assembly of Kiambu, Area Chief and the village elders. Other additional stakeholders can include neighbouring communities which includes: • Ruiru Juja Water and Sewerage Company (RUJUWASCO); • Tatu City Water and Sewerage Company (TCWSC); • STECOL Corporation (In charge of Road Construction in Tatu City); • Unity Homes; • Tatu City Training Academy; • Hunkar Gas; and • Tianlong Cylinder Company.
	It is commendable that Tatu City have built a strong and positive relationship with the community. The Tatu brand is based on the Mugumo Tree.
	Consider Stakeholder issues raised during stakeholder consultation process.
On Positive impacts/ opportunities	▪ Employment opportunities for the local community members during construction and operations. ▪ Achievement of a cold storage facility. ▪ Price stability for agricultural products (meat, horticulture products, etc). ▪ Food security (as a result of improved storage). ▪ Achieved of agriculture best practice (related to storage of agricultural produce). ▪ Enhanced trade with regards to fresh products. ▪ Contributes towards development of Tatu City and particularly make it a hub for cold storage facility.
Shared facilities	There are shared facilities within the Project area, such as electricity, water, sewer lines etc. It is best practice to inform the neighbours of any planned activities or disruptions that may take place. This will also help in good management and in harmonised planning and development.
On Information already shared with the local communities	The Communities were already informed about the mixed developments.
	Tatu City has a community Liaison officer (CLO) who can help with information dissemination.
Cultural constraint: Information provided on the process required for the removal	Tatu City will take over the handling of the Mugumo Tree and have a liaison officer who will manage the ceremonial process required. Tatu City will work closely with CSKL and ERM to ensure the process is well followed and documented.

Main Theme brought up by Stakeholders	Key stakeholders issues/ comments
of the Mugumo Tree on the Project Site.	The Mugumo tree is considered sacred by the Kikuyu community and it was very important to make sure the correct process is followed, before deciding whether it can be removed. (Note that the required process was subsequently established but the required ceremony is yet to be conducted)
	It has been confirmed by the Council of Elders that the tree can be removed subject to a ritual being performed given that no 'binding ceremony' has taken place historically at this tree and it is not used for active cultural services. Tatu City in coordination with CSKL is organising for this ceremony to take place.
Social issue: Coffee Plantation Resettlement/Displacement	During the development of Tatu City, there was only economic displacement (displacement of the coffee plantation); however, there were no communities that got displaced as a result of the economic zone development.
	According to the Community Liaison Officer – there are ~100 people that were affected by this economic displacement. Tatu City has provided for these people and their subordinates through exclusive free training and job opportunities for those affected.
	Majority of these displaced people are currently working in Tatu City construction projects and in Tatu City's coffee plantation (~5000 ha coffee farm).
	Tatu City is providing better compensation for its employees - currently, the minimum wage in Tatu City is 500 KSH/day whereas people who used to work in the coffee plantation were paid 30 KSH/16 kg of coffee picked.
	Those who were affected were mainly farmers who depended on Coffee picking as a source of livelihood. They were identified, trained and absorbed through employment within Tatu City for jobs such as carpenters, tailors, etc
Stormwater management	The stakeholders mentioned that Tatu City should implement a long-term solution for stormwater management since whenever it rains, some places flood and, stormwater damages roads and property. This issue became noticeable after converting the former coffee plantations into Tatu City and is likely to get worse as more plots within the estate get developed.
Corporate Social Responsibility (CSR)	As part of CSR, Tatu City should consider construction of a bridge and culvert to OJ-Kogeria Road to improve the drainage system/ management of stormwater especially during heavy storms.
Management of Negative Impacts	▪ Management of dust and noise emissions. ▪ GHG emissions ▪ Stormwater management/ drainage ▪ Potential of ammonia leakage and associated impacts. ▪ Waste Management with reference to potential organic waste and effluent management. ▪ Increased usage of the Tatu City Infrastructure. ▪ Smell of organic waste during operation. ▪ Occupational Health and Safety (OHS) diseases especially for those who will work in the cold storage facility for a long period.

All stakeholder comments were noted and were considered in the assessment of the Project at all phases. Where necessary, responses were given by both the ERM team and the Project Proponent present in the various meetings (refer to Appendix Dfor detailed minutes of the stakeholder engagement meetings).

8.3.3 Post ESIA Engagement

The Project is committed to continuous engagement with stakeholders throughout the life of the Project, from the current stages of planning and design, through construction into operation, and eventually to closure and decommissioning.

Plans and activities implemented during the next stages of Project planning and development will therefore feed into and inform on-going stakeholder engagement as the Project moves into these stages, ensuring that two-way dialogue with those affected, both positively and negatively by the proposed Project is maintained.

The aim will be to ensure that the Project remains in contact with all interested parties and cognisant of their concerns, and that these are addressed in an effective and timely manner. At each stage, a detailed schedule of activities and events will be developed and widely disseminated so that people know how to interact with and participate in the Project.

In particular, post ESIA stakeholder engagement is expected at the following Project stages:

- **Mobilisation phase:** At this stage, information regarding the exact locations of specific Project infrastructure, detailed construction schedule, expected construction team (including employment opportunities) will be shared with the Project stakeholders.
- **Construction phase:** Periodic Project updates as well as any changes in planning will be shared with Project stakeholders. The IFC PS also requires consultation with stakeholders and the implementation of a worker and community grievance mechanism (see Section 8.4).
- **Demobilisation phase:** Notifying the stakeholders the end of the construction activities and close-out of outstanding construction phase related grievances. This is also expected to mark the start of the operation phase.
- **Operations Phase:** Periodic updates to Project stakeholders on the operations issues, share operation information where required or deemed necessary and communicate any changes in operation plans. The IFC PS also requires consultation with stakeholders and the implementation of a worker and community grievance mechanism (see section 8.4).
- **Decommissioning Phase:** Inform stakeholders when the Project comes to an end as well as future plans for the Project Site.

8.4 Project Grievance Mechanism

In accordance with international good practice, the Project has established a specific mechanism for dealing with grievances. A grievance is a complaint or concern raised by an individual or organisation who judges that they have been adversely affected by a project during any stage of its development.

Further detail on the grievance mechanism process is outlined in the SEP in **Appendix C.**

9. ANTICIPATED IMPACTS AND MITIGATION MEASURES

The predicted impacts to the physical, biological and socioeconomic environment as a result of the Project are described in this *Chapter*. This *Chapter* also details potential mitigation measures in order to avoid, minimise, reduce, remedy or compensate for potentially negative impacts, and enhance potential benefits of the proposed Project. Furthermore, this *Chapter* provides a prediction of the residual impacts that will remain, assuming that the appropriate mitigation measures are implemented.

The development of mitigation/management measures and the management of residual impacts are fully described in the Environmental and Social Management and Monitoring Plan (ESMMP) (see Chapter 10). The methodology to identify and assess impacts is explained in Chapter 3.

The impact assessment laid out in this *Chapter* is as follows:

- Each section begins with the type of impact being assessed (e.g. *Section 9.2.1* – Impacts on local air quality, and *Section 9.2.2* – Impacts on the noise environment).
- Background information relating to the impact is then provided. This includes a description of the baseline environment that will be affected, the Project aspect or activities that will cause the impact and a description of the effected receptors.
- The significance of the impact pre-mitigation is then assessed and rated through use of a rating table.
- Following the pre-mitigation rating tables, a section describing the recommendations and mitigation/management measures proposed are provided.
- Once the recommended mitigation/management measures are provided, a residual impact (post-mitigation) is rated through use of a less detailed rating table.

Descriptions of impact assessment terminology are provided in *Chapter 3.*

***Note**: It is important to note that the positive impacts are not rated, they are merely stated. It is considered sufficient for the purpose of the Impact Assessment to indicate that the Project is expected to result in a positive impact, without characterising the exact degree of positive change likely to occur.*

9.1 Construction Related Impacts

9.1.1 Impacts on Local Air Quality

9.1.1.1 Description of the Baseline Environment

The Project Site is located in the developing TIP where a number of light industry projects have been established and in the neighbourhood of Ruiru Town. An air quality assessment conducted for the Strategic Environmental Assessment (SEA) in 2011, indicated that the ambient air quality of the Project Area is generally good as sulphur oxides (SO_X), nitrogen oxides (NO_X) and volatile organic compounds were determined to be below the thresholds of the World Health Organisation (WHO), World Bank and European Union air quality standards, with the exception of the north eastern and south eastern sections of the property, where poorer air quality was attributed to the nearby road (South east) and, steel manufacturing, and construction, amongst other already established industrial activities (north east).

9.1.1.2 Proposed Project Activities

During the construction phase, the main sources of air pollution will be earthworks and transport of construction materials along construction and other access roads, which will likely lead to a rise in nuisance and particulate dust.

In addition, exhaust emissions from construction equipment and machinery are expected to include CO_2, NO_2, SO_2 and Volatile Organic Compounds (VOCs) from diesel/ petrol engines.

9.1.1.3 Sensitive Receptors

The main sensitive receptors are the neighbouring facilities within TIP and construction workers. There are no affected households (residential areas) at the Project Site given its location in an industrial area, with the nearest settlements located approx. 1.7 km to the south of the Project Site. As such, these settlements are not likely to be affected by dust emissions from the Project site. Dust at the Project Site will be higher during the dry months.

9.1.1.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts on local air quality during the construction phase will be "**Minor Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impact		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The gaseous and dust emissions will be localised within TIP.
Duration	Short term	The effects of gaseous and dust emissions will cease shortly after the construction phase.
Scale	Medium	This impact will be manifested within the Project Site. However, if the emissions exceed the maximum levels permitted in the National Environmental Management and Coordination Act (Air Quality) Regulations, 2014 and IFC guidelines (*Chapter 3*) at source, this will pose health concerns to receptors, and will result in a breach of relevant legal requirements.
Frequency	Continuous	This impact will be manifested throughout the construction phase.
Magnitude		
Small Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium		
Although the Project site is devoid of settlements, there will be Project workers as well as well as receptors along access/ delivery routes that will be used.		
Significant Rating Before Mitigation		
Minor Negative		

9.1.1.5 Mitigation/Management Measures

- Develop and implement a grievance procedure (for both workers and other stakeholders) to manage any dust complaints.
- Where feasible, regular wetting or chemical treating of exposed open earthworks such as at the levelled and material laydown areas, may be required. Upon completion of earthworks, stabilization of temporary used surfaces (i.e., establishing vegetative cover as part of the landscaping activities, or placing ground cover) should occur as soon as possible.

- Regular wetting of construction access routes. This will not only lower dust levels but will improve visibility, and hence lower the risk of accidents.
- Vehicles to maintain speed limits imposed.
- The smallest possible area for cleared ground required for construction work should be exposed.
- Drop heights of material should be minimised, as far as reasonably possible.
- Soil and aggregate stockpiles should be managed in accordance with the mitigation / management measures provided for Impacts on Water Resources (refer to *Section9.1.3*).
- Where feasible and reasonable, vehicles that are compliant with recent emission standards (for example, EURO Tier 3) should be used. These vehicles should be maintained in reasonable working order. When not in use, vehicles should be switched off, unless impractical for health and safety reasons (for example maintenance of air conditioning).
- Construction equipment should be maintained and serviced on a regular basis to ensure that they function optimally and to reduce excessive emissions, this will also apply to all stationary generators utilised on site.
- Issue all Project workers appropriate Personal Protective Equipment (PPE) including dust masks where required.
- Develop and implement an appropriate Traffic Management Plan (TMP) throughout the construction phase.
- Keep neighbouring developments up to date with the construction programme and activities.
- Any spillages at the Project Site or along access routes should be cleaned up within a reasonable time in line with the spill response procedure to prevent secondary emissions.

9.1.1.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impact on local air quality will be a "**Negligible Negative Impact**" post mitigation per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The gaseous and dust emissions will be localised within TIP.
Duration	Short term	The effects of gaseous and dust emissions will cease shortly after the construction phase.
Scale	Small	The concentration of emissions will be kept below the maximum levels permitted in the National Environmental Management and Coordination Act (Air Quality) Regulations, 2014 and IFC guidelines (*Chapter 3*).
Frequency	Continuous	This impact will be manifested throughout the construction phase.
Magnitude		
Negligible Magnitude		
Significant Rating After Mitigation		
Negligible Negative Impact		

9.1.2 Impacts on the Noise Environment and Vibrations

9.1.2.1 Description of the Baseline Environment

The Project Site is located in a light industrial park where potential sources of noise and vibrations include light motor traffic along access roads and construction activities at other sites within the TIP.

The ambient noise within the Project Area is therefore influenced by the light industrial construction activities at a number of sites within the SEZ currently.

9.1.2.2 Proposed Project Activities

The main source of noise and vibrations will be attributed to construction machinery and construction vehicles that will be used during the construction phase as well as other onsite construction activities. There will be no blasting at the Project Site; the required gravel will be obtained from available commercial suppliers. Soil required for fill material will be obtained from elsewhere on the site.

No construction activities will take place at night.

9.1.2.3 Sensitive Receptors along the Project Road

TIP in which the Project Site is located is devoid of settlements, so the main noise sensitive receptors will be Project workers and workers at neighbouring light industrial developments.

9.1.2.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts on the noise environment during the construction phase will be "**Minor Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The noise and vibration impacts are expected to be limited within the TIP.
Duration	Short term	This impact will cease as soon as the construction activities are completed.
Scale	Moderate	The noise and vibrations generated will likely exceed the maximum levels permitted in the National Environmental Management and Coordination Act (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 and IFC guidelines (*Chapter 3*) on the Project site, but will be lower at the Project boundary.
Frequency	Continuous	Noise and vibrations will be generated throughout the construction phase (daytime); however, no noise will be generated at night since construction activities are expected to be limited to daytime activities only.
Magnitude		
Medium		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Low		
The sensitive receptors will mainly comprise of construction workers and other workers at the neighbouring light industries within the TIP		
Significant Rating Before Mitigation		
Minor		

9.1.2.5 Mitigation/Management Measures

General Measures

The following mitigation measures are recommended to keep the noise and vibration levels below the applicable national standards:

- Develop and implement a grievance procedure in the event of any noise and vibration impact complaints being received.
- A one-page summary of applicable noise criteria that relate to relevant work practices and nearby receptors should be developed. This summary should be placed on a noticeboard so that all site workers can quickly reference noise information.
- Site management should periodically check the site and nearby developments for noise and vibration related issues so that solutions can be efficiently and timeously applied.
- Periods of respite should be provided in the case of unavoidable exposure to high noise level events. These respite periods should be negotiated with the affected receptors.
- Regular inspection and maintenance of all machinery and vehicles.
- Installation of silencers or acoustic enclosures on machinery, where applicable, such as installation of suitable mufflers on engine exhausts and compressor components as well as the use of portable sound barriers around noisy equipment like generators.
- As far as reasonably possible, avoid or minimise Project traffic routing through community areas and the implementation of speed limits for all construction vehicles. This needs to be stipulated in a Traffic Management Plan.
- Limiting hours of operation for specific equipment or operations (e.g. trucks or machines). In particular, limit use of heavy construction machinery to daytime only (06:01 am – 8:00 pm).
- Restrict noise levels at the property boundary to 70 dB LAeq during the day and night, in conformance to Kenyan regulations.
- Noise monitoring against the performance criteria presented above should be implemented if persistent noise complaints are received.
- All employees are to be provided with, and are to wear, appropriate hearing protection such as earmuffs and earplugs where necessary.
- Avoid idling of Project vehicles and equipment when not in use.

9.1.2.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impact on the noise environment will remain a "**Minor Negative Impact**" post mitigation per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The noise and vibration impacts are expected to be limited within the TIP
Duration	Short term	This impact will cease as soon as the construction activities are completed.
Scale	Low	The noise and vibration levels on the property boundary is likely to be less than 70 dB(A) – to be confirmed by monitoring, and in conformance to the National Environmental Management and Coordination Act (Noise and Excessive Vibration Pollution) (Control) Regulations, 2009 and IFC guidelines.
Frequency	Intermittent	Noise and vibrations will only be generated when Project equipment and machinery are being operated. No Project associated noise will be generated at night.
Magnitude		

Small
Significant Rating After Mitigation
Minor

9.1.3 Impacts on Water Resources

9.1.3.1 Description of the Baseline Environment

There is no river or stream at the Project Site. However, Syngenta Flowers Dam is located approximately 900 metres south of the Project Site. Syngenta Dam and other dams in the Project Area are drained by the Tatu River and its tributaries. Due to the land use in the Project Area, which is mainly industrial and previous farming activities, the quality of the water in the dams is poor, with high turbidity.

9.1.3.2 Proposed Project Activities

The construction phase will be associated with earthwork activities. Earthworks will involve excavations and levelling, stock piling and dumping, in some cases. The working and movement of soil will loosen it and facilitate potential water and wind erosion. Water erosion, through surface run-off, carries with it sediments, which may be deposited into the nearby Syngenta dam during rainy seasons or further into the Tatu River and its tributaries, impacting on water quality and causing sedimentation. However, given the small size of the Project Site (a maximum of 6 Ha) on a plain area, excavated materials will be in small quantities.

Typical to the magnitude of construction activities, small and heavy trucks as well as heavy machinery will be utilised for earthworks and material and equipment transport. These machines may have oil and grease leaks during use; refuelling or minor maintenance that may be done on site, causing contamination of the soils and surface waters. Through run off, and percolation, the oil-contaminated waters may flow into the adjacent Syngenta dam, or infiltrate into the aquifer and contaminate ground water. The quality of these water sources would therefore be degraded, potentially causing associated health risks to the users.

Construction wastes of concern will vary from non-hazardous solid wastes, contaminated solid wastes and hazardous liquid wastes. Most of these wastes, other than the aesthetic impacts they cause, may be carried off site by wind action, surface run off or percolation, into the nearby Syngenta dam, or infiltrate into the groundwater aquifer, affecting their quality.

The Project's water requirements will be small quantities during the construction phase and will either be sourced from water storage tanks already installed within the wider Tatu City(Tatu City is responsible for the supply of water within the SEZ). For the Project, water demand is relatively low, at 60 m^3 for daily cooling water demand, and other smaller quantities of water required for ablution facilities and food processing activities.

9.1.3.3 Sensitive Receptors

The main sensitive receptors of any potential water quality impact are the Syngenta Dam as well as other dams and the River Tatu and its tributaries in the wider Project Area. The impact of the Project on water availability will be negligible.

9.1.3.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts on water resources during the construction phase will be "**Minor Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact
Direct Negative Impact
Rating of Impacts

Characteristic	Designation	Summary of Reasoning
Extent	Regional	Any negative impacts on the Syngenta Dam and other dams as well as Tatu River and its tributaries in the Project Area are of a regional concern since they are not limited to the Project Area.
Duration	Medium term	Once contaminated, the effects of this impact will continue to be manifested after the construction phase.
Scale	Medium	The scale of this impact is dependent on the type of water contaminants as well as their concentrations.
Frequency	Continuous	Continuous during the construction phase.
Magnitude		
Small Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium Sensitivity		
Syngenta Dam and other dams as well as Tatu River and its tributaries in the Project Area		
Significant Rating Before Mitigation		
Minor Negative Impact		

9.1.3.5 Mitigation/Management Measures

- Communicate all the construction related plans and schedules to the local Project stakeholders prior to the commencement of the construction activities.
- Regularly maintain the Project equipment as per the manufacturer's instruction to avoid the possibility of any leaks and spills.
- Liaise with the management of Tatu City on wastewater discharge and stormwater management requirements given that this is the responsible institution for its management in the wider SEZ.
- Method Statements detailing spill emergency response and clean-up procedures for spills should be developed.
- Training regarding proper methods for transporting, transferring and handling hazardous substances that have the potential to impact surface and groundwater resources, should be undertaken.
- Areas where spillage of soil contaminants occurs should be excavated (to the depth of contamination) and suitably rehabilitated. If any other minor spillage occurs, it should be cleaned as soon as possible, but within the same shift and the contaminated area should be reinstated. All contaminated material should be suitably disposed of.
- The ad hoc maintenance, with the exception of emergency repairs; of vehicles in and around the Project Site should be prevented, as far as reasonably possible. All major services and ad hoc maintenance of vehicles and equipment should be done at a designated workshop. The workshop should be properly constructed to prevent pollution and should as far as reasonably practical include containment berms and an oil/grease trap.
- All construction areas and associated facilities should be maintained in a good and tidy condition; debris and wastes should be contained in such a way that they cannot become entrained in surface runoff during periods of heavy rain.
- Where practical, exposed surfaces and friable materials should be covered/sheeted.
- Sufficient portable toilets at active work areas should be provided for site staff and workers and these should be serviced regularly by a competent and suitably qualified person.

- The sewage treatment/ containment system should be managed in a manner that results in zero discharge of raw sewage to the environment, and if treated sewage is discharged into the environment then this should conform to recognised Kenyan discharge standards prior to discharge.
- All wastewater which may be contaminated with oily substances should be managed in accordance with an approved Waste Management Plan, and no hydrocarbon-contaminated water should be released into the environment.

Specific Measures – Flow (including stormwater water)

- Project infrastructure should be designed and located to minimise the impacts to natural water flow.
- Connect stormwater channels from the Project Site to the main stormwater ducts established by Tatu City.
- Ensure protection of soil adjacent to the side drains and the constructed drainage facilities.
- Spoil/excavations should be visually assessed to determine if it is contaminated. In the event that the spoil is contaminated, it should be handled as a hazardous material and disposed of under supervision and into controlled dumping areas.

9.1.3.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impact on water resources will be a "**Negligible Negative Impact**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Regional	Any negative impacts on Syngenta Dam and other dams as well as Tatu River and its tributaries in the Project Area will be of a regional concern
Duration	Short term	Any residual impacts in water resources will cease to be manifested after the completion of the construction phase.
Scale	Low	The scale of this impact is dependent on the type of water contaminants as well as their concentrations.
Frequency	Occasional	This impact will be manifested whenever working near the dams
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Negligible Negative Impact		

9.1.4 Impact on Soils

9.1.4.1 Description of the Baseline Environment

The soils of the Project Area and Project Site in particular, are red soils known to be of moderate fertility. However, given that the Project Site is located in a gazetted mixed use SEZ, where the approved land use is construction and operation of light industries; soil fertility is not of value or applicable in this case.

9.1.4.2 Proposed Project Activities

Preparation of the Project Site for the construction of the Project will require vegetation clearance, site levelling (site observations indicated that the management of Tatu City has already started levelling activities guided by the SEA and EIA approvals already obtained for the wider industrial areas),

grading and soil compaction. Given that the Project Site is located on a plain with a very gentle slope, Site observations indicated that levelling is achievable using soil excavated/cut from within the Project Site and will not require importation of soil except for specific construction materials such as gravel and aggregates which will be sourced from operational commercial quarries.

Vegetation cover is an important physical factor that influences soil erosion. Intact vegetation cover reduces the impact of raindrops or wind action on the soil, slows down the rate of surface runoff allowing for percolation, filters sediment load in the surface runoff and binds the soil together providing stability. Vegetation clearance will likely leave the surface soils prone to rain and wind erosion. However, much of the Project Site will be covered by the warehouse and the remaining surfaces such as parking areas paved while the rest of the compound will be planted with landscaping plants.

In addition, excavation activities are known to alter the soil's physical properties like structure, aeration and porosity, all of which affect soil fertility; however, given that the Project Site is located in an industrial area, soil fertility within the Project footprint is not an issue of concern.

9.1.4.3 Sensitive Receptors

The sensitive receptor for this impact is the soils within the Project footprint; however, given that the Project Site is located within an approved industrial area where construction and operation of light industries is expected; they are of negligible sensitivity.

9.1.4.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts on soils during the construction phase will be "**Negligible**" pre-mitigation and has therefore not been discussed further.

9.1.5 Impact on Biodiversity

9.1.5.1 Description of the Baseline Conditions

The habitats in the Project Area are highly modified by human activities particularly, previous farming activities and, urbanisation and industrialisation. It therefore does not contain any important biodiversity habitats and not of any conservation concern.

However, *Lantana camara*, an invasive alien plant species (IAPs), was identified at the Project Site. The Convention on Biological Diversity (CBD) defines an invasive alien species as one that is established outside of its natural past or present distribution, and whose introduction and/or spread threatens biological diversity (10). The IUCN Red List of Threatened Species (11) rates the presence of invasive alien species globally as the second most significant threat to biodiversity, (12) and there is a growing global awareness of the problems associated with alien and invasive species. Alien species can be introduced either accidentally or intentionally. Although only a small percentage of alien species have the potential to become invasive, their impact is marked and usually is irreversible, displacing native species and leading to degradation of habitats. However, given that the Project Site is not of any conservation concern, the threat of the identified *Lantana camara* is low provided that materials (wastes) from the Project Site are not transported to conservation areas.

A *Mugumo* tree which is of cultural value was also identified at the Project Site; however, given its cultural importance, impacts on it are assessed in detail under Section 9.1.11.

(10) Convention for Biological Diversity, invasive species page. Available at: https://www.cbd.int/invasive/WhatareIAS.shtml

(11) IUCN Red List of Threatened Species. Available at http://www.iucnredlist.org/

(12) IUCN Website, invasive species page. Available at: https://www.iucn.org/theme/species/our-work/invasive-species

9.1.5.2 Proposed Project Activities

Construction activities will include vegetation clearance to pave way for the construction of the Project infrastructure. Wastes from the Project Site (including small volumes of soil and vegetation) will be collected and disposed of at identified disposal Sites off-site (13).

9.1.5.3 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, the impacts on biodiversity will be a "**Minor Negative Impact**" pre-mitigation as summarised below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The impacts on biodiversity are expected to be restricted to the construction footprint and material/waste disposal sites.
Duration	Long Term	Many infestations of IAPs are extremely persistent once established, unless active control measures are implemented.
Scale	Large	The identified *Lantana camara* presents a risk of being spread. Without proper control, IAP infestation can be on a large scale.
Frequency	Constant	IAP infestation will occur constantly on disturbed sites and will multiply if inadequately controlled.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Low Sensitivity		
The Project Site is not of conservation value		
Significance Rating Before Mitigation		
Minor Negative Impact		

9.1.5.4 Mitigation/Management Measures

Control Measures for Invasive Plant Species

- All alien vegetative and/or seed-bearing material that is removed should be burnt on Site to prevent the distribution of seed.

Landscaping Measures

- In liaison with the management of Tatu City, appropriate landscaping plants should be planted in the compound of the Project as per the DCC guidelines. Where possible, landscaping should be done with indigenous plant species. Exotic and ornamental plants must be avoided.
- 5% of the plot surface will be planted. Planting with indigenous species will also lessen water use.

(13) The Impact of wastes and effluents assessed in details in Section 9.1.6

9.1.5.5 Residual Impact (Post-mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impacts on biodiversity will be a "**Negligible**" post mitigation as per the summary below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The impacts on biodiversity are expected to be restricted to the construction footprint and material/waste disposal sites.
Duration	Short Term	Effective control measures will reduce the duration of infestation by IAPs.
Scale	Negligible	With adequate management measures in place, the extent of this impact will be reduced to negligible levels.
Frequency	Unlikely	With the implementation of the management measures, the impact on biodiversity is unlikely to happen.
Magnitude		
Negligible		
Significance Rating After Mitigation		
Negligible		

9.1.6 Waste and Effluent

9.1.6.1 Description of the Baseline Environment

Liquid waste for the facilities within the Project Area is discharged directly to the Special Economic Zone (SEZ) Sewer System. The sewers in Tatu City will be connected to the Ruiru-Juja Water and Sewerage Company network in the future. Tatu City is already in discussions with the management of this water and sewerage company in this respect.

9.1.6.2 Proposed Project Activities

The Project activities will be associated with a number of wastes ranging from general construction packaging waste including pallets and plastics from construction materials, electrical and mechanical equipment, earth material from excavations, hazardous waste such as paint residues and any fuel or oil leakages) and domestic waste that will be generated during the construction process.

In addition, effluent waste will be generated in the form of both grey and black water by the construction workforce.

If the generated waste is not well managed, it will cause a nuisance and become of a hygiene concern in the Project Area.

9.1.6.3 Sensitive Receptors

The sensitive receptors to poor waste and effluent management will be other developers within the Project Area as well as the Syngenta Dam and river downstream.

9.1.6.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impact of effluent and waste management during the construction phase will be "**Moderate Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	This impact will only be manifested within the Project Area.

Duration	Medium term	If appropriate waste management measures are not put in place, the impacts of poor waste and effluent management will continue to be manifested even after the construction phase.
Scale	Medium	The scale of this impact refers to the amount of waste that is likely to be generated.
Frequency	Daily	Wastes will be generated daily throughout the construction phase.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium		
Any poor waste management practices will be of a major concern in the Project Area.		
Significant Rating Before Mitigation		
Moderate Negative Impact		

9.1.6.5 Mitigation/Management Measures

- Spoil generated should be disposed of on pre-identified and approved locations (impact assessment should be completed for the locations if not already approved).
- A Waste Management Plan (WMP) will be produced for the construction phase or the one for the wider Tatu City adopted if deemed appropriate:
    - following the principles of:
        - waste minimisation at source,
        - segregation for reuse,
        - recycling, and
        - safe disposal of waste through a NEMA waste approved contractor.
    - With detailed measures stipulated such as:
        - using waste minimisation techniques;
        - allocating responsibilities for waste management;
        - identifying all sources of waste;
        - ensuring wastes are handled by personnel licensed to do so especially in the case of hazardous waste;
        - making suitable facilities available for the collection, segregation and safe disposal of the waste, also ensuring wastes are not blown off site by wind contributing to wind-blown litter in the area;
        - creating waste collection areas with clearly marked facilities such as colour coded bins and equipment for handling the various waste types; and
        - The collection of wastes that cannot be reused or recycled to be collected by approved waste contractors and transferred to an appropriate waste management facility for treatment and ultimate disposal (NEMA licensed).
- Construction vehicles and equipment will be serviced off site at designated and approved servicing locations.

- The use, storage, transport and disposal of hazardous materials used for the Project will be carried out in accordance with all applicable Kenyan regulations, and Material Safety Data Sheets (MSDS). As Kenya does not have a specific hazardous waste facility, any hazardous wastes to be disposed of should be documented beforehand, treated as per any requirements of the MSDS sheets, and disposed of in consultation with the County Authorities and via NEMA approved waste handlers.
- Tatu City has contracted a company Greenleaf Services, a NEMA licensed waste management company, for the management of waste from the Tatu City SEZ. Depending on the waste types, Greenleaf Services and its sister company, Zoa Taka, will sort out recyclable waste and liaise with competent recycling operators to have such waste recycled, for example at the pyrolysis waste recycling plant in Thika Sub county. Occasional audits to monitor company performance should be undertaken by the Project proponent.
- The Contractor will be required to supply the required temporary ablution facilities and be responsible for the treatment and/or removal of sewage wastes off site. The Contractor will also be required to ensure that any sub-contracting company is accredited and has the necessary NEMA permits to remove transport and dispose of waste.
- All construction laydown areas shall comply with the Project Waste Management Plan (WMP) and be provided with appropriate waste handling equipment.
- In line with the requirements of the Waste Management Regulations, any generated hazardous waste should be transported and managed by NEMA permitted hazardous waste handlers.

9.1.6.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impact of waste and effluent management will be a "**Minor Negative Impact**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	This impact will only be manifested within the Project Area.
Duration	Short term	With application of appropriate waste and effluent management measures, the impact of waste and effluent management will cease to manifest shortly after the construction phase.
Scale	Low	The scale of this impact refers to the amount of waste that is likely to be generated. With the application of appropriate waste management measure including the application of the waste management hierarchy, less waste will be generated.
Frequency	Daily	Wastes will be generated daily throughout the construction phase.
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Minor Negative Impact		

9.1.7 Impacts on Employment, Procurement and the Economy

9.1.7.1 Description of the Baseline Environment

The TIP is already an operating industrial zone. The neighbouring Ruiru community have benefited significantly from employment in Tatu City including construction training as well as works at other industries in Ruiru Town. Therefore, there is availability of labour in the Project Area, particularly in the

categories of unskilled and semi-skilled labour. Tatu City require of their contractors to employ within the local and surrounding communities as a priority.

Additionally, materials for construction can be sourced from within Kenya, particularly, in Ruiru Town and Nairobi City, further benefiting the local economy.

9.1.7.2 Proposed Project Activities

The proposed Project will create both direct and indirect employment opportunities across different skills levels (unskilled, semi-skilled). According to the current estimates, the construction workforce will vary at different times during construction but will have a peak on site of approximately 30 people during the superstructure construction. Discussions with Tatu City Training Academy revealed that they have been training potential construction workers from the local community; therefore, the required Project labour is available locally. The Project proponent and any EPC Contractor's will be required to coordinate with the Tatu Academy with respect to the hiring of local labour.

Impacts from the Project include:

- Direct employment opportunities.
- Indirect employment generated by the procurement of construction materials, and other goods and services for the Project.
- Induced employment related to jobs ensuing from the expenditure of incomes associated with direct and indirect Project related jobs.

9.1.7.3 Sensitive Receptors

The inhabitants of communities around Tatu City, especially the neighbouring Ruiru Town will be able to benefit from direct and indirect employment opportunities and the supply of the required goods and services, especially those who have received training from the Tatu Academy on construction related activities.

9.1.7.4 Impact Summary (Pre-enhancement)

Type of Impact
Positive Impact
Direct and indirect employment opportunities and the procurement of construction materials, goods and services, and combined multiplier effect of this economic growth will result in increased incomes for successful candidates and their local communities; promoting some degree of an increase in standards of living.

9.1.7.5 Enhancement/ Management Measures

In order to enhance this positive impact, the following management measures will be implemented:

- The contractor will prioritise the recruitment of workers (unskilled, semi-skilled) from the local communities around Tatu City where available, and in accordance with CSKL Local Content Policy, and in conjunction with Tatu City's Training Academy and Community Liaison Team.
- The contractor will adhere to CSKL's equal Opportunities and Diversity Policy that prevent any form of nepotism and favouritism.
- The Contractor will notify identified representatives of the County Government and Local Administration (i.e. the Area Chief) of the specific jobs and the skills required for the Project, during the recruitment process.
- Advertisements on the employment and procurement opportunities during the construction phase will be placed at the Chief's Office notice board and at the Training Academy, and applications are to be done through Tatu City and the training Academy. In the event that the

position cannot be filled from within the Project Area, it will be advertised further county-wide then nationally.

- No recruitment is to take place on the Project site. This is particularly important with respect to casuals.
- The Contractor will aim at procuring locally available materials where feasible and use local suppliers where appropriate.

9.1.8 Impact on Disease Transmission

9.1.8.1 Description of the Baseline Environment

The major causes of morbidity in the County that is also mirrored in the Project Area are respiratory diseases, diseases of the skin, diarrhoea disease, urinary tract infection, and hypertension. HIV prevalence rate in the County is at 5.6% according to the 2016 estimates which ranks it the sixth county with a high prevalence rate in the country. At the time of preparing this report, the COVID-19 pandemic poses a major health risk, both within Kenya and globally.

9.1.8.2 Proposed Project Activities

Construction of the proposed Project may lead to an increase in communicable and sexually transmitted diseases including HIV/AIDS, mainly as a result of interactions between Project workers as well as those between Project workers and the local community members. However, for the proposed Project, most of the workers will be recruited from the local communities thus limiting labour influx which would exacerbate this issue.

Another important health risk at the moment is the COVID-19 pandemic which has become a global health challenge including in Kenya. There is a risk of increasing its spread amongst the Project workers and their contacts if construction activities commence during the period when COVID-19 is expected to peak.

In addition to increases in disease prevalence related to direct interactions with the workforce, absence of adequate sanitation could contribute to an increased incidence of infectious disease, in particular, water borne diseases. Construction activities, if resulting in increased dust levels, may exacerbate respiratory illnesses which is already a challenge in the County.

9.1.8.3 Sensitive Receptors

The receptors of increased disease transmission will be the neighbouring community of the TIP as well as Project workers.

9.1.8.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts on disease transmission during the construction phase will be "**Moderate Negative**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	It is anticipated that the potential impacts of increased disease transmission will have impacts will be limited to the Project Area.
Duration	Short-term	The impacts identified are expected to be linked to the construction period and therefore short-term.
Scale	Medium	Any increase in disease transmission will result in negative impacts to the health system.

Frequency	Intermittent	The incidence of communicable disease is likely to recur in the absence of mitigation and monitoring measures.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium Sensitivity		
Vulnerability of receptors is dictated by the local people not having access to sexual health and family planning services, the current prevalence of disease, the health status of receptors as well as the limited access to health care.		
Significant Rating Before Mitigation		
Moderate Negative		

9.1.8.5 Mitigation/Management Measures

- The Contractor will prepare a COVID-19 response and management plan based on a risk assessment considering international guidance, e.g. from World Health Organisation (WHO), and in accordance with Kenyan regulatory requirements.
- Workers should receive awareness training as part of their induction and then at least every 6 months on potential high risk communicable and vector borne diseases, symptoms, preventative measures and transmission routes as well as treatment options. This will be particularly important for diseases with which non-local workers are unfamiliar and in case of any emerging disease outbreaks.
- In the event of a new disease, increased transmission or outbreak compared to the baseline, the Contractor should interact with local health care facilities and workers to ensure there is an appropriate response in place to make workers aware and to ensure proper precautionary measures are implemented.
- The Contractor will adhere to CSKL's Supplier Code of Conduct providing a worker code of behaviour including worker-worker interactions, worker-community interactions and development of personal relationships with members of the local communities.
- Given the expected small number of Project numbers (at most 30 workers during the construction phase), provision of accommodation by the Project Proponent will not be provided. As most construction workers will be sourced from the local community, it is envisaged that workers will commute to work and back. Any workers not from the local area, will be expected to source their own accommodation.
- The following will be implemented at a minimum in order to minimise disease transmission:
    - Providing workers with appropriate sanitary facilities, which are appropriately designed to prevent contamination.
    - Developing a robust waste handling system to avoid the creation of new vector breeding grounds or attracting rodents to the area.
    - Implementing measures to reduce the presence of standing water onsite through environmental controls and source reduction to avoid the creation of new breeding grounds.
    - Ensuring appropriate food preparation and monitoring measures are in place.
- The workforce will be provided with access to selected treatment at health facilities at or near the Project Site as deemed necessary for this Project. The requirements for these health facilities should be based on a risk assessment considering access to existing health facilities and travel

time to facilities that offer international standards of care. Access to health care should include direct employees, and sub-contractors working on site.

- Pre-employment screening protocols will be put in place within the framework of equal opportunities and non-discrimination. This should include pre-employment medicals and follow up medicals as appropriate. The screening protocols should consider heath conditions related to the nature of the work undertaken, employee residential details and legal requirements. Workers should not be denied employment on the basis of the outcomes of the screening but should be provided treatment or alternative roles as appropriate.
- The Project should prepare and implement a communicable disease management plan during the construction phase. This plan should be explained clearly to the workforce.
- No recruitment is permitted on the construction site. This will serve to prevent in migration of work seekers from outside the local area.

9.1.8.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impact on disease transmission will be a "**Minor Negative**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	This impact will be limited to the Project Area.
Duration	Low	With the implementation of the mitigation measures, community and worker exposure to diseases attributed to the Project will be avoided or effectively controlled within a short period of time.
Scale	Low	With the implementation of the mitigation measures, the increase in disease prevalence attributable to the Project will be avoided.
Frequency	Rare	The incidence of communicable diseases and other diseases attributable to the Project will be avoided or only occur rarely.
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Minor Negative Impact		

9.1.9 Traffic Impacts

9.1.9.1 Description of the Baseline Environment

The business district of Ruiru is well connected with tarmac roads which connects it to major towns in the region that include Nairobi (Kenya's Capital City), Thika, Gatundu, Juja and Kiambu. Existing traffic along these roads is regulated as per the Traffic Act (Cap 402, Revised in 2013 and 2015) and the Traffic (Amendment) Act of 2017.

Within Tatu City, the management has constructed a network of access roads and currently has very light traffic, mainly limited to operations within the developing Tatu City.

9.1.9.2 Proposed Project Activities

During the construction phase, various trucks will be expected to deliver materials such as cement, sand and gravel as well as warehouse super structures, internal structures and electro-mechanical components. These trucks will be using the available local and wider road network and regulated as per the Traffic Act (Cap 402, Revised in 2013 and 2015) and the Traffic (Amendment) Act of 2017. Although the existing road network is open to traffic and will thus be serving its purpose, increased

traffic due to transportation of the required Project materials and equipment has a potential of slowing down road traffic along the routes that will be used.

The risk of injuries from road traffic accidents are generally low but may increase during civil construction work (including site mobilisation and demobilisation) associated with the movement of equipment and people by road. However; given that there are no settlements within TIP, human presence within the TIP will largely comprise of workers at the different projects within the TIP.

The increase in traffic could also create dust, noise(14) and safety (including injury or even death due to accidents) impacts for other road users and people living or working within close proximity to the roads on the selected transport routes. Traffic impacts will be further exacerbated if the selected equipment and/or delivery routes are through neighbouring Ruiru Town which is already a highly populated and active area.

9.1.9.3 Sensitive Receptors

The receptors for traffic impacts will be the existing users of the roads that will also be used during the transportation of Project equipment, machinery and workers.

9.1.9.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, traffic impacts during the construction phase will be "**Moderate Negative**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	To a great extent, traffic impacts will be limited to the Project Area and its environs; however, it is understood that some of the required Project components such as electrical and mechanical equipment will be imported from overseas. Increased traffic attributed to transportation of project equipment along major in-country highways will be negligible since such highways are already approved and continuously used for transportation of large volumes of goods in addition to general transport services.
Duration	Short term	This impact will cease to be manifested after the completion of the construction phase.
Scale	Medium	Given the highly urbanised and industrial nature of Ruiru Sub-county, a big number of people will be potentially affected; however, this will be largely dependent on the selected transportation routes.
Frequency	Continuous	This impact will be continuously felt throughout the construction phase.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium Sensitivity		
Traffic impacts will inconvenience the current road users and businesses along them.		
Significant Rating Before Mitigation		
Moderate Negative Impact		

(14) Impacts of dust and noise are assessed separately in Sections 9.1.1 (Impacts on Local Air Quality) and 9.1.2 (Impacts on the Noise Environment and Vibrations).

9.1.9.5 Mitigation/Management Measures

- In consultation with the County Transport and Safety Committee and the management of Tatu City, develop and implement a Traffic Management Plan covering the routes to be used by the contractor vehicles, vehicle safety, speed limits on roads, minimum driver qualifications and experience, driver and passenger behaviour, use of drugs and alcohol, hours of operation, rest periods and location of rest stops, and accident reporting and investigations.
- Prepare and implement an appropriate community Grievance Redress Mechanism (GRM). The GRM should be communicated to all the local community members and neighbours around the TIP.
- As much as possible, avoid transportation of Project equipment and materials through busy trading centres and towns by using by-passes as appropriate.
- Regularly maintain Project vehicles and equipment as per the manufacturers' recommendations.

9.1.9.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of traffic impacts will be a "**Minor Negative**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	To a great extent, traffic impacts will be limited to the Project Area and its environs; however, it is understood that some of the required Project components such as electrical and mechanical equipment will be imported from overseas. Increased traffic attributed to transportation of project equipment along major in-country highways will be negligible since such highways are already approved and continuously used for transportation of large volumes of goods in addition to general transport services.
Duration	Short term	This impact will cease to be manifested after the completion of the construction phase.
Scale	Low	With the implementation of the mitigation measures, the number of affected persons will be low.
Frequency	Regular	With the scheduling of the Project Activities, noticeable traffic impacts will occur regularly; only during scheduled transportation of Project materials and equipment.
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Minor Negative Impact		

9.1.10 Labour and Working Conditions (Including Occupational Health and Safety)

9.1.10.1 Description of the Baseline Environment

Same as in Section 9.1.7.

9.1.10.2 Proposed Project Activities

Same as in Section 9.1.7.

9.1.10.3 Sensitive Receptors

Sensitive receptors will be Project employees. Given the industrial nature of the Project Area, and the fact that some of these workers will have previously worked at already completed projects in the TIP as well as in the neighbouring Ruiru Town, these workers will at least have a fair understanding of general construction conditions and common construction related OHS risks and how they can be minimised.

Labour and working conditions, including occupational health and safety, will need to be considered to avoid any occupational incidents and/or injuries. Issues that need to be considered include: fair treatment of workers, non-discrimination, equal opportunities, as well as the provision of a safe and healthy working environment. These issues should be considered not only for those employed directly by the Proponent, but also employees of the Contractor and any other sub-contractors during the construction phase.

Without careful OHS management, the workforce employed may be exposed to occupational health and safety risks, potentially resulting in occupational accidents and injury or death.

Labour laws in Kenya are aligned with international labour laws, and Kenya has ratified seven of the eight core(15) ILO conventions, including:

- Right to Organise and Collective Bargaining Convention, 1949 (No. 98);
- Forced Labour Convention, 1930 (No 29);
- Abolition of Forced Labour Convention, 1957 (Mo 105);
- Minimum Age Convention, 1973 (No 138);
- Worst Forms of Child Labour Convention, 1999 (No 182); and
- Equal Remuneration Convention, 1951 (No 100); and
- Discrimination (Employment and Occupation) Convention, 1958 (No 111).

It is important to note that while the labour laws exist, there are issues with regards to their implementation. Also due to the lack of employment in Kenya, workers are willing to sacrifice their rights in order to secure employment. There is therefore the risk that the Contractor and sub-contractors will not operate in line with international best practice if measures to manage such risks are not enforced.

With regards to on-site worker welfare, the Contractor will be required to adhere to IFC PS 2: Labour and Working Conditions, Kenyan Labour Law and the ratified ILO conventions.

9.1.10.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts to exposure of the workforce to poor labour and working conditions will be a "**Moderate Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact
Direct Negative Impact
Rating of Impacts

(15) Kenya has not ratified the 'Freedom of Association and Protection of the Right to Organise Convention', 1948 (no 87)

Characteristic	Designation	Summary of Reasoning
Extent	Local	The impact is only relevant for the workforce (including direct, third party and supply chain workers) all of whom are at a local level (although a few of them may come from elsewhere in Kenya or globally).
Duration	Short term	Generally, the implications of inadequate labour and working conditions will cease to manifest after the construction phase; however, some of the effects such as major injuries will continue to affect the concerned individuals.
Scale	Large	This impact will affect a proportion of the 30 workers estimated to be employed at the Project during the peak of the construction phase. Some of the emanating impacts such as major injuries can be severe including loss of life which can significantly affect households and communities ability to maintain their quality of life and livelihoods.
Frequency	Intermittent	Impact is likely to recur / occur intermittently throughout the construction phase.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium Sensitivity		
Receptors to this impact will include those contracted or subcontracted to work on the Project. The Project workers will be highly sensitive to any inadequate labour and working conditions if this happens at the Project.		
Significant Rating Before Mitigation		
Moderate Negative Impact		

9.1.10.5 Mitigation/Management Measures

Management System

- The contractor should develop and implement an Occupational Health and Safety Management System in line with good industry practice, including the requirements of the IFC Performance Standard 2, and in accordance with Kenya's Occupational Health and Safety Act (OSHA). This OH&S system will need to consider hazard identification, risk assessment and control, use of Personal Protection Equipment (PPE), incident investigation and reporting, reporting and tracking of near misses, incidents etc. The management system will also include emergency response plans that tie in with existing emergency response procedures of the TIP. Roles and responsibilities for the implementation of the OH&S Plan should be clearly defined.
- The contractor will have a Human Resources Policy in place that adheres to the requirements of the IFC Performance Standard 2, Kenyan Law and the ILO Core Labour Conventions, to which Kenya is a signatory. The HR policy will include a Labour and Employment Plan, conditions of employment and Worker Grievance Mechanism. These requirements will also be passed on to any sub-contractors. Key aspects of the HR policy which should be included, are the following:
  - Provision of clear and understandable information regarding rights under national labour and employment law, and any applicable collective agreements, including those related to hours of work, wages, overtime, compensation, etc;
  - Provision of reasonable working conditions and terms of employment;
  - Provision of employment , compensation/remuneration and working conditions, including working hours, based on equal opportunity and fair treatment, avoiding discrimination on any aspects;
  - Provision of adequate welfare facilities on site;
  - Implementation of a grievance mechanism;

- Adoption and implementation of a sexual harassment policy; and
- Adoption of an open attitude towards freedom of association.

Contractor Management

- In all contracts, explicit reference should be made to the need to abide by Kenyan law, international standards (in particular IFC PS2), ratified ILO conventions and the Proponent's policies in relation to health and safety, labour and welfare standards.
- As part of the contractor and supplier selection process, the CSKL will take into consideration performance with regard to worker management, worker rights, and health and safety as outlined in Kenyan law and international standards.
- Regular checks should be undertaken to ensure the relevant labour laws and occupational health and safety plans are adhered to at all times.
- All workers (including those of contractors and subcontractors) should, as part of their induction, receive training on health and safety and should receive updated training routinely, as well as when undertaking new tasks, such as working at heights or working in confined spaces.
- Daily toolbox talks will be held with the Project workers to discuss the health and safety risks associated with the tasks at hand.

Workers' Rights

- The Contractor should put in place hiring mechanisms to ensure no employee or job applicant is discriminated against on the basis of his or her gender, marital status, nationality, ethnicity, age, health status, religion or sexual orientation.
- All workers (including those of the contractor and subcontractors) will, as part of their induction, receive training on worker rights in line with Kenyan legislation to ensure that positive benefits around understanding labour rights are enhanced. This process will be formalised within the Code of Conduct that will be provided by the contractor.
- All workers (including those of the contractor and subcontractors) will have contracts which clearly state the terms and conditions of their employment and their legal rights. Contracts will be verbally explained to all workers where this is necessary to ensure that workers understand their rights. Contracts must be in place prior to workers commencing work.
- The contractor will put in place a worker grievance mechanism that will be accessible to all workers, whether permanent or temporary, or directly or indirectly employed. The worker grievance mechanism shall be open to all the Project workers in the event that their grievance is not adequately resolved by their direct employer. Workers will also have access to CSKL's grievance management system, to raise any issues with their employer.
- All workers (including those of the contractor and subcontractors) will have access to training on communicable diseases and STDs and community interactions in general. This training will be developed in collaboration with local health institutions.
- Surveillance and assurance that no children or forced labour is employed directly by the contractor, and to the extent possible by third parties related to the Project and primary suppliers where any such risk may exist.

9.1.10.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the residual impact related to exposure of the workforce to Occupational Health and Safety (OHS) risks will be a "**Minor Negative Impact**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The impact is only relevant for the workforce (including direct, third party and supply chain workers) all of whom are at a local level (although they may come from elsewhere in Kenya or globally).
Duration	Long-term	The implications of poor health and safety practices can be severe including loss of life which can significantly affect households and communities ability to maintain their quality of life and livelihoods.
Scale	Very Small	With the implementation of the management measures, the number of Project workers exposed to OHS risks will be very small.
Frequency	Rare	With the implementation of the management measures, exposure of Project workers to OHS risks will be rare.
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Minor Negative Impact[16]		

9.1.11 Impact on Cultural Resources

9.1.11.1 Description of the Baseline Environment

There is a *Mugumo* Tree at the Project Site. *Mugumo* trees are considered as sacred trees amongst the Kikuyu community who are the local inhabitants of Ruiru Sub-county and central Kenya at large. However, the main sacred *Mugumo* tree is located outside the Project Site and will be protected by the management of Tatu City, and will thus not be physically affected by the Project Activities.

9.1.11.2 Proposed Project Activities

This *Mugumo* tree at the Project Site will need to be cut and removed to pave way for Project development. Although avoidance was investigated, the design of the facility and the required size of the facility meant that avoidance was impossible. As such, this tree will need to be removed. The need for its removal, and the appropriate permissions for its removal were undertaken by the ERM stakeholder engagement team, together with representatives of the Project Proponent, Tatu City, and the local County and traditional leadership. Only after permission was granted, was the land lease agreement finalised. A full cultural ceremony, required for the removal of this tree, has been agreed to, and will be paid by Tatu City as agreed in the land sale agreement.

9.1.11.3 Sensitive Receptors

The sensitive receptors for this impact are the Kikuyu community for whom *Mugumo* trees are sacred. Consultations with the Area Chief and village elders during the EIA process confirmed that a special cultural ceremony will need to be performed by the village Elders before the tree is cut down. Tatu City is liaising with the village elders to conduct the required ceremony prior to cutting down this tree and its removal from the site.

9.1.11.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impact cultural resources will be a "**Moderate Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact

[16] Provision of OHS awareness training to the Project workers will reduce the sensitivity to Medium thus resulting in a Minor Negative residual impact.

Direct Negative Impact		
Rating of Impact		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	Only the *Mugumo* tree at the Project Site will be cut down.
Duration	Medium term	If the cultural process is not followed before the *Mugumo* tree is cut, the effects of its loss will continue to be felt even after it has been cut down.
Scale	Small	Only one *Mugumo* tree was confirmed at the Project Site; however, the village elders indicated that there is a possibility of finding a few of its saplings at the Site which they will confirm prior to the conduct of the required cultural ceremony.
Frequency	Once	The loss of the *Mugumo* tree will occur once when it is being cut down; however, its effects on the sensitive receptors will continue to be manifested after it has been cut.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium Sensitivity		
The receptors for this impact are the Kikuyu community who occupy a greater part of central Kenya including Study Area.		
Significant Rating Before Mitigation		
Moderate Negative Impact		

9.1.11.5 Mitigation/Management Measures

- Tatu City is liaising with the Area Chief, village elders and the office of the County Commissioner to arrange and conduct the required cultural ceremony prior to the cutting of the *Mugumo* tree at the Project Site. During this process, the village elders will search and confirm the presence or absence of its saplings within the Project Site and conduct a joint cultural ceremony to clear the entire Project Site. The key requirements for the cultural ceremony are outlined in Box 9.1 below.

Box 9.1 Key Requirements of the Required Cultural Ceremony

According to the information obtained from the village elders, the required cultural ceremony will entail the following:

1. There will be a total of 15 elders who will be present at the cultural ceremony.
2. In addition to the 15 elders, the Chief and Deputy County Commissioner (DCC) will also be present at the cultural ceremony and will have to give the first authorization.
3. The elder/leader/king who will lead the cultural ceremony is called the “Muthamaki”. He is required to be above 90 years of age and unblemished.
4. A special stick (“fimbo”) for the “Muthamaki” will be carried by another elder called the “Mutonyi”.
5. There will be another elder assigned with the responsibility of carrying the knife (‘Knife carrier’) that will be used to slaughter the goats at the cultural ceremony.
6. Two unblemished goats will be sought and purchased by the elders.
7. The elders that will perform the cultural ceremony will have to fast for 7 days prior to the final day of conducting the cultural ceremony. It is also important to note that the cultural ceremony cannot be performed on a weekend; this needs to be considered when selecting the day to start fasting.
8. There is a special brew that will also be offered during the ceremony and it will take 7 days to be ready/processed. The elders will prepare/look for this brew.
9. All the necessary logistics will be arranged by the elders but Tatu City/Site Owner will incur the associated costs.

9.1.11.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measure, the significance of the residual impact related to cultural resources will be a "**Negligible Negative Impact**" post mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impact		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	Only the *Mugumo* tree at the Project Site will be cut down.
Duration	Short term	Up to the performance of the required cultural ceremony.
Scale	Small	Only one *Mugumo* tree was confirmed at the Project Site; however, the village elders indicated that there is a possibility finding a few of its saplings at the Site which they will confirm prior to the conduct of the required cultural ceremony.
Frequency	Once	The loss of the *Mugumo* tree will occur once during the performance of the required cultural ceremony.
Magnitude		
Small Magnitude		
Significant Rating Before Mitigation		
Negligible Negative Impact (17)		

9.2 Operations Related Impacts

9.2.1 Impacts on Local Air Quality

9.2.1.1 Description of the Baseline Environment

Same as that described for the construction phase under Section 9.1.1.1.

9.2.1.2 Proposed Project Activities

The main Project activities that will have an impact on local air quality during the operations phase are:

- Vehicular movements used by the operational staff and in the transportation of goods (to and from the Project Site); however, it is important to note that transportation of goods during the operations is an associated development but not part of the Project since this will be carried out by independent third parties/ owners of goods; and
- Power backup generator (likely to be diesel but potentially LNG). The Project Area has a stable supply of electricity from the national grid; therefore, outages are expected to be infrequent and short term.

Exhaust emissions from vehicular movements and power back-up generator are expected to include CO_2, NO_2, SO_2 and Volatile Organic Compounds (VOCs) since most of them will be powered by diesel/ petrol engines.

(17) After the performance of the required cultural ceremony, the Kikuyu community will no longer be sensitive to the particular *Mugumo* tree (any saplings) at the Project Site, which will result in a negligible overall significance of this impact.

9.2.1.3 Sensitive Receptors

The main sensitive receptors emissions during the operations phase will be the Project workers at the Project Site and other operators along the transportation routes. However, it is important to note that the transportation routes to be used are already existing and approved roads for road traffic. Given the many other road users (vehicles), additional impact attributed to the Proposed Project will be negligible.

9.2.1.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts on the local air quality during the operations phase will be "**Minor Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	This impact will be limited to the Project Site and along the transportation routes.
Duration	Long term	This impact will continue to be manifested through the operations phase.
Scale	Low	The air emissions generated will be within the limits permitted in the National Environmental Management and Coordination Act (Air Quality) Regulations, 2014.
Frequency	Intermittent	This impact will intermittently be manifested during transportation and use of the power back-up generator (during power outages).
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Low Sensitivity		
The receptors are used to vehicular movements and operation of generators during power outages and are thus less sensitive to emissions from their normal operation.		
Significant Rating Before Mitigation		
Minor Negative Impact		

9.2.1.5 Mitigation/Management Measures

- Locate the generator as far as possible away from people, both employees and working areas of neighbouring plots.
- Ensure that the generator uses best available technology and is regularly maintained as per the manufacturer's instructions.
- Vehicles will not be permitted to idle whilst stationary.
- All the customers will be encouraged to use vehicles in good mechanical condition that are regularly maintained as per the manufacturer's advice.
- Implement applicable requirements of the Traffic Management Plan for the Operations phase.

9.2.1.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impact on the air quality will be a "**Negligible Negative Impact**" post mitigation as per the assessment below.

Type of Impact
Direct Negative Impact
Rating of Impacts

Characteristic	Designation	Summary of Reasoning
Extent	Local	This impact will be limited to the Project Site and along the transportation routes.
Duration	Long term	This impact will continue to be manifested through the operations phase.
Scale	Very Low	The air emissions generated will be significantly below the limits permitted in the National Environmental Management and Coordination Act (Air Quality) Regulations, 2014.
Frequency	Intermittent	This impact will intermittently be manifested during transportation and use of the power back-up generator (during power outages).
Magnitude		
Small Magnitude		
Significant Rating Before Mitigation		
Negligible Negative Impact		

9.2.2 Climate Change Impacts (Greenhouse Gas Emissions)

9.2.2.1 Description of the Baseline Environment

Same as that described for the construction phase under Section 9.1.1.1.

9.2.2.2 Overview and Methodology

The methodology used in this Section is in-line with IFC PS3 (IFC, 2012), which requires that where a project is expected to or currently produces more than 25,000 tonnes of carbon dioxide equivalent annually (t CO2/e p.a.), GHG emissions are quantified 'in accordance with internationally recognised methodologies and good practice'. Whilst the project will not reach this threshold, a GHG screening calculation has been undertaken since the facility is a relatively high energy user and there are emissions associated with the logistics operation.

It is typical in an ESIA to assess the significance of impacts with reference to the magnitude of the impact and the sensitivity of the receptor as outlined in Chapter 3. GHG emissions are global in nature and, unlike other environmental impacts, it is difficult to link the emissions of a single project to a specific receptor.

Transboundary effects have not been considered within this assessment, as none of the topic study areas reach other countries. It is noted that unlike some other impacts, the nature of GHG emissions means that the ultimate receptor is the global climate system. Climate change resulting from GHG emissions will lead to social, environmental and economic impacts felt globally, regardless of where the GHGs are emitted. While acknowledging this fact, the GHG contributions from this Project are not of a large enough scale to be considered significant at a national or international level or considered to place any commitments made with respect to international agreements at risk. Therefore, in line with the approach taken for other projects of this scale, transboundary effects have not been considered further in this assessment.

In addition, GHG emissions are closely related to economic growth. In international agreements such as the UNFCCC and the Kyoto Protocol, developing countries are given greater scope to increase their emissions. This is in contrast to developed countries which are expected to reduce their emissions to a greater extent, given that they are starting with greater per-capita emissions and have historically contributed a greater proportion of GHGs. Kenya has signed the Paris Agreement and agreed to the global target of keeping global average temperatures well below 2°C.

There are currently no published guidelines for determining the significance of project GHG emissions in ESIAs. However, the Guidance Notes for IFC PS3 (IFC, 2012) suggest the following criteria for evaluating project GHG emissions, outlined in Table 9.1.

Table 9.1 IFC GHG Assessment Criteria

IFC Criteria	Comments
The Project's GHG emissions relative to the host country's total national emissions	This has been considered in comparison to national emissions
The project's GHG emissions performance relative to good international performance or host country's national average performance	This has been considered in comparison to national emissions
The annual trend of the project's GHG emissions performance over time	This has been considered in the operations impact assessment
Opportunities to further improve the project's GHG emissions performance	This has been considered in the discussion and mitigation measures.

Project GHG Emissions Sources

Table 9.2 outlines the most significant expected GHG emission sources for the Project and whether they are included or excluded in the assessment. In determining this, two factors were considered:

Whether they will contribute in excess of 5% of the Project's annual direct emissions;

Whether they are third party associated GHG emissions (and thus double counting if included) or impossible to quantify.

Table 9.2 The most significant expected GHG emissions sources for the Project

Emissions Source	Quantified	Rationale for Exclusion
Embodied GHG emissions in the facility materials	No	Based on the ERM's experience of other infrastructure projects, a project of this type and size will not result in significant GHG emissions, especially when considered over the lifetime of the facility. They will be well below 5% of annual emissions when considered over the life of the Project.
Biogenic land use change	No	The plot is modified and not of a sufficient size for this to be material. They will be well below 5% of the Project's annual GHG emissions.
Fugitive emissions from refrigerant leakage	No	Ammonia is the most likely refrigerant technology and has a GWP of 0. Further, these emissions are not of sufficient magnitude even if CO_2 or other natural gas is chosen due to their low GWP of 1. If CO_2 of another natural based gas is used, they will be below 5% of the Project's annual GHG emissions.
GHG emissions due to onsite energy consumption	Yes	N/A
GHG emissions from directly operated logistics operation (truck movements)	Yes	N/A
GHG Emissions from solid waste generated	No	At this stage it is not possible to quantify the level of waste generated by the facility. Waste streams will mainly comprise of recyclable packaging materials from pallets received and food waste from fruit and vegetable processing. A licensed recycling facility will be used. The level of waste is unlikely to contribute 5% of annual GHG emissions.
GHG emissions from third parties (customer vehicles)	No	The facility in addition to their own operated logistics operation will receive goods directly from customer/their logistics partners. These are not

Emissions Source	Quantified	Rationale for Exclusion
		quantifiable at this stage and under the control of those parties, thus not estimated due to double counting.
Indirect GHGs in the value chain	Partially	The Project will ultimately impact emissions in the value chain, for example decreasing GHGs from food waste and conversely increasing emissions associated with export of products. An estimate of GHGs avoided from food waste is outlined in the discussion.

Assumptions

At this stage in the Project development where detailed design has not been completed it is necessary to make some assumptions in order to estimate the GHG emissions from the activities outlined Table 9.2. The assumptions used to estimate GHG emissions from energy consumption and transport are outlined below.

The general approach that has been adopted is to use a reasonable worst-case scenario – that is to say based reality of what may occur should no GHG reduction strategies outside of the accepted design criteria outlined in the Project Description Chapter.

Energy supply and consumption

The Project will have a 1.5 MVA grid connection and based on a worst-case scenario of using full capacity 365 days of the year this equates to a consumption of 13,140 MWh. Using 80% of the available roof space (allowing for shading) a rooftop solar installation of approximately 1.5 MW can be installed. With a 20% efficiency rate (Monocrysalline panels) this equates to an output of approximately 2,628 MWh per annum, or 20% of the total facility energy requirements in the worst-case energy consumption scenario.

The grid at TIP is stable based on the available data provided over the last seven years from Tatu City with only a handful of outages and all under 4 hours in length. Therefore, the backup generator will only be used during these grid outages for essential cooling requirements where the solar installation is not in operation. This has been assumed to be no more than the equivalent of 4 full days per annum using a conservative assessment (or 1% of the total time). The size of the generator will be approximately 1 MW to power essential components during these outages.

No battery storage has been assumed for the purposes of this assessment since this is still being determined as to whether it is both commercially and technically viable. If storage is included, the overall GHG footprint of the facility would be less than is presented in this assessment.

In considering the above, the energy split for the facility is 79% grid, 20% solar and 1% diesel backup generator.

Transport

The facility will primarily service the Nairobi metropolitan area and the surrounds. The vehicle fleet will range from 2-tonne to 20-tonne longer haul trucks, the majority at the lower end. A total fleet of approximately 30 trucks at full capacity is expected. An average of a 6-tonne truck has been used as representative of the fleet make-up for the purposes of this assessment.

The facility is located some 25 km from Nairobi's CBD – therefore a return trip into Nairobi will be approximately 50 km. Longer haul trips will range anywhere from 50 km up to 600 km but are less frequent in number. Therefore, a return trip of 150 km has been used in this assessment as the estimate for average trip length and all vehicles are assumed to be diesel fuelled for a worst-case scenario assessment. The full fleet is assumed to run daily at maximum capacity (i.e. 100% of truck capacity).

The fleet will use a self-contained diesel-powered vapour compression system which utilised between 1-5 litres of diesel per hour depending on the size and temperature of the truck[18]. 3 litres per hour has been used in this assessment considering the size of the truck and it is assumed the truck can cover a distance of 20 km per hour (allowing for traffic in the Nairobi metropolitan area). Therefore, each truck's daily fuel consumption is 22.5 litres.

GHG Emissions Estimation

Table 9.3 outlines the GHG emissions estimation for the Project on the basis of the assumptions presented. The emissions factors used are detailed below.

Table 9.3 Project annual GHG Emissions Estimation

Source	Unit	Value	Emission Factor	t CO2e p.a.
Grid supplied energy	MWh	10,512	0.317 g CO2e/KWh	3,332
Roof-top solar	MWh	2,628	0	0
Diesel generator	Litres	19,200[19]	2.67 kg CO2e/litre	51
30 6-tonne trucks with 150 km trip every day (diesel)	Km	1,642,500	0.52563 kg CO2e/km	864
Truck refrigeration unit	Litres	246,275	2.67 kg CO2e/litre	658
Total				**4,905**

Emission Factors

- Grid supplied energy: the combined margin grid emission factor for Kenya as presented in the EIB Carbon Footprint Methodologies p.32 (July 2020). Available at: https://www.eib.org/attachments/strategies/eib_project_carbon_footprint_methodologies_en.pdf
- Rooftop solar: build margin factors as presented in the EIB Carbon Footprint Methodologies p.35.
- Diesel generator: liquid fossil fuels emission factors as presented in the EIB Carbon Footprint Methodologies p.26
- Trucks: UK GHG Conversion Factors for Company Reporting (2020) by the Department for Business, Energy and Industrial Strategy. Available at: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2020
- Truck refrigeration unit: liquid fossil fuels emission factors as presented in the EIB Carbon Footprint Methodologies p.26 (on the basis of fuel consumption outlined in the Assumptions Section.

Impact Assessment

Comparing the estimated direct GHG emissions from the operation of the Project of 4,905 t CO_2e p.a. to the IFC threshold of 25,000 t CO_2e/annum for which a detailed carbon footprint is required, one can quickly see that that the Project's GHG emissions are significantly below this (approximately 1/5). The most significant GHG emissions have been captured and therefore even allowing for a 20% margin of error and including all other smaller GHG contributors (embodied emissions, construction plant etc) the Project will remain significantly below this threshold.

[18] Food Transportation Refrigeration, Tassou et Al, available at : https://www.grimsby.ac.uk/documents/defra/trns-refrigeenergy.pdf

[19] A 1 KVA generator running 100% capacity for 96 hours (4 days) using 200 litres of diesel per hour

In line with the methodology, Table 9.4 presents the impact assessment using the IFC's recommended criteria. The conclusion of the assessment is that the Project's direct emissions in the context of Kenya's annual GHG emissions is negligible. This assessment does not include avoided emissions from food waste, an overview of which is outlined in the discussion. It is very likely that the Project's overall contribution to GHG emissions when this is included will be beneficial.

Table 9.4 GHG Impact Assessment vs. IFC Criteria

IFC Criteria	Assessment
The Project's GHG emissions relative to the host country's total national emissions	According to climatelinks.org (a knowledge portal for USAID staff), Kenya's GHG emissions for the year 2013 were 60.2 Mt CO_2/e. The Project's emissions represent 0.0008% of this total.
The project's GHG emissions performance relative to good international performance or host country's national average performance	The Project's GHG performance will be favourable compared to the national average performance in the cold chains sector since existing businesses use outdated refrigeration technology with much higher GHG emissions and have not been designed to a green building certification for energy and water efficiency. The Project is utilising best available technology for refrigeration and transport, therefore GHG emissions will be favourable compared to the industry.
The annual trend of the project's GHG emissions performance over time	As outlined in this assessment, the largest contributor of GHGs is the energy consumption of the facility. Kenya's national grid over time will decarbonise further reducing the associated Project GHGs and Tatu City will be providing renewable energy solutions of its own to tenants in the future. Therefore, the GHG performance (even considering loss of insultation efficiency in refrigeration) is likely to improve over time.
Opportunities to further improve the project's GHG emissions performance	See discussion and mitigation measures outlined in the ensuing sections.

Discussion

The impact assessment has looked at direct GHG emissions related to the Project's operation on the basis of a reasonable worst-case scenario. As such, it is likely that GHG emissions will be lower than this considering:

- Facility energy consumption is estimated at full capacity and on the full grid connection power rating. The sizing of the connection has been made on the basis that it can handle above the estimated full load – as such these emissions are over-stated. In addition, it is expected the facility will not reach full operational capacity until year 3 or 4.
- Energy demand for the facility is the single highest contributor of Project GHGs (70%) of which the majority is driven by the carbon intensity of Kenya's grid. As older power plants are replaced with renewable energy plants over the next 5-20 years, the carbon intensity of the grid (already relatively low) will reduce significantly – therefore over the lifetime of the Project, direct GHG emissions are expected to fall significantly as well.
- The Project, on the basis of it being commercially and technically feasible, will use battery storage thereby increasing the renewable energy contribution. This has not been considered in this assessment.

- Tatu City itself is looking at developing its own renewable energy projects or tying into renewable energy providers, i.e. as a commercial and industrial off-taker. Owning 8,000 Ha (including Tatu City) there is ample space available for them to do this.
- The trucks have all been assumed to be diesel fuelled. Whilst this will most likely hold true for the long-hauliers, electric vehicles (EVs) may pose an attractive option commercially for smaller trucks/vans servicing the Nairobi metropolitan area. This is dependent on the availability in-country and maintenance needs as outlined in the Analysis of Alternatives Chapter.

In addition to the direct emissions which have been quantified, the Project will also impact indirect emissions in the value chain - most notably in reducing the GHGs associated with food loss. Food loss creates methane during the putrefaction process – a gas with a GWP of 25. . BIO Intelligence Service undertook a research report for the Global Food Cold Chain Council (“GFCCC”) with support from United Technologies (“UTC”), to assess the potential of the cold chain sector to reduce Green House Gas (GHG) emissions through food loss and waste reduction. The report found:

- The global carbon footprint alone of food produced and not eaten is estimated to be 3.3 Gtonnes of CO_2 equivalent – in other words, food loss and waste would rank as the third top GHG emitter after USA and China, if it were a country
- In all scenarios modelled, the decrease of food loss and waste (FLW) carbon footprint from cold chain expansion clearly outbalances the newly created emissions, by a factor ten approximately

Using the facility capacity of approximately 16,000 pallets, of which 40% as a conservative estimate will be used for perishable goods, this equates to 7,680 tonnes turnover a week (6,400 pallets at 1.2 tonnes per pallet). As such, equating this to a like for like food loss reduction over the year would result in 400,000 tonnes of food loss avoided through the implementation of this facility.
GHG emissions from food loss or waste depends heavily on the available treatment type (if any) and also the stage at which the food is lost (production, post-harvest losses, consumer). For the purposes of this assessment, it is assumed that food waste is disposed of in unmanaged shallow landfill which is the most likely scenario.

Methane emissions from food loss are calculated are calculated using the IPCC 1996 Default Methodology Tier 1, as follows: CH_4 (t/y) = [MSWT x L0 - R] x [1 - OX]

1. Annualised mass of MSW to be deposited, MSWT (t/y)
2. L0 = methane generation potential
3. R = mass of methane recovered for energy use or flaring
4. OX = Fraction of CH4 released that is oxidised below surface within the site, OX. Default is OX = 0.1 for well-managed sites, otherwise 0.

Therefore:

CH_4 (t/y) = [400,000 x 0.02 - 0] x [1-0]= 8,000

Using a methane to CO_2 conversion factor of 25 this equates to 200,000 t CO_2e p.a. avoided from food loss, or otherwise expressed approximately 40 times the direct emissions from the Project. Whilst this is undoubtedly a crude method and likely to be overstated, it is sufficiently demonstrating that the Project will positively contribute towards GHG reductions associated with food losses.

Mitigation Measures

From the assessment carried out, the clear opportunity for the Project to reduce GHG emissions is from energy efficiency measures both from energy consumption at the facility level and fuel

consumption from the logistics operation. As such the following mitigation measures should be implemented:

Design measures

- Achieve a green building certification (LEED, IFC Edge, Energy Star) to demonstrate that energy efficiency measures have been carried out to as far as commercially and technically feasible;
- When selecting technologies, be it the refrigeration technology or the logistics fleet composition, this should be on the basis of best available technology in Kenya and from a cost-benefit analysis;
- For key components, e.g. refrigeration technology, design the system as far as reasonably practicable so that it can be easily retrofitted/replaced at the end of its technical or economic lifespan with the current most efficient technology.

Construction

Although the construction phase of the Project will not result in significant GHG emissions it should nevertheless make efficiencies where ever possible, not least because it reduces costs in most cases. Measures will include:

- Local procurement of good and materials wherever possible through the implementation of CSKL's Local Content Policy;
- Contractor to develop and implement a Waste Management Plan applying the waste hierarchy;
- Contractor to develop and implement a Traffic Management Plan to include measures to reduce as far as practical the number of trips;
- Contractor to use plant that is in good working order and regularly maintained.

Operation

The GHG Management Plan for the facility will include:

- Measuring of energy and fuel use data to calculate an accurate direct carbon footprint for the facility;
- On the basis of the results of the carbon footprint, seek to make efficiencies in areas of high GHG emissions;
- Develop and implement a facility Waste Management Plan applying the waste hierarchy

9.2.3 Impacts on the Noise Environment (including vibration)

9.2.3.1 Description of the Baseline Environment

Same as that described for the construction phase under Section 9.1.2.1.

9.2.3.2 Proposed Project Activities

The main source of noise and vibration during the operations phase will be attributed to the trucks transporting the goods that will be stored at the warehouse, and the operation of power backup generator. Given that the Project Site has a steady electricity supply from the national grid and solar energy will be incorporated in the Project Design, the power backup generator will be rarely used, thus resulting in cumulatively negligible noise emissions. Approved standard trucks will be used in the transportation of goods to and from the Warehouse along the already existing road networks. Given the many other roads users (trucks and all other forms of vehicles that ply the roads in the Project Area and beyond), the additional contribution of the Project trucks to noise along the transportation routes will be negligible.

Based on the above discussion, the impact of the Project on noise and vibration will be **Negligible** during the operations phase and has therefore not been discussed further. However, the following noise mitigation measures will be implemented to keep noise levels as low as possible:

- The Project trucks will be regularly maintained, as per the manufacturers' and mechanics' recommendations.
- The power backup generator will be located away from sensitive receptors as much as possible.
- The power backup generator will be fitted with silencers based on available best technology.
- Refrigerated trucks, when docking at the facility, will not use their engines to run the refrigeration units; rather these trucks will plug in to the facility's mains, as opposed to idling.
- All Project drivers will be required to observe applicable traffic rules and regulations as per the national laws.

9.2.4 Impacts on Water Resources

9.2.4.1 Description of the Baseline Environment

Same as that described for the construction phase under Section 9.1.3.1.

9.2.4.2 Proposed Project Activities

The impact on water resources discussed in this section relates to stormwater management and supply of the Project's water needs; the impact related to effluents is assessed separately in Section 9.2.5.

The infrastructure for appropriate stormwater management will be constructed during the construction phase as discussed in Section 9.1.3 and regularly maintained as required during the operations phase. Therefore, stormwater management will not be an issue of concern during the operations phase. It is also important to note that the relative volume of stormwater from the Project Site in comparison to the wider Tatu City is very small.

The Project's water requirements will be met by Tatu City Water and Sanitation Company (TWC) which underwent a separate permitting process. TWC receives its bulk water supply from the Ruiru-Juja Water and Sewerage Company (RUJWASCo). Raw water is sourced from the Riuru River and treated at the Jacaranda water treatment works where it is then fed to TWC's concrete storage tanks for distribution to Tatu City's customers. Tatu City currently has a capacity of 10,000 m^3 storage and a supplementary new 600 m well is being constructed with a capability of providing 150 m^3 per hour; this will be operational by November 2020. Therefore, water supply for the Project is part of a wider water supply plan for Tatu City which was subjected to separate environmental and social permitting process and thus not part of this assessment.

The actual water requirement for this Project is small (60 m^3), and of this volume, approximately 60% of this water will be recycled after treatment at the Project Wastewater Treatment Plant (WWTP).

Based on the above discussion, the impact of the Project on water resources will be **Negligible** during the operations phase and has therefore not been discussed further. However, the following measures will be implemented to keep it more insignificant as much as possible:

- Regularly maintain the drainage system as required.
- Monitor and report on water utilisation and recycle wastewater as appropriate using available technology to the greatest extent possible.

9.2.5 Wastes and Effluents

9.2.5.1 Description of the Baseline Environment

Same as that described for the construction phase under Section 9.1.6.1.

9.2.5.2 Proposed Project Activities

TWC has trunk sewer lines comprising polyvinyl chloride (PVC) pipes laid along the City's service corridors connected to all plots. These trunk lines discharge sewage to external mains trunks which connect to Ruai Treatment Plant. Both the sewer line and Ruai Treatment Plant were subjected to separate environmental and permitting process and thus not part of this assessment. The Project's sewage system will be connected to this existing TWC sewer network.

The Project will also have a small on-site wastewater treatment plant (WWTP) installed below the ground floor of the facility. This will treat and recycle water used in the refrigeration technology and also from light food processing undertaken on site, for example, packaging of fruit and vegetables. The WWTP will discharge effluent treated to national discharge standards into the existing TWC sewage trunk lines. Water quality at Tatu City is monitored twice daily through Tatu Connect.

General waste will also be generated from the operations activities such as packaging wastes and wastes produced from sorting.

Should battery storage also be included as part of the planned solar panel power solution, spent batteries will also need to be adequately discarded.

9.2.5.3 Sensitive Receptors

The sensitive receptors to waste and effluent management will be other developers within the Project Area.

9.2.5.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impact of effluent and waste management during the operations phase will be "**Moderate Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	This impact will only be manifested within the Project Area.
Duration	Long term	This impact will last for the entire operations phase which is planned to be more than 50 years.
Scale	Medium	The scale of this impact refers to the amount of waste that is likely to be generated.
Frequency	Daily	Wastes will be generated daily throughout the operations phase.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium		
Any poor waste management practices will be of a major concern in the Project Area.		
Significant Rating Before Mitigation		
Medium Negative Impact		

9.2.5.5 Mitigation/Management Measures

- A Waste Management Plan (WMP) will be produced for the operations phase:
  - following the principles of:
    - waste minimisation at source,
    - segregation for reuse,
    - recycling, and
    - safe disposal of waste.
  - With detailed measures stipulated such as:
    - using waste minimisation techniques;
    - allocating responsibilities for waste management;
    - identifying all sources of waste;
    - ensuring wastes are handled by personnel licensed to do so especially in the case of hazardous waste;
    - making suitable facilities available for the collection, segregation and safe disposal of the waste, also ensuring wastes are not blown off site by wind contributing to wind-blown litter in the area;
    - creating waste collection areas with clearly marked facilities such as colour coded bins and equipment for handling the various waste types; and
    - The collection of wastes that cannot be reused or recycled to be collected by approved waste contractors and transferred to an appropriate waste management facility for treatment and ultimate disposal (NEMA licensed).

- Operations vehicles and equipment will be serviced off site at designated and approved servicing locations.
- The use, storage, transport and disposal of hazardous materials used for the Project will be carried out in accordance with all applicable Kenyan regulations, and Material Safety Data Sheets (MSDS). As Kenya does not have a specific hazardous waste facility, any hazardous wastes to be disposed of should be documented beforehand, treated as per any requirements of the MSDS sheets, and disposed of in consultation with the County Authorities and via NEMA approved waste handlers. In particular, it is understood that Tatu City has contracted a company called Greenleaf Services, a NEMA licensed waste management company, for the management of waste from the Tatu City SEZ. Depending on the waste types, Greenleaf Services and its sister company, Zoa Taka, will sort recyclable waste and liaise with competent recycling operators to have such wastes recycled, for example at the pyrolysis waste recycling plant in Thika Sub county.
- In line with the requirements of the Waste Management Regulations, any generated hazardous waste should be transported and managed by NEMA permitted hazardous waste handlers.
- Any waste batteries and/or broken or discarded solar panels, should be recycled through an applicable e-waste recycler, and handled through an appropriate NEMA waste contractor, certified to handle such wastes.
- Any waste effluent discharged to sewer will need to conform to the permit conditions for such waste effluent.

- Waste volumes produced, waste volumes recycled, and the quality of effluent relative to permit conditions, must be monitored and reported as part of the facility ongoing HSE programme.

9.2.5.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the impact of waste and effluent management will be a "**Minor Negative Impact**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	This impact will only be manifested within the Project Area.
Duration	Long term	This impact will last for the entire operations phase which is planned to be more than 50 years.
Scale	Low	The scale of this impact refers to the amount of waste that is likely to be generated. With the application of appropriate waste management measure including the application of the waste management hierarchy, less waste will be generated.
Frequency	Daily	Wastes will be generated daily throughout the operations phase.
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Minor Negative Impact		

9.2.6 Impacts on Employment, Procurement and the Economy

9.2.6.1 Description of the Baseline Environment

Same as that described for the construction phase under Section 9.1.7.1

9.2.6.2 Proposed Project Activities

The proposed Project will create both direct and indirect employment opportunities across different skills levels (unskilled, semi-skilled and skilled) during the operations phase. A workforce of approximately 100-150 people is expected to be directly employed at the Project during the operations phase. Indirect employment is also expected from customers, and induced employment related to jobs ensuing from the expenditure of incomes associated with direct and indirect Project related jobs.

Another positive impact on the economy as a result of this Project, is improved post-harvest food management through the use of the Project facilities, which will result in a reduction in food waste, especially during the harvesting seasons. This will result ultimately in the flattening of food prices (as opposed to seasonal variations) and overall improvement in food management along the food value chain. This positive impact will be further accentuated with further planned cold storage solutions for Kenya by the Project Proponent.

9.2.6.3 Sensitive Receptors

The inhabitants of communities around Tatu City, especially the neighbouring Ruiru Town will be able to make the most of the direct and indirect employment opportunities offered. The Project customers are expected to come from across Kenya.

9.2.6.4 Impact Summary (Pre-enhancement)

Type of Impact
Positive Impact
Direct and indirect employment opportunities, and combined multiplier effect of this economic growth will result in increased incomes; promoting some degree of an increase in standards of living.

9.2.6.5 Enhancement/ Management Measures

In order to enhance this positive impact, the following management measures will be implemented:

- The Project will prioritise the recruitment of workers (unskilled, semi-skilled and skilled) from the local communities around Tatu City where available, and in accordance with CSKL Local Content Policy, and in conjunction with Tatu City's Training Academy and Community Liaison Team.
- The Project will develop a fair and transparent employment and procurement policy, and will implement processes, that prevents any form of nepotism and favouritism. CSKL will develop a recruitment plan, in conformance with Tatu City's Local Content policy.
- Advertisements on the employment and procurement opportunities during the operations phase will be placed at the Chief's Office notice board. In the event that the position cannot be filled from within the Project Area, it will be advertised county-wide, and only then, nationally.
- No recruitment will take place at the entrance gates of the facility.

9.2.7 Traffic Impacts

9.2.7.1 Description of the Baseline Environment

Same as that described for the construction phase under Section 9.1.9.1.

9.2.7.2 Proposed Project Activities

During the operations phase, Project traffic will mainly comprise of trucks transporting customer goods to and from the Project Site as well as a few vehicles for the operations staff. These trucks and other vehicles will be using the available local and wider road network and regulated as per the Traffic Act (Cap 402, Revised in 2013 and 2015) and the Traffic (Amendment) Act of 2017. Although the existing road network is open to traffic and will thus be serving its purpose, increased traffic due to transportation of the Project's goods has a potential of slowing down road traffic along the routes that will be used.

The risk of injuries from road traffic accidents are generally low; nevertheless, this is assessed separately in Section 9.2.8.

The increase in traffic could also create dust, noise[20] and may impact on safety (including injury or even death due to accidents) of other road users, and on people living or working within close proximity to the roads on the transport routes.

(20) Impacts of dust and noise are assessed separately in Sections 9.1.1 (Impacts on Local Air Quality) and 9.1.2 (Impacts on the Noise Environment and Vibrations).

9.2.7.3 Sensitive Receptors

The receptors for traffic impacts will be the other users of the roads that will also be used during the transportation Project goods.

9.2.7.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, traffic impacts during the operations phase will be "**Moderate Negative**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	Increased road traffic attributed to the Project will be only noticeable within the Project Area. Increment on road traffic along distant major highways which are already subjected to heavy traffic volumes will be insignificant.
Duration	Long term	This impact will occur throughout the operations phase.
Scale	Low	The expected Project's contribution to increased traffic along the existing road network within the Project Site will be low.
Frequency	Daily	This impact will occur daily during the operations phase.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium Sensitivity		
Traffic impacts will inconvenience the other road users and businesses along them.		
Significant Rating Before Mitigation		
Moderate Negative Impact		

9.2.7.5 Mitigation/Management Measures

- Develop and implement a "Driving Policy".
- Project drivers will undergo the necessary driver training and will be trained in defensive driving. Drive training will be mandatory for all drivers.
- The Project will develop and implement an Operations Phase Traffic Management Plan. The implementation of this Plan will be regularly monitored and audited, and the results of such audits and monitoring will be regularly reported.
- Regularly maintain Project vehicles and equipment as per the manufacturers' recommendations.

9.2.7.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of traffic impacts will be a "**Minor Negative**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	Increased road traffic attributed to the Project will be only noticeable within the Project Area. Increment on road traffic along distant major highways which are already subjected to heavy traffic volumes will be insignificant.
Duration	Long term	This impact will occur throughout the operations phase.

Scale	Very Low	The expected Project's contribution to increased traffic along the existing road network within the Project Site will be very low.
Frequency	Daily	This impact will occur daily during the operations phase.
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Minor Negative Impact		

9.2.8 Labour and Working Conditions (Including Occupational Health and Safety)

9.2.8.1 Description of the Baseline Environment

Same as in Section 9.1.7.

9.2.8.2 Proposed Project Activities

OHS risks during the operations phase will include:

- movement of vehicles both internally and externally (21);
- Working in refrigerated spaces;
- Working at heights;
- Ergonomic risks related to packing and unpacking of goods in the warehouse such as lifting of heavy loads; and
- ammonia leaks from the refrigeration system (22).

9.2.8.3 Sensitive Receptors

Same as that described for the construction phase in Section 9.1.10.

9.2.8.4 Significance of Impact (Pre-mitigation)

Based on the analysis provided above, impacts to exposure of the workforce to inappropriate labour and working conditions (including OHS risks) during the operations phase will be a "**Moderate Negative Impact**" pre-mitigation as per the assessment below.

Type of Impact		
Direct Negative Impact		
Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The impact is only relevant for the direct workforce all of whom will generally be at a local level (although a few of them may come from elsewhere in Kenya or globally).
Duration	Long term	This impact will continue to be manifested throughout the operations phase.

(21) Traffic impacts are assessed separately in Section 9.2.7.

(22) The risk of accidental leakages including ammonia leaks is assessed separately in Section 9.3.1.

Scale	Large	This impact will affect a proportion of the 100 – 150 workers estimated to be employed at the Project during the operations phase. Some of the emanating impacts such as major injuries can be severe including loss of life which can significantly affect households and communities ability to maintain their quality of life and livelihoods.
Frequency	Intermittent	Impact is likely to recur / occur intermittently throughout the operations phase.
Magnitude		
Medium Magnitude		
Sensitivity/Vulnerability/Importance of the Resource/Receptor		
Medium Sensitivity		
Receptors to this impact will include the workers at the Project during the operations phase.		
Significant Rating Before Mitigation		
Moderate Negative Impact		

9.2.8.5 Mitigation/Management Measures

- The Project will develop and implement an operations phase Occupational Health and Safety (OH&S) Management System in line with good industry practice. This system should include consideration of hazard identification, risk assessment and control, use of Personal Protection Equipment (PPE), incident investigation and reporting, reporting, training of workers on OHS risks and tracking of near misses, incidents etc. The management system should also include emergency response plans that tie into existing emergency response plans at TIP. Roles and responsibilities for the implementation of the OH&S Management System should be clearly defined.
- The Project will develop a Human Resources Policy to guide labour recruitment and labour management. This will include a Labour and Employment Plan and Worker Grievance Mechanism. Key issues covered by such Plans will include, but not be limited, to the following:
  - Provision of clear and understandable information regarding rights under national labour and employment law, and any applicable collective agreements, including those related to hours of work, wages, overtime, compensation, etc;
  - Provision of reasonable working conditions and terms of employment;
  - Provision of employment , compensation/remuneration and working conditions, including working hours, based on equal opportunity and fair treatment, avoiding discrimination on any aspects;
  - Provision of adequate welfare facilities on site;
  - Implementation of a grievance mechanism;
  - Adoption and implementation of a sexual harassment policy;
  - Prohibition of child and forced labour; and
  - Adoption of open attitude towards freedom of association.
- All workers will have contracts which clearly state the terms and conditions of their employment and their legal rights. Contracts will be verbally explained to all workers where this is necessary, to ensure that workers understand their rights. Contracts must be in place prior to workers commencing work.
- Annual DOSH and fire safety audits will be conducted by appropriately registered and independent consultants.

9.2.8.6 Residual Impact (Post-Mitigation)

Based on the implementation of the proposed mitigation measures, the significance of the residual impact related to exposure of the workforce to Occupational Health and Safety (OHS) risks will be a "**Minor Negative Impact**" post mitigation as per the assessment below.

Rating of Impacts		
Characteristic	**Designation**	**Summary of Reasoning**
Extent	Local	The impact is only relevant for the direct workforce all of whom will generally be at a local level (although a few of them may come from elsewhere in Kenya or globally).
Duration	Long term	This impact will continue to be manifested throughout the operations phase.
Scale	Small	This impact will be largely avoided, and n case of occurrence only lightly affect a few workers.
Frequency	Rare	With the implementation of the recommended mitigation measures, this impact will be largely avoided and only rarely occur.
Magnitude		
Small Magnitude		
Significant Rating After Mitigation		
Minor Negative Impact[23]		

9.3 Unplanned Events

Unplanned events are activities that are not expected to occur during a project's normal activities, such as accidental leaks and spills. The significance of impacts associated with unplanned events is cannot be determined using the framework described in Chapter 3, because:

- The range of possible effects of a single event is highly variable (i.e. the impact intensity is almost infinitely variable); and
- The kind of unplanned event that may result in a severe environmental impact is, by definition, undesirable, and the Project has substantial built-in controls to avoid such occurrences. Therefore, the probability of such an event occurring should always be very low, whereas the framework described in Chapter 3 is designed for the assessment of impacts that are considered reasonably likely to happen.

Therefore, while consideration is given in this EIA Project Report to some of the Project design measures designed to prevent undesirable events, the assessment of potential impacts resulting from unplanned events is restricted to comments regarding the relative sensitivity of the receiving environment should such an event occur and potential levels of consequence. The management measures included in this section are to be in-built in the Project design to further minimise the possibility of occurrence of the unplanned events. In addition, Emergence Management Plans (EMPs) are recommended for the management of impacts from unplanned events in the event that they occur.

9.3.1 Accidental Leaks and Spills

9.3.1.1 Description of the Baseline Environment

Same as that described for the construction phase under *Section 9.1.6* (Wastes and Effluents).

[23] The conduct of OHS awareness trainings amongst the Project workers will reduce their sensitivity to Medium thus resulting in a Minor Negative residual impact.

9.3.1.2 Proposed Project Activities

Accidental leaks and spills by their nature are undesirable and unplanned since their effects are largely unpredictable depending on the extent of the leak or spill. Therefore, the Contractor (during construction phase) and the Project Developer (throughout the project life cycle) will incorporate best industry standard controls to minimise the possibility of having an accidental leak or spill.

Despite the above, accidental leaks and spills can potentially occur in areas where liquids (including condensed gases) are stored or used. In reference to the proposed Project, the Project equipment and machinery will use fuel (diesel and/or petrol) as well as oil for lubrication during both the construction and operations phase. If there are any unnoticed leaks on the fuel or oil tanks, the fuel and/or oil will flow to the ground thus contaminating the soils and can potentially flow in storm water to the nearby dam thus reducing its water quality.

In addition, refrigerants such as ammonia and carbon dioxide will be used during the operations phase. In particular, ammonia is toxic and hazardous with irritating and corrosive effects. Contaminations at a level above 300 ppm or higher are life threatening. However, due to its distinctive acrid smell, which can be noticed in very low concentrations starting at 5 ppm, humans normally notice it well below the threshold of a harmful concentration.

Another risk associated with use of ammonia is explosion and fire. Ammonia is a flammable gas and can form flammable or potentially explosive compounds in dry air when in a gaseous state. The concentration threshold is between 15 and 28 volume percent. However, the required ignition temperature is rather high at least 1202 °F/650 °C. Due to this and other chemical properties of ammonia, explosions and fires purely caused by it are very rare (the possibility of its occurrence only happens if its concentration in unventilated rooms exceeds the explosion limit (15 volume percent) or if high-energy ignition sources such as high-temperature welding are present).

9.3.1.3 Sensitive Receptors

Same as that described for the construction phase under Section 9.1.6 (Wastes and Effluents). In addition, Project workers are another category of sensitive receptors for this impact.

9.3.1.4 Mitigation/Management Measures

General Leaks and Spills Management

- All Project equipment and machinery will be properly maintained as per the manufacturer's recommendations. In particular, the status of fuel and oil tanks will be checked.
- At the start of every work day, Project vehicles and equipment will be checked for spills and leakages.
- Project equipment and machinery will be serviced off site.
- Fuel, oil and used oil storage areas will be contained in bunds of 110 percent capacity of the stored material. Fuels will be stored in above-ground storage tanks.
- Spill containment and clean up kits will be available onsite and clean-up from any leakage or spill will be appropriately contained and disposed of.

Specific Management Measures for Use of Ammonia as a Refrigerant

Outlined below are specific management measures for use of ammonia as a refrigerant; however, it is understood that the Project Proponent has contracted a refrigerant consultant, who will be responsible for the maintenance and monitoring of such:

- Maintenance work at ammonia refrigeration systems requiring welding, soldering or cutting must be performed with extreme caution: existing oil mists can lower the explosion limit of ammonia/air

mixtures. Ammonia systems should; therefore, be purged with air or a non-flammable gas prior to starting the welding work in order to remove residual ammonia.

- Early leakage detection through installation of an automatic and specific chemical detection system depending on available technology as well as smell detection by the Project workers. In particular, this will require training of all the operations phase Project workers on early detection of ammonia smell.
- Conduct regular maintenance of both the refrigeration system and the leakage detection technology.
- Prepare an emergency response plan for implementation in case of major leakages or explosion.

9.4 Cumulative Impacts

Cumulative impacts are a result of effects that act together (including those from concurrent or planned future third-party activities) to affect the same resources and/or receptors as the Project under consideration (e.g. the combined effect of other similar projects in the general area).

An effect to a resource in itself may not be considered significant but may become significant when added to the existing and potential effects eventuating from similar or diverse developments in the area.

In practice, effective design and implementation of complete CIA processes is often beyond the technical and financial capacity of a single developer as recognised in IFC's Good Practice Handbook for CIA. CIA thus transcends the responsibility of a single project developer. However, occasionally, it may be in the best interest of a private sector developer to lead the CIA process, but the management measures that will be recommended as a result of the process may ultimately be effective only if the government and other relevant institutions are involved. CIAs are multi-stakeholder, iterative processes that:

- Require the involvement of multiple multi-disciplinary teams and an effective, efficient governance structure, and
- Tend to be time and data intensive.

In light of the above and in relation to the proposed Project, a number of other Projects are proposed within the TIP as well as the wider Tatu City. The management of Tatu City oversees all developments in Tatu City which puts into consideration CIA. In particular, there is an established Development Control Committee (DCC) within Tatu City which reviews all the plans for the different projects and considers them for approval. It is also important to note that the NEMA approval of the Strategic Environmental Assessment put into consideration the impacts that would arise from the implementation of the various projects within the Tatu City mixed use SEZ. The Project Developer will continue to liaise with the management of Tatu City to identify and implement synergies and minimise environmental and social cumulative impacts as much as possible.

9.5 Decommissioning Impacts

As mentioned in Chapter 4, the Project will have a lifespan in excess of 50 years and demand for cold storage will only grow during this period in Kenya. As such, two options are considered for decommissioning:

- Components that have a shorter lifespan such as the cooling system and vehicles will be replaced, and the facility will continue to function. It is likely that the cooling system, at least in part, will need to be replaced after 20 years and this provision is made in the design of the facility.

- On the basis that the facility is no longer required it will be dismantled and the site returned to its original state (this is most unlikely potential changes/developments that will have occurred in its neighbourhood).

Should option 2 materialise then the decommissioning phase will be similar to the construction phase in terms of environmental and social impacts. The majority of the warehouse superstructure is made of steel and recyclable components. The concrete foundations and other non-recyclable elements will be disposed of to landfill. Given that the lifespan is over 50 years, the exact practical measures at the time of decommission cannot be ascertained at this time given expected changes in its neighbourhood and advances in technology; therefore, the following general recommendation is made:

- Prepare an appropriate decommissioning plan at least one year in advance. The decommissioning plan should put into consideration advances in technology and development.

9.6 Summary of Impacts and Residual Impacts

Table 9.5 Summary of Construction Phase Impacts

Impact	Significance (pre-mitigation)	Residual Impact
Impacts on Local Air Quality	Minor Negative	Negligible
Impacts on the Noise Environment and Vibrations	Minor Negative	Minor Negative
Impacts on Water Resources	Minor Negative	Negligible
Impact on Biodiversity	Minor Negative	Negligible
Waste and Effluent	Moderate Negative	Minor Negative
Impacts on Employment, Procurement and the Economy	Positive Impact	Positive Impact
Impact on Disease Transmission	Moderate Negative	Minor Negative
Traffic Impacts	Moderate Negative	Minor Negative
Labour and Working Conditions (Including Occupational Health and Safety)	Moderate Negative	Minor Negative
Impact on Cultural Resources	Moderate Negative	Negligible

Table 9.6 Summary of Operations Phase Impacts

Impact	Significance (pre-mitigation)	Residual Impact
Impacts on Local Air Quality	Minor Negative	Negligible
Waste and Effluent	Moderate Negative	Minor Negative
Impacts on Employment, Procurement and the Economy	Positive Impact	Positive Impact
Traffic Impacts	Moderate Negative	Minor Negative
Labour and Working Conditions (Including Occupational Health and Safety)	Moderate Negative	Minor Negative

10. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

10.1 Introduction

The purpose of this Environmental and Social Management and Monitoring Plan (ESMMP) is to ensure that social and environmental impacts and risks identified during the ESIA process are effectively managed during the construction and operations of the Project. The ESMMP specifies the mitigation and management measures to which the Project Proponent and the Contractor are committed and shows how the Project will mobilize organizational capacity and resources to implement these measures. The ESMMP also shows how mitigation and management measures will be scheduled and will ensure that the Project complies with the applicable laws and regulations within Kenya, as well as the requirements CSKL's E&S Compliance Framework (Section 10.2).

The key objectives of the ESMMP are to:

- Formalize and disclose the programme for environmental and social management; and
- Provide a framework for the implementation of environmental and social management initiatives.

Best practice principles require that every reasonable effort is made to reduce, and preferably to prevent, negative impacts while enhancing the Project benefits. These principles have guided the ESIA process.

The overall responsibility for the ESMMP lies with the Project Proponent (CSKL) and the Contractor that will be appointed and responsible for carrying out the specific Project activities.

10.2 CSKL E&S Compliance Framework

In the development, construction and operation of the Project CSKL and its contractors and business partners will adhere to the following standards:

- All applicable legislation and regulations in Kenya;
- The Guidelines of Tatu City's Development Control Committee;
- IFC Environmental and Social Performance Standards (2012) and the World Bank Group (WBG) General Environmental, Health and Safety Guidelines (2007);
- The African Development Bank Group's (AfDB) Integrated Safeguards System (2013).

This ESMMP has been developed in accordance with the requirements of these regulations and standards.

10.3 Environmental and Social Management and Monitoring Plan (ESMMP)

The ESMMP covers information on the management and/or mitigation measures that will be taken into consideration to address impacts with respect to:

- The construction phase (including mobilisation and demobilisation activities associated with the construction phase); and
- The operations/ Maintenance phase.

In practice, some of the recommended management measures will be incorporated into the Project design/ influence the Project design, to avoid or minimise the identified negative Project impacts as indicated in this ESMMP.

Table 10.1 summarises the ESMMP for the Project. It describes the mitigation measures to be undertaken, and, to ensure the mitigation measures are adequately implemented, a monitoring programme is also described. This programme provides for parameters that can be monitored, and

suggests how monitoring should be done, how frequently, and who should be responsible for such monitoring.

Table 10.1 Environmental and Social Management and Monitoring Plan (ESMMP)

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
Construction Phase					
General	Contractor is required to develop and implement a contractor's Construction Environmental Management Plan (C-ESMP) meeting the conditions set out in the environmental authorisation (EIA Certificate for this Project once issued by NEMA), as well as this ESIA Project Report (PR) and lender requirements. All applicable elements of this ESMMP should be used in drafting and finalising the contractor specific C-ESMP, which is to be used for the construction phase, and against which the E&S performance of the contractor will be monitored.	Contractor	A comprehensive and appropriate C-EMP in place	Once – off (prior to commencement of construction activities, but after obtaining NEMA EIA PR Approval)	No additional cost (expected to be undertaken by the contractor's environmental and social team)
Impacts on Local Air Quality (*Section 9.1.1*)	▪ Develop and implement a grievance procedure to manage any dust complaints. ▪ Where feasible, regularly wetting or chemically treating of exposed open earthworks such as at the levelled and material laydown areas. Upon completion of earthworks, stabilization of temporary used surfaces (i.e., establishing vegetative cover as part of the landscaping activities, or placing ground cover) should occur as soon as possible. ▪ The smallest possible area for cleared ground required for construction work should be exposed. ▪ Drop heights of material should be minimised, as far as reasonably possible. ▪ Soil and aggregate stockpiles should be managed in accordance with the mitigation / management measures provided for Impacts on Water Resources (refer to Section9.2.3). ▪ Where feasible and reasonable, vehicles that are compliant with recent emission standards (for example, EURO Tier 3) should be used. These vehicles should be maintained in reasonable working order.	Contractor	No recorded incidents or dust-related grievances to surrounding land users Records of audits/visual inspection Air quality emissions at respective receptors not exceeding the maximum permitted limits	Daily	All associated costs presumed included in overall construction costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	▪ When not in use, vehicles should be switched off, unless impractical for health and safety reasons (for example maintenance of air conditioning). ▪ Construction equipment should be maintained and serviced on a regular basis to ensure that they function optimally and to reduce excessive emissions, this will also apply to all stationary generators utilised on site. ▪ Issue all Project workers appropriate Personal Protective Equipment (PPE) including dust masks where required. ▪ Develop and implement an appropriate Traffic Management Plan (TMP) throughout the construction phase. ▪ Any spillages at the Project Site or along access routes should be cleaned up within a reasonable time in line with the spill response procedure to prevent secondary emissions. For GHG emissions: Although the construction phase of the Project will not result in significant GHG emissions it should nevertheless make efficiencies where ever possible, not least because it reduces costs in most cases. Measures will include: ▪ Local procurement of good and materials wherever possible through the implementation of CSKL's Local Content Policy; ▪ Contractor to develop and implement a Waste Management Plan applying the waste hierarchy; ▪ Contractor to develop and implement a Traffic Management Plan to include measures to reduce as far as practical the number of trips; ▪ Contractor to use plant that is in good working order and regularly maintained.				
Impacts on the Noise Environment (including vibration)	▪ Develop and implement a grievance procedure in the event of any noise and vibration impact complaints being received. ▪ Regular inspection and maintenance of all machinery and vehicles.	Contractor	No recorded noise-related incidents or grievances to surrounding land users Noise monitoring records	Monthly	Noise management costs presumed included in overall

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
(*Section 9.1.2*)	▪ Installation of silencers or acoustic enclosures on machinery, where applicable, such as installation of suitable mufflers on engine exhausts and compressor components as well as the use of portable sound barriers around noisy equipment like generators. ▪ As far as reasonably possible, avoid or minimise Project traffic routing through community areas and the implementation of speed limits for all construction vehicles. ▪ Limiting hours of operation for specific equipment or operations (e.g. trucks or machines). In particular, limit use of heavy construction machinery to daytime only (06:01 am – 8:00 pm). ▪ Restricting noise levels at the project boundary within the industrial area from construction activities to 75 dB LAeq during the daytime, and 65 dB LAeq at night as far as is practicable, or to other standards that have been agreed with the local authority. ▪ Noise monitoring against the performance criteria presented above should be implemented if persistent noise complaints are received. ▪ All employees are to be provided with, and are to wear, appropriate hearing protection such as earmuffs and earplugs where necessary. ▪ Avoid idling of Project vehicles and equipment when not in use. ▪ Shutting down of machines in intermittent use in the intervening periods between work (or throttle them down to a minimum).		Noise emissions at respective receptors not exceeding the maximum permitted limits		construction costs
Impacts on Water Quality and Flow (*Section 9.2.4*)	**General Measures** ▪ The Project should develop and implement a grievance procedure to deal with complaints including those related to impacts on water quality. ▪ Regularly maintain the Project equipment as per the manufacturer's instruction to avoid the possibility of any leaks and spills. ▪ Liaise with the management of Tatu City on wastewater discharge and stormwater management requirement given that this is the responsible institution for their management in the wider SEZ.	Contractor in liaison with the management of Tatu City	No recorded water (quality, quantity or stormwater flow) -related incidents or grievances from surrounding land users Visual audits/spot checks Good housekeeping at the Project site	Weekly	Included in overall construction costs as good practice

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	▪ Method Statements detailing spill emergency response and clean-up procedures for spills should be developed. ▪ Training regarding proper methods for transporting, transferring and handling hazardous substances that have the potential to impact surface and groundwater resources should be undertaken. ▪ Areas where spillage of soil contaminants occurs should be excavated (to the depth of contamination) and suitably rehabilitated. If any other minor spillage occurs, it should be cleaned as soon as possible, but within the same shift and the contaminated area should be reinstated. All contaminated material should be suitably disposed of. ▪ The *ad hoc* maintenance, with the exception of emergency repairs; of vehicles in and around the Project Site should be prevented, as far as reasonably possible. All major services and ad hoc maintenance of vehicles and equipment should be done at a designated workshop. The workshop should be properly constructed to prevent pollution and should as far as reasonably practical include containment berms and an oil/grease trap. ▪ All construction areas and associated facilities should be maintained in a good and tidy condition; debris and wastes should be contained in such a way that they cannot become entrained in surface runoff during periods of heavy rain. ▪ Where practical, exposed surfaces and friable materials should be covered/sheeted. ▪ Sufficient portable toilets at active work areas should be provided for site staff and workers and these should be serviced regularly by a competent and suitably qualified person. ▪ The sewage treatment/ containment system should be managed in a manner that results in zero discharge of raw sewage to the environment, and if treated sewage is discharged into the environment then this should conform to recognised Kenyan discharge standards prior to discharge. ▪ All wastewater which may be contaminated with oily substances should be managed in accordance with an		Well drained Project site Areas used for temporary construction activities fully restored		

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	approved Waste Management Plan, and no hydrocarbon-contaminated water should be released into the environment. **Specific Measures – Flow (including stormwater water)** ▪ Project infrastructure should be designed and located to minimise the impacts to natural water flow. ▪ Connect stormwater channels from the Project Site to the main stormwater ducts established by Tatu City. ▪ The design of all the drainage channels should be informed by the climate of the Project Area to be constructed to be able to manage peak run-off. ▪ Ensure protection of soil adjacent to the side drains and the constructed drainage facilities. ▪ Spoil/excavations should be visually assessed to determine if it is contaminated. In the event that the spoil is contaminated, it should be handled as a hazardous material and disposed of under supervision and into controlled dumping areas.				
Impacts on Biodiversity *(Section 9.1.5)*	**Control Measures for Invasive Plant Species** ▪ All alien vegetative and/or seed-bearing material that is removed should be burnt on Site to prevent the distribution of seed and fertile vegetative material, regardless of the status of the surrounding areas. **Landscaping Measures** ▪ In liaison with the management of Tatu City, appropriate landscaping plants should be planted in the compound of the Project as per the DCC guidelines. Indigenous plants should be used as far as practical to minimise water use, and to prevent the spread of alien invasive. ▪ Invasive plants (such as lantana) are often used in Kenya as ornamental plants, and these must be avoided.	Contractor	Observed *Lantama camara* at the Project Site effectively controlled Landscaping designs approved by DCC	Monthly	Included in overall construction costs
Wastes and Effluents (*Section 9.1.6*)	▪ Spoil generated should be disposed of on pre-identified and approved locations (impact assessment should be completed for the locations if not already approved). ▪ A Waste Management Plan (WMP) will be produced for the construction phase.	Contractor	An effective WMP in place No recorded grievances at the waste sources or	Monthly	Included in overall construction costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	▪ Construction vehicles and equipment will be serviced off site at designated and approved servicing locations. ▪ The use, storage, transport and disposal of hazardous materials used for the Project will be carried out in accordance with all applicable Kenyan regulations, and Material Safety Data Sheets (MSDS). As Kenya does not have a specific hazardous waste facility, any hazardous wastes to be disposed of should be documented beforehand, treated as per any requirements of the MSDS sheets, and disposed of in consultation with the applicable County Authorities and via NEMA approved waste handlers. ▪ Tatu City has contracted a company Greenleaf Services, a NEMA licensed waste management company, for the management of waste from the Tatu City SEZ. Depending on the waste types, Greenleaf Services and its sister company, Zoa Taka, will sort out recyclable waste and liaise with competent recycling operators to have such waste recycled, for example at the pyrolysis waste recycling plant in Thika Sub county. Occasional audits to monitor company performance should be undertaken by the Project proponent. ▪ The Contractor will be required to supply the required temporary ablution facilities and be responsible for the treatment and/or removal of sewage wastes off site. The Contractor will also be required to ensure that any sub-contracting company is accredited and has the necessary permits to remove sewage waste. ▪ The sewage will be treated in accordance with the applicable laws like the Environmental Management and Coordination (Waste Management) Regulations, 2006. ▪ All construction laydown areas shall comply with the Project WMP and be provided with appropriate waste handling equipment. ▪ Work sites will have appropriate solid waste holding receptacles for the expected different types of waste, and waste is to be managed according to the waste management hierarchy. Waste is to be sorted for ease of segregation, reused, recycled,		related to the supply of construction materials Records of audits/visual inspection		

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	and disposed of only as a last resort. It is understood that Tatu City has contracted a company called Greenleaf Services, a NEMA licensed waste management company, for the management of waste from the Tatu City SEZ. Depending on the waste types, Greenleaf Services and its sister company, Zoa Taka, sort recyclable wastes and liaises with competent recycling operators to have such wastes recycled. ▪ In line with the requirements of the Waste Management Regulations, any generated hazardous waste should be transported and managed by NEMA permitted hazardous waste handlers.				
Impacts on Employment, Procurement and the Economy (*Section 9.1.7*)	▪ The contractor will prioritise the recruitment of workers (unskilled, semi-skilled) from the local communities around Tatu City where available in accordance with CSKL Local Content Policy and in conjunction with Tatu City's Training Academy and Community Liaison Team. ▪ The contractor will adhere to CSKL's equal Opportunities and Diversity Policy that prevent any form of nepotism and favouritism. ▪ The Contractor will notify identified representatives of the County Government and Local Administration (i.e. the Area Chief) of the specific jobs and the skills required for the Project, during the recruitment process. ▪ Advertisements on the employment and procurement opportunities during the construction phase will be placed at the Chief's Office notice board and the Training Academy, and applications are to be done through this Tatu City and the training Academy. In the event that the position cannot be filled from within the Project Area, it will be advertised further county-wide then nationally. ▪ The Contractor will aim at procuring locally available materials where feasible and use local suppliers where appropriate.	Contractor	Contractor recruitment plan Employment records	Preparation of Human Resources guiding documents (including recruitment guidelines) prior to construction Employment records checked monthly	Internal costs
Impact on Disease Transmission	▪ The Contractor will prepare a COVID-19 response and management plan based on a risk assessment considering international guidance, e.g. from World Health Organisation	Contractor in liaison with CSKL	HIV/AIDS/Malaria/TB Policy COVID-19 Response and Management Plan	Monthly	Internal costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
(*Section 9.1.8*)	(WHO), and in accordance with Kenyan regulatory requirements. ▪ Workers should receive awareness training as part of their induction and then at least every 6 months on potential high risk communicable and vector borne diseases, symptoms, preventative measures and transmission routes as well as treatment options. This will be particularly important for diseases with which non-local workers are unfamiliar and in case of any emerging disease outbreaks. ▪ In the event of a new disease, increased transmission or outbreak compared to the baseline, the Contractor should interact with local health care facilities and workers to ensure there is an appropriate response in place to make workers aware and to ensure proper precautionary measures are implemented. ▪ The Contractor will adhere to CSKL's Supplier Code of Conduct providing a worker code of behaviour including worker-worker interactions, worker-community interactions and development of personal relationships with members of the local communities. ▪ Providing workers with appropriate sanitary facilities, which are appropriately designed to prevent contamination. ▪ Developing a robust waste handling system to avoid the creation of new vector breeding grounds or attracting rodents to the area. ▪ Implementing measures to reduce the presence of standing water onsite through environmental controls and source reduction to avoid the creation of new breeding grounds. ▪ Ensuring appropriate food preparation and monitoring measures are in place. ▪ The workforce will be provided with access to selected treatment at health facilities at or near the Project Site as deemed necessary for this Project. The requirements for these health facilities should be based on a risk assessment considering access to existing health facilities and travel time to facilities that offer international standards of care. Access to		Worker Code of Conduct Disciplinary procedures for workers who contravene the Code of Conduct		

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	health care should include direct employees, and sub-contractors working on site. ▪ Pre-employment screening protocols will be put in place within the framework of equal opportunities and non-discrimination. This should include pre-employment medicals and follow up medicals as appropriate. The screening protocols should consider heath conditions related to the nature of the work undertaken, employee residential details and legal requirements. Workers should not be denied employment on the basis of the outcomes of the screening but should be provided treatment or alternative roles as appropriate.				
Traffic Impacts (*Section 9.1.9*)	▪ In consultation with the County Transport and Safety Committee and the management of Tatu City, develop and implement a Traffic Management Plan covering the routes to be used by the contractor vehicles, vehicle safety, speed limits on roads, driver and passenger behaviour, use of drugs and alcohol, hours of operation, rest periods and location of rest stops, and accident reporting and investigations. ▪ Prepare and implement an appropriate community Grievance Redress Mechanism (GRM). The GRM should be communicated to all the local community members and neighbours around the TIP. ▪ As much as possible, avoid transportation of Project equipment and materials through busy trading centres and towns by using by-passes as appropriate. ▪ Regularly maintain Project vehicles and equipment as per the manufacturers' recommendations.	Contractor in liaison with the Project Proponent and Kenya Police	Incident records Records of complaints Traffic Management Plan Grievance mechanism in place, where traffic incidents are recorded and addressed	Monthly	Internal costs
Labour and Working Conditions (*Section 9.1.10*)	**OH&S Management System** ▪ The Contractor will develop and implement an Occupational Health and Safety Management System in line with good industry practice including IFC Performance Standard 2 and Kenya's Occupational Health and Safety Act (OSHA). This system will include consideration of hazard identification, risk assessment and control, use of Personal Protection Equipment (PPE), incident investigation and reporting, reporting and tracking of near misses, incidents etc. The management system	CSKL (contractual arrangements) Contractor (implementation)	Employment records and other key performance indicators (KPIs) for worker rights A record of workers' grievances	Monthly	Internal costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	will also include emergency response plans that tie in with existing emergency response procedures are the TIP. Roles and responsibilities should be clearly defined. ▪ The Contractor will have a Human Resources Policy in place that adheres to IFC Performance Standard 2, Kenyan Law and the ILO Core Labour Conventions to which Kenya is a signatory. The policy will include a Labour and Employment Plan, conditions of employment and Worker Grievance Mechanism. These requirements will also be passed on to any sub-contractors. **Contractor Management** ▪ In all contracts, explicit reference should be made to the need to abide by Kenyan law, international standards (in particular IFC PS2), ratified ILO conventions and the Proponent's policies in relation to health and safety, labour and welfare standards. ▪ As part of the contractor and supplier selection process, CSKL will take into consideration performance with regard to worker management, worker rights, and health and safety as outlined in Kenyan law and international standards. ▪ Regular checks should be undertaken to ensure the relevant labour laws and occupational health and safety plans are adhered to at all times. ▪ All workers (including those of contractors and subcontractors) should, as part of their induction, receive training on health and safety and should receive updated training routinely, as well as when undertaking new tasks, such as working at heights or working in confined spaces. **Workers' Rights** ▪ The Contractor should put in place hiring mechanisms to ensure no employee or job applicant is discriminated against on the basis of his or her gender, marital status, nationality, ethnicity, age, health status, religion or sexual orientation. ▪ All workers (including those of the contractor and subcontractors) will, as part of their induction, receive training		Emergency Response Plan Induction documentation for all workers to include necessary items		

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	on worker rights in line with Kenyan legislation to ensure that positive benefits around understanding labour rights are enhanced. This process will be formalised within the Code of Conduct that will be provided by the contractor. ▪ All workers (including those of the contractor and subcontractors) will have contracts which clearly state the terms and conditions of their employment and their legal rights. Contracts will be verbally explained to all workers where this is necessary to ensure that workers understand their rights. Contracts must be in place prior to workers commencing work. ▪ The contractor will put in place a worker grievance mechanism that will be accessible to all workers, whether permanent or temporary, or directly or indirectly employed. The worker grievance mechanism shall be open to all the Project workers in the event that their grievance is not adequately resolved by their direct employer. Workers will also have access to CSKL's grievance management system. ▪ All workers (including those of the contractor and subcontractors) will have access to training on communicable diseases and STDs and community interactions in general. This training will be developed in collaboration with local health institutions. ▪ Surveillance and assurance that no children or forced labour is employed directly by the contractor, and to the extent possible by third parties related to the Project and primary suppliers where any such risk may exist.				
Impact on Cultural Resources (*Section 9.2.11*)	▪ Liaise with the Area Chief, village elders and the office of the County Commissioner to arrange and conduct the required cultural ceremony prior to the cutting of the Mugumo tree at the Project Site. During this process, the village elders will search and confirm presence or absence of its saplings within the Project Site and conduct a joint cultural ceremony to clear the entire Project Site.	Tatu City Management	The Mugumo tree cut down in compliance with the requirements of the cultural traditions and beliefs	Prior to commencement of the construction activities	KES 126,000 (Estimates from the village elders)
Operations Phase					

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
General	▪ Develop and implement an operational phase Environment, Health and Safety (EHS) Management Plan meeting the conditions set out in the environmental authorisation, as well as this ESIA PR and lender requirements.	CSKL	An effective operations phase EHS Plan	Developed once and implemented throughout the operations phase	Internal costs
Impacts on Local Air Quality (*Section 9.2.1*)	▪ Locate the generator as far as possible away from people, both employees and working areas of neighbouring plots. ▪ Ensure that the generator uses best available technology and is regularly maintained as per the manufacturer's instructions. ▪ Vehicles will not be permitted to idle whilst stationary. Rather vehicles will plug into the mains power whilst docking to keep their refrigerant units going, whilst the vehicle is idle. ▪ All the customers will be encouraged to use vehicles in good mechanical condition that are regularly maintained as per the manufacturer's advice.	CSKL and operators of the various Project components	No recorded incidents or grievances to surrounding land users	Daily	No additional costs
Climate Change Impacts (Greenhouse Gas Emissions) (*Section 9.2.2*)	The GHG Management Plan for the facility will include: ▪ Measuring of energy and fuel use data to calculate an accurate direct carbon footprint for the facility; ▪ On the basis of the results of the carbon footprint, seek to make efficiencies in areas of high GHG emissions; ▪ Develop and implement a facility Waste Management Plan applying the waste hierarchy.	PCSKL	Appropriate GHG management plan Appropriate technology with minimal GHG emissions used. No use of outlawed or banned GHG compounds or Ozone depleting substances	Quarterly	Internal costs
Impacts on the Noise Environment (including vibration) (*Section 9.2.3*)	▪ The Project trucks will be regularly maintained as per the manufacturers' and mechanics' recommendations. ▪ The power backup generator will be located away from sensitive receptors as much as possible. ▪ The power backup generator will be fitted with silencers based on available best technology. ▪ All Project drivers will be required to observe applicable traffic rules and regulations as per the national laws.	Project Proponent	No recorded noise-related incidents or grievances to surrounding land users Occupational noise monitoring records within the Premises	Monthly	Internal operations costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
			Noise emissions at respective receptors not exceeding the maximum permitted limits		
Impacts on Water Resources (*Section 9.2.4*)	▪ Regularly maintain the drainage system as required. ▪ Monitor and report on water utilisation and recycle wastewater as appropriate using available technology. ▪ Any effluent to the municipal sewer to meet the requirements of the effluent discharge permit.	Project Proponent	No recorded water (quality, quantity or stormwater flow) -related incidents or grievances to surrounding land users Visual audits/spot checks Good housekeeping at the Project site Well drained Project site	Monthly	Internal maintenance costs
Wastes and Effluents (*Section 9.2.5*)	▪ A Waste Management Plan (WMP) will be produced for the operations phase ▪ Operations vehicles and equipment will be serviced off site at designated and approved servicing locations. ▪ The use, storage, transport and disposal of hazardous materials used for the Project will be carried out in accordance with all applicable Kenyan regulations, and Material Safety Data Sheets (MSDS). As Kenya does not have a specific hazardous waste facility, any hazardous wastes to be disposed of should be documented beforehand, treated as per any requirements of the MSDS sheets, and disposed of in consultation with the County Authorities and via NEMA approved waste handlers. In particular, it is understood that Tatu City has contracted a company called Greenleaf Services, a NEMA licensed waste management company, for the management of waste from the Tatu City SEZ. Depending on the waste types, Greenleaf Services and its sister company, Zoa Taka, will sort recyclable waste and liaise with competent recycling operators to have	Project Proponent	An effective operations phase WMP in place No recorded grievances related to inappropriate waste management at the Project Site Records of audits/visual inspection	Monthly	Internal operations costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	such wastes recycled, for example at the pyrolysis waste recycling plant in Thika Sub county. ▪ In line with the requirements of the Waste Management Regulations, any generated hazardous waste should be transported and managed by NEMA permitted hazardous waste handlers. ▪ Any waste batteries and/or broken or discarded solar panels, should be recycled through an applicable e-waste recycler, and handled through an appropriate NEMA waste contractor, certified to handle such wastes.				
Impacts on Employment, Procurement and the Economy (*Section 9.2.6*)	▪ The Project will prioritise the recruitment of workers (unskilled, semi-skilled) from the local communities around Tatu City where available in accordance with CSKL Local Content Policy and in conjunction with Tatu City's Training Academy and Community Liaison Team. ▪ The Project will develop a fair and transparent employment and procurement policy and processes that prevent any form of nepotism and favouritism. . ▪ TCSKL will develop a recruitment plan and work with local stakeholders to carry out the recruitment. ▪ Advertisements on the employment and procurement opportunities during the operations phase will be placed at the Chief's Office notice board. In the event that the position cannot be filled from within the Project Area, it will be advertised further county-wide and then nationally.	Project Proponent Maintenance Contractor	Employment records	Preparation of Human Resources guiding documents (including recruitment guidelines) prior to construction Employment records checked monthly	Internal costs
Traffic Impacts (*Section 9.2.7*)	▪ Develop and implement a "Driving Policy" which should prohibit use of phones while driving ▪ The Project drivers will undergo the necessary driver training course and defensive driving ▪ Develop and implement an operations Phase Traffic Management Plan for the Project. ▪ Regularly maintain Project vehicles and equipment as per the manufacturers' recommendations.	Project Proponent and customers Maintenance Contractor	Incident records Records of complaints Traffic Management Plan	Quarterly	Internal costs
Labour and Working Conditions	▪ The Project will develop and implement an operations phase Occupational Health and Safety Management System in line with good industry practice. This system should include	Project Proponent and customers	Employment records and other key performance	Monthly	Internal costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
(Including Occupational Health and Safety) (*Section 9.2.8*)	consideration of hazard identification, risk assessment and control, use of Personal Protection Equipment (PPE), incident investigation and reporting, reporting, training of workers on OHS risks and tracking of near misses, incidents etc. The management system should also include emergency response plans that tie into existing emergency response plans at TIP. Roles and responsibilities should be clearly defined. ▪ The Project will develop a Human Resources Policy to guide labour recruitment and management. ▪ All workers will have contracts which clearly state the terms and conditions of their employment and their legal rights. Contracts will be verbally explained to all workers where this is necessary to ensure that workers understand their rights. Contracts must be in place prior to workers commencing work.		indicators (KPIs) for worker rights A record of workers' grievances Induction documentation for all workers to include necessary items		
All Project Phases					
Accidental Leaks and Spills (*Section 9.3.1*)	**General Leaks and Spills Management** ▪ All Project equipment and machinery will be properly maintained as per the manufacturer's recommendations. In particular, the status of fuel and oil tanks will be checked. ▪ At the start of every work day, Project vehicles and equipment will be checked for spills and leakages. ▪ Project equipment and machinery will be serviced off site. ▪ Fuel, oil and used oil storage areas will be contained in bunds of 110 percent capacity of the stored material. Fuels will be stored in above-ground storage tanks. ▪ Spill containment and clean up kits will be available onsite and clean-up from any leakage or spill will be appropriately contained and disposed of. **Specific Management Measures for Use of Ammonia as a Refrigerant** ▪ Maintenance work at ammonia refrigeration systems requiring welding, soldering or cutting must be performed with extreme caution: existing oil mists can lower the explosion limit of	Project Proponent Maintenance Contractor	An appropriate Spill Management Plan Maintenance Schedule Maintenance records Records of accidental leaks/ spillages	Monthly	Internal costs

Issue	Mitigation/Management Measure	Responsibility for Implementation	Completion Indicator	Frequency of Monitoring	Cost
	ammonia/air mixtures. Ammonia systems should; therefore, be purged with air or a non-flammable gas prior to starting the welding work in order to remove residual ammonia. ▪ Early leakage detection through installation of an automatic and specific chemical detection system depending on available technology as well as smell detection by the Project workers. In particular, this will require training of all the operations phase Project workers on early detection of ammonia smell. ▪ Conduct regular maintenance of both the refrigeration system and the leakage detection technology. ▪ Prepare an emergency response plan for implementation in case of major leakages or explosion.				

10.4 Topic Specific Management Plans

The following Sections present the specific management plans foreseen for construction and operations, based on the outcomes of the impact assessment. Table 10.2 presents a summary of the topic specific management plans that will be prepared for the Project by the different directly involved parties. Please note that this is in addition to the SEP which has been prepared during the ESIA process (**Appendix C**).

Table 10.2 Summary of Topic Specific Management Plans

CSKL Policies/Plans for Construction Phase	Contractor Management Plans and Procedures for Construction Phase	CSKL Operational Management Plans and Procedures
▪ Supplier Code of Conduct ▪ Local Content Policy ▪ Contractor General HSES requirements	Contractor's Construction Environmental Management Plan (CEMP) including the following (to a minimum): ▪ Air Quality Management Plan ▪ Noise Management Plan ▪ COVID-19 Management Plan ▪ Emergency Response Procedure ▪ Spill Response Procedure ▪ OHS Plan ▪ Waste Management Plan ▪ Water Management Plan ▪ Traffic Management Plan	▪ CSKL Corporate E&S Policies ▪ CSKL Environmental and Social Management System ▪ OHS Management System ▪ Waste Management Plan ▪ Traffic Management Plan ▪ GHG Management Plan

Outlined below is a summary of the contents of the key management plans. It is important to note that all the topic specific management plans will need to tie into the wider Tatu City Management Plans for the various components.

10.4.1 Waste Management Plan

The Waste Management Plan (WMP) will be developed to manage solid and liquid wastes and to avoid any discharges into the soil or water for both the construction and operation phases. It will establish procedures for the storage, collection and disposal of waste, including liquid and solid waste, as well as hazardous and non-hazardous waste.

The WMP will provide for the following:

- Compliance with the Environmental Management and Coordination (Waste Management) Regulations of 2006;
- Compliance with the National Solid Waste Management Strategy, 2015;
- Compliance with the National Environment Policy, 2014;
- Outline of waste characteristics and sufficient capacity for managing different waste streams and waste quantities; and
- The WMP will be developed following CSKL's Policies and will consider IFC PS 3.

Furthermore, it will contribute to ensuring that the capacity and the nature of waste collection and treatment systems are in line with the wastes to be managed.

The overall objective is to minimise impact of waste generated during the construction and operational phases through the following:

- minimise the amount of waste that is generated;
- maximise the amount of waste that is recovered for recycling – including segregation of recyclable wastes at source;
- ensure any hazardous wastes (e.g. used oils) are securely stored and transferred to appropriate facilities;
- avoid dust impacts from handling of construction wastes;
- ensure all wastes are properly contained, labelled and disposed of in accordance with local regulations; and
- ensure waste is disposed of in accordance with the waste management hierarchy.

10.4.2 Emergency Response Plan

The Emergency Response Plan (ERP) will assemble and describe in one document the site-specific actions and procedures to be taken in emergency situations occurring during construction and operation phases.

The objective of the ERP is to be prepared to respond to process upset, accidental, and emergency situations in a manner appropriate to the operation risks and to prevent their potential negative consequences. The ERP will clearly make a distinction between all the project phases, since the actions to be undertaken will be different during the construction, operation and decommissioning phases.

The content of the ERP can be summarized as follows:

- Kenyan legal provisions on civil emergencies;
- The identification of the potential hazards (i.e. natural disasters, civil disturbances, fire or explosions, malfunctioning of the devices during the processes, pressure issues, etc.) related with the Project and its construction and operation and the possible impact to the environment and health;
- Identification of the governmental authorities, the media and other relevant stakeholders to be notified and description of the procedures for communicating with them;
- The necessary measures to limit human and environmental consequences associated with Project related accidents; co-operation between the Contractor, local and central authorities, as well as the local community;
- Safety technical measures to be described and appropriate measures to protect the public safety or property from potential hazards;
- Preliminary description of the organization structure, and explain interactions with Project and operation procedures;
- Preliminary identification of the system and procedures for providing personnel refuge, evacuation, rescue, medical treatment and repatriation; and
- Preliminary description of training activities and the arrangement for training response teams and for testing emergency systems and procedures.

Finally, the Plan shall include provisions for the training of all workers on the emergency response procedures and will include procedures related to communication to stakeholders and community improvement opportunities.

10.4.3 Water Management Plan

The Water Management Plan will have the following objectives:

- Monitor water use: The Plan will set procedures for estimating water used by the Project, identifying activities that use this resource, and will document water use reporting needs.
- Minimize water use: The Plan will provide a series of measures to be considered for minimising the use of water;
- Document water sources; and
- Record all communications with Water Authorities.

The Water Management Plan will be developed following CSKL's policies and will consider all the relevant IFC PSs.

Finally, the Plan will include provisions for the training of all workers on how to use water efficiently.

10.4.4 Traffic Management Plan

A Traffic Management Plan (TMP) will be developed to manage traffic attributed to the Project, minimise traffic disruption and road user delay and provide for the on-going safety of road users, including pedestrians and cyclists. All of the traffic related impacts described previously can be mitigated very effectively by the implementation of standard best practices in terms of environmental controls and management practices during construction. These measures will be detailed in the TMP, which will describe in detail the measures that the Contractor and Project Proponent will implement during the construction and operation phases of the Project, respectively.

The key issues that will be addressed by the TMP in terms of mitigation measures will include:

- Access to construction areas;
- Routing of construction traffic;
- Prevention of road user delay;
- Temporary traffic control and management;
- Reducing the probability of traffic accidents and improving safety for road users and others;
- Preventing and remedying road degradation;
- Road crossings; and
- Parking facilities.

The Contractor shall regularly update their TMP as their construction methods are developed and vehicle movement requirements are identified in detail. The Contractor will consult with the principal representative of any communities that will suffer a significant increase in traffic in order to develop awareness of the mitigation measures within the TMP.

A TMP is important both in ensuring the safety of construction personnel and local communities. The TMP is intended to be a 'live' document and its traffic management principles will form the basis for subsequent detailed construction traffic management arrangements between the appointed Contractor and the road authorities.

The TMP will include the following minimum requirements:

- Levels of development related to traffic that will use this road network;
- Identification of key sensitivities along proposed access routes;
- Measures to provide for the on-going safety of road users, including pedestrians and cyclists;
- Project driver training requirements with respect to road safety and environment;
- Project Schedule;
- Roles and responsibilities for implementation of the TMP;
- Measures to prohibit “off-route” driving;
- Speed limits and methods of enforcement;
- Means to inform the community of traffic risks;
- Vehicle equipment;
- Vehicle maintenance and refuelling locations;
- Inspection, auditing and reporting; and
- Driver competency.

10.4.5 Health and Safety Management Plan

The Health and Safety (H&S) Management Plan will be a tool that will provide a framework for the following:

- Planning for Health and Safety;
- Accident and Incident Investigation; and
- Health and Safety Auditing.

The H&S Management Plan will be developed following all the relevant IFC PSs. The H&S Management Plan will include, at a minimum, the following elements:

- CSKL’s HSE Policy.
- H&S Organisation: detailed organisation chart and description of roles and responsibilities associated with managing H&S. The organization proposed in the Plan will consider the competency of the proposed professionals and will provide mechanisms to ensure co-operation and communication between the H&S management team members.
- H&S Standards, including site safety inductions; hazards identification and risk assessment, including task analysis and construction hazards; H&S targets, and a procedure for safety performance evaluation and review; emergency procedures; toolbox meeting procedure; site visit registers; and MSDS sheet register.
- Accidents and Incidents, including: definitions; reporting and registering procedures; root-cause analysis.
- H&S Auditing, including the following: auditing plan; setting audit objectives and measuring H&S performance; site safety inspection checklists and first-aid equipment checklist.

The Plan will include provisions for the training of all workers on H&S and will include procedures related to communication to stakeholders and community improvement opportunities.

10.4.6 Supplier Code of Conduct

The Supplier Code of Conduct will set out the CSKL's expectations of worker behaviour (also applicable to contractors), consistent with the national labour laws and international good practice standards. Specifically, the Workers Code of Conduct will be explicit on the following:

- The scope of the Workers Code of Conduct;
- A requirement by all the Project employees to comply with all the Contractor's rules and regulations;
- Prohibited and restricted activities at the work place like drug abuse;
- Respect at the work place including respect for other Project workers as well as the local community members;
- Protection of Project property;
- Professionalism;
    - Working hours,
    - Personal appearance,
    - Leave policy,
    - Absenteeism and tardiness,
    - Conflict of Interest,
    - Pronouncement on giving and receiving gifts,
    - Confidentiality, and
    - Communication.
- Contractor's pronouncement on all forms of harassment;
- Grievance management; and
- Discipline of workers who bleach the requirements of the Workers' Code of Conduct.

10.5 Roles and Responsibilities

10.5.1 Contractual Obligation

In order to ensure that this ESMMP and/or derivatives thereof are enforced and implemented, these documents must be given legal standing. This shall be achieved through incorporating the ESMMP and/or derivative documents as an addendum to the contract documents for the Contractor and sub-contractors (if any) and specifying that the requirements of this ESMMP and/or derivative documents apply and must be met. This will ensure that the obligations are clearly communicated to Contractors.

10.5.2 Responsibilities and Duties

10.5.2.1 The Project Proponent (CSKL)

The Project Proponent has overall responsibility for ensuring that the construction and development of the Project is undertaken in an environmentally sound and responsible manner, and in particular, reflects the requirements and specifications of the ESMMP and recommendations from the relevant authorities.

The responsibilities of the Project Proponent will include:

- Appoint or designate a suitably qualified Project Manager to manage the implementation of the proposed Project;
- Appoint the Project Contractor;
- Establish and maintain regular and proactive communications with the designated/appointed Project Manager (PM) and Environmental Compliance Officer (ECO); and
- Ensure that the ESMMP is reviewed and updated as necessary.

Reporting Structure

The Project Proponent will liaise with and/or take instruction from the following:

- Government/regulatory authorities such as NEMA; and
- General Public.

10.5.2.2 Project Proponent's Project Manager (PM)

The primary role of the PM is to ensure that the Contractor and Project Proponent's staff complies with the environmental specifications in the ESMMP. The PM shall further:

- Oversee the general compliance of the Contractor with the ESMMP and other pertinent site specifications; and
- Liaise with the Contractor and ECO on environmental matters, as well as any pertinent engineering matters where these may have environmental consequences.

In addition, the PM shall:

- Designate or appoint a suitably qualified Environmental Manager (EM) that will manage all environmental aspects on behalf of the PM and the Project Proponent;
- Review and approve Method Statements produced by the Contractor in connection with the ESMMP;
- Assume overall responsibility for the effective implementation and administration of the ESMMP;
- Be familiar with the contents of the ESMMP, and his/her role and responsibilities as defined therein;
- Ensure that the ESMMP is included in the Contractor's contract;
- Communicate to the Contractor, verbally and in writing, the advice of the ECO and the contents of the ECO reports;
- In conjunction with the Construction Supervisor; undertake regular inspections of the Contractor's site as well as the installation works in order to check for compliance with the ESMMP in terms of the specifications outlined therein. Inspections shall take place at least once a week and copies of the monitoring checklist contained in the file;
- Review and approve drawings produced by the Contractor or professional team in connection with, for example, the construction site layout, access/haul roads, etc.;
- Issue site instructions giving effect to the ECO requirements where necessary;
- Keep a register of all complaints and incidents (spills, injuries, legal transgressions, etc.) and other documentation related to the ESMMP;
- Report to the ECO any problems (or complaints) which cannot first be resolved in co-operation with the Contractor(s);

- Implement recommendations of possible audits;
- Implement Temporary Work Stoppages as advised by the ECO, where serious environmental infringements and non-compliances have occurred;
- Facilitate proactive communication between all role-players in the interests of effective environmental management; and
- Ensure that construction staff is trained in accordance with requirements of the ESMMP.

Reporting Structure

The PM will report to the Project Proponent (CSKL). Weekly meetings between the contractor and Project Proponent, and monthly reporting will be required.

10.5.2.3 Project Proponent's Environmental Control Officer (ECO)/ Environmental Health and Safety (EHS) Officer

Through the PM, the Project Proponent will appoint an ECO/EHS Officer to monitor and oversee implementation of the ESMMP for the proposed construction works. The ECO/ EHS Officer is given authority to ensure that the ESMMP is fully implemented and that appropriate actions are undertaken to address any discrepancies and non-compliances.

The role of the ECO/EHS Officer shall be to:

- Act as site 'custodian' for the implementation, integration and maintenance of the ESMMP in accordance with the contractual requirements;
- Ensure successful implementation of the ESMMP; and
- Ensure that the Contractor, his employees and/or sub-contractors receive the appropriate environmental awareness training prior to commencing activities.

The responsibilities of the ECO/EHS Officer will be to:

- Liaise with the PM on the level of compliance with the ESMMP achieved by the Contractor on a regular basis for the duration of the contract;
- Advise the PM on the interpretation and enforcement of the Environmental Specifications (ES), including evaluation of non-compliances;
- Supply environmental information as and when required;
- Review and approve Method Statements produced by the Contractor, in conjunction with the PM;
- Demarcate particularly sensitive areas (including all No-Go areas) and to pass instructions through the PM concerning works in these areas;
- Monitor any basic physical changes to the environment as a consequence of the construction works according to an audit schedule;
- Attend regular site meetings and Project steering committee meetings;
- Undertake regular monthly audits of the construction works and to generate monthly audit reports. These reports are to be forwarded to the PM who will communicate the results and conclusions with the Project Proponent;

- Communicate frequently and openly with the Contractor and the PM to ensure effective, proactive environmental management, with the overall objective of preventing or reducing negative environmental impacts and/or enhancing positive environmental impacts;
- Advise the PM on remedial actions for the protection of the environment in the event of any accidents or emergencies during construction, and to advise on appropriate clean-up activities;
- Review complaints received and make instructions as necessary; and
- Identify and make recommendations to minor amendments to the ESMMP as and when appropriate.

Reporting Structure

The ECO will report to the PM, who in turn will report to the Project Proponent.

10.5.2.4 Contractor

The Contractor will implement the development. The Contractor will be contractually required to undertake their activities in an environmentally responsible manner, as described in the ESMMP.

The role of the Contractor shall be to:

- Ensure that the environmental specifications of this document (including any revisions, additions or amendments) are effectively implemented. This includes the on-site implementation of steps to mitigate environmental impacts;
- Preserve the natural environment by limiting any destructive actions on site;
- Ensure that suitable records are kept and that the appropriate documentation is available to the PM;
- Take into consideration the legal rights of the individual Landowners, Communities and Project Proponent's staff;
- Ensure quality in all work done, technical and environmental;
- Underwrite the Project Proponent's Environmental Policy at all times, and
- Ensure that all sub-contractors and other workers appointed by the Contractor are complying with and implementing the ESMMP during the duration of their specific contracts.

The responsibilities of the Contractor will be to:

- Discuss implementation of and compliance with this document with staff at routine site meetings;
- Designate, appoint and/or assign tasks to personnel who will be responsible for managing all or parts of the ESMMP. The Contractor must appoint or designate a Safety, Health, Environment and Quality Officer (SHEQO) to monitor daily implementation of the ESMMP on the Contractor's behalf as a minimum;
- Monitor environmental performance and conformance with the specifications contained in this document during site inspections;
- Report progress towards implementation of and non-conformances with this document at site meetings with the PM;
- Advise the PM of any incidents or emergencies on site, together with a record of action taken;

- Report and record all accidents and incidents resulting in injury or death; and
- Resolve problems and claims arising from damage immediately to ensure a smooth flow of operations.

Reporting Structure

The Contractor will report to the PM and ECO, as and when required.

10.5.2.5 Sub-contractors

The Contractor may from time to time appoint sub-contractors.

The role of the sub-contractors shall be to:

- Perform certain services and/or provide certain products on behalf of the Contractor. The sub-contractors will be contractually required to undertake their activities in an environmentally responsible manner, as described in the ESMMP; and
- Ensure environmental awareness among employees so that they are fully aware of and understand the Environmental Specifications and the need for them.

The responsibilities of the sub-contractor will be to:

- Be familiar with the contents of the ESMMP, and his/her roles and responsibilities as defined therein;
- Comply with the Environmental Specifications in the ESMMP and associated instructions issued by the Contractor to ensure compliance;
- Notify the Contractor verbally and in writing, immediately in the event of any accidental infringements of the Environmental Specifications and ensure appropriate remedial action is taken; and
- Notify the Contractor, verbally and in writing at least 10 working days in advance of any activity he/she has reason to believe may have significant adverse environmental impacts, so that mitigation measures may be implemented timeously.

Reporting Structure

Sub-contractors will report to and receive instructions from the Contractor.

10.5.3 Monitoring

10.5.3.1 Undertaking Audits

The PM shall appoint a qualified and experienced ECO/EHS Officer to ensure implementation of and adherence to the ESMMP.

The ECO/EHS Officer shall conduct audits to ensure that the system for implementation of the ESMMP is operating effectively. The audit shall check that a procedure is in place to ensure that:

- The ESMMP and the Method Statements being used are the up to date versions.

- Variations to the ESMMP, Method Statements and non-compliances and corrective actions are documented.
- Emergency procedures are in place and effectively communicated to personnel.

The audit programme shall consist of the following at a minimum:

- First audit no later than 1 month after construction commences;
- Thereafter audits at monthly intervals, at a minimum;
- An audit one week prior to practical completion of the Project is granted; and
- A post construction audit within 1 week after the Contractor has moved off site.

The contractor and the Project Proponent will also be required to meet at least weekly to discuss and check progress of implementing the ESMMP.

10.5.3.2 Compliance with the ESMMP

The Contractor and/or his agents are deemed not to have complied with the ESMMP and remedial action if:

- There is evidence of contravention of the ESMMP clauses within the boundaries of the site or extensions;
- Environmental damage ensues due to negligence; and
- The Contractor fails to comply with corrective or other instructions issued by the PM, within a time period specified by the PM.

11. CONCLUSIONS AND RECOMMENDATIONS

11.1 Conclusions

The ESIA process undertaken has identified and assessed a range of potential impacts to the physical, biological and socio-economic environments. Where impacts have been identified, mitigation measures to manage those impacts have been provided in this ESIA Project Report. All the identified impacts are either of moderate or minor significance even prior to the application of the appropriate mitigation measures. With proper implementation of the recommended mitigation/management measures, the significance of the residual impacts will be reduced to a minor or negligible level which I mainly attributed to the fact that:

- The Project Site is located within the Tatu City Special Economic Zone (SEZ), in particular, the planned Tatu Industrial Park (TIP). The Masterplan for the Tatu City SEZ was approved on 6th September 2011 (NEMA/SEA/5/2/11) through a Strategic Impact Assessment (SEA). Subsequently, precinct 3BA in which the TIP is located was approved through an ESIA on 14th August 2015 (NEMA/EIA/PSL/2158) and a variation for the ESIA license obtained on the 28th July 2017 (NEMA/EIA/VC/636).
- Given the above early planning and approval process was completed, there are no settlements in or the immediate surroundings of the Project Site. The Project will therefore not result in any displacement (neither physical, nor economic). The management of Tatu City has a 99-year lease and will sub-lease the required plot of land to the Project Proponent.
- Through the SEA (mentioned above) all environmental and social sensitivities within the planned Tatu City, such as the main Mugumo tree, which is an important cultural site, and wetlands were identified and avoided where possible during the planning of the detailed developments. Therefore, there is no environmental or social red-flag/ fatal flaw at the Project Site, given avoidance measures were implemented at the original project planning phases.
- The management of Tatu City will provide for external shared facilities and services, such as water supply, electricity distribution networks, waste management facilities (including sewage management) and access roads.
- The Project Site is located within a planned industrial area and will be surrounded by other light industries, and thus fits within the land use planning of the Project Area.

11.2 Recommendations

ERM is confident that every effort will be made by the Propjet Proponent and Contractor to accommodate the mitigation measures recommended during the ESIA process to the extent that is practically possible, without compromising the economic viability of the Project or having a lasting impact on the environment. The implementation of the mitigation measures detailed in *Chapters 9* and listed in the ESMMP (*Chapter 10*) will provide a basis for ensuring that the potential positive and negative impacts associated with the establishment of the development are enhanced and mitigated, respectively, to a level which is deemed adequate for the development to proceed.

In summary, based on the findings of this assessment, ERM finds no reason why the Project, should not be authorised, contingent on the mitigations and monitoring for potential environmental and socio-economic impacts as outlined in the ESMMP.

REFERENCES

CCSEAF, 2020: Environmental and Social Management System Manual for the ARCH Cold Chain Solutions East Africa Fund LP

County Government of Kiambu: County Integrated Development Plan for Kiambu, 2018 – 2022.

County Government of Kiambu: Ruiru Municipality Charter, 2018

GIBB Africa, 2011: Strategic Environmental Assessment Report for the proposed Tatu City Structure Plan

IFC, 2007: Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets.

IFC, 2012: IFC Performance Standards on Environmental and Social Sustainability.

IFC, 2012: Policy on Social and Environmental Sustainability.

Kenya National Bureau of Statistics (KNBS), 2012: Kenya Population and Housing Census (2009); Analytical Report on Population Projections.

NEMA, 2015: The National Solid Waste Management Plan.

Tatu City Limited, 2015: ESIA Project Report for the proposed construction of light industrial, commercial, residential, recreational, school and hospital and other associated Amenities – Precinct 3BA.

Tatu City, 2018: Development Control Committee (DCC) Guidelines on Development and Planning Approvals

APPENDIX A ERM NEMA REGISTRIATION AND PRACTICING LICENSE FOR 2020

FORM 5 (r.14(4))

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)
THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT
CERTIFICATE OF REGISTRATION AS AN ENVIRONMENTAL IMPACT ASSESSMENT/ AUDIT EXPERT

Certificate No: NEMA/EIA/RC/572

Application Reference No: NEMA/EIA/ER/1915

This is to certify M/s **Environmental Resource Management East Africa Ltd(ERM)** of P.O Box 100798 - 00101 Nairobi (Address) has been registered as an Environmental Impact Assessment Expert in accordance with the provisions of the Environmental Management and Coordination Act and is authorized to practice in the capacity of a Lead Expert/Associate Expert/Firm of Experts (Type) **Firm of Experts**

Expert Registration No: **7264**

Issued Date : **9/16/2014**

Signature

(Seal)

Director-General
The National Environmental Management Authority

P. T. O.

ISO 9001 : 2008 Certified

FORM 7 (r.15(2))

mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/11480

Application Reference No: NEMA/EIA/EL/15491

M/S **ENVIRONMENTAL RESOURCE MANAGEMENT EAST AFRICA LTD (ERM)**
(individual or firm) of address

P.O. Box 29170-00100, Nairobi

is licensed to practice in the

capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts**

registration number **7264**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **1/8/2020** Expiry Date: **12/31/2020**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001 BUREAU VERITAS Certification UKAS

ISO 9001: 2008 Certified

APPENDIX B NEMA CORRESPONDENCES AND APPROVALS ALREADY OBTAINED FROM NEMA FOR THE PROJECT AREA

mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT LICENSE

License No: **NEMA/EIA/PSL/2158**

Application Reference No: **NEMA/EIA/PSR/4531**

This is to certify that the Environmental Impact Assessment Project Report received from

Tatu City Limited.

P.O Box 2739-00621, Nairobi.

submitted to the National Environmental Management Authority in accordance with the Environmental Impact Assessment & Audit Regulations regarding

Proposed Construction of Precint 3 BA.

whose objective is to carry on

Construction of precint 3 BA (light industrial commercial, residential, recreational, school, hospital and other associated amenities).

located at

Plot L.R No 28867 (Grant No. 137858) within Tatu City, off Nairobi-Thika Superhighway , in Ruiru, Kiambu County.

has been reviewed and a license is here by issued for the implementation of the project, subject to attached conditions.

Issue date : **14 August, 2015**

Signature

(seal)

Director-General
The National Environment Management Authority.

P. T. O.

1.0 General Conditions

1.1 This project is for the construction of Precinct 3BA (light industrial, commercial, residential, recreational, school, hospital and other associated amenities) on plot L.R. NO. 28867 (Grant No. 137858) in Tatu City, off Nairobi-Thika Superhighway, in Ruiru, Kiambu County, at an estimated cost of KShs.1 billion.

1.2 The license shall be valid for 24 months (time within which the project shall commence) from the date hereof.

1.3 The Director General shall be notified of any transfer, variation or surrender of this license.

1.4 Without prejudice to the other conditions of this license, the proponent shall implement and maintain an environmental management system, organizational structure and allocate resources that are sufficient to achieve compliance with the requirements and conditions of this license.

1.5 The Authority shall take appropriate action against the proponent in the event of breach of any of the conditions stated herein or any contravention to the Environmental Management and Coordination Act, 1999 and regulations therein.

1.6 This license shall not be taken as statutory defence against charges of pollution in respect of any manner of pollution not specified herein.

1.7 The proponent shall ensure that records on conditions of licenses/approval and project monitoring and evaluation shall be kept on the project site for inspection by NEMA's Environmental Inspectors.

1.8 The proponent shall submit an Environmental Audit report in the first year of occupation/operations/commissioning to confirm the efficacy and adequacy of the Environmental Management Plan.

1.9 The proponent shall provide the final project accounts (final project costs) on completion of construction phase. This should be done prior to project commissioning/operation/occupation.

1.10 The proponent shall comply with NEMA's improvement orders throughout the project cycle.

2.0 Construction Conditions

2.1 The proponent shall obtain the requisite approvals from the County Government of Kiambu and all other relevant Authorities prior to commencement of works.

2.2 The proponent shall put up a project signboard as per the Ministry of Transport and Infrastructure standards indicating the NEMA EIA license number among other information.

2.3 The proponent shall ensure that adequate and appropriate sanitary facilities are provided for the workers during construction phase and that proper decommissioning of the facilities is carried out once construction is complete.

2.4 In the event that the project site borders a river or a stream, the proponent, pursuant to Regulation 6 (c) of the Water Quality Regulations of 2006, shall protect the riparian reserve by ensuring that **NO** development activity is undertaken within the full width of the river or stream to a minimum of six (6) meters and a maximum of 30 meters on either side, based on the highest recorded flood level. The pegging by the Surveyor for the riparian reserve shall be under the supervision of Water Resources Management Authority and NEMA.

2.5 The proponent shall ensure that the cooling systems fitted have zero potential ozone depleting as per the Environmental Management and Coordination (Controlled Substances) Regulations of 2007.

2.6 The proponent shall ensure that requisite approvals are obtained from the Water Resources Management Authority before abstraction of water from Rivers Ruiru, Kamiti, Mukuyu and Kianjibbe for water supply purposes within the project area.

2.7 The proponent shall ensure that the project site is sealed off and all entrances to the site closed when there is no work in progress.

2.8 The proponent shall ensure that a concise traffic management plan is designed to the approval of the County Engineer and implemented throughout the project phases.

2.9 The proponent shall submit designs drawings of the proposed water and sewerage reticulation works to the Ruiru-Juja Water and Sewerage Company for approval prior to commencement of works.

2.10 The proponent shall put up a proper functional waste water treatment system with a capacity to handle the anticipated effluent discharge.

2.11 The proponent shall ensure that construction is done as per the approved building plans and in adherence to the Building Code of Kenya of 1968.

2.12 The proponent shall ensure that the construction is supervised by qualified personnel.

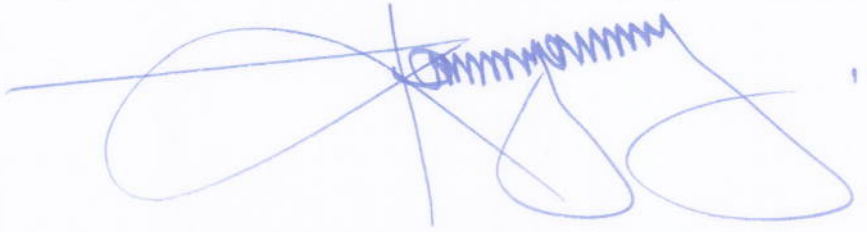
2.13 The proponent shall ensure that dust control measures are put in place during the construction phase.

2.14 The proponent shall ensure design drawings for the water and sewerage reticulation system are submitted to the relevant authorities for evaluation and approval before commencement of works.

2.15 The proponent shall ensure the project will not encroach on way-leaves and road reserves.

2.16 The proponent shall ensure that all excavated material and debris is collected, re-used and where need be, disposed off as per the Environmental Management and Coordination (Waste Management) Regulations of 2006.

2.17 The proponent shall ensure strict adherence to the provisions of Environmental Management and Coordination (Noise and Excessive Vibrations Pollution Control) Regulations of 2009.



2.18 The proponent shall ensure strict adherence to the Occupational Safety and Health Act (OSHA), 2007.

2.19 The proponent shall ensure strict adherence to the provisions of the Environmental Management and Coordination (Air Quality) Regulations of 2014.

2.20 The proponent shall ensure that construction workers are provided with adequate personal protection equipment (PPE) as well as adequate training.

2.21 The proponent shall ensure that construction activities are undertaken during the day (and not at night) between 0800 hours and 1700 hours and that transportation of construction material to site are undertaken during weekdays at off peak hours.

2.22 The proponent shall ensure that the development adheres to zoning specifications issued for development of such a project within the jurisdiction of the County Government of Kiambu and SEA-Tatu City Master Plan, with emphasis on approved land use for the area.

2.23 The proponent shall ensure strict adherence to the Environmental Management Plan developed throughout the project cycle.

3.0 Operational Conditions

3.1 The proponent shall ensure strict adherence to the provisions of the Environmental Management and Coordination (Air Quality) Regulations of 2014.

3.2 The proponent shall apply for an effluent discharge license from NEMA in the first year of operation as set out in the Environmental Management and Coordination (Water Quality) Regulations of 2006.

3.3 The proponent shall ensure that the installed waste water treatment system is functional throughout the operational period.

3.4 The proponent shall ensure that all waste water is disposed of as per the standards set out in the Environmental Management and Coordination (Water Quality) Regulations of 2006.

3.5 The proponent shall ensure that rain water harvesting facilities are provided to supplement surface water.

3.6 The proponent shall ensure that all drainage facilities are fitted with adequate functional oil water separators and silt traps.

3.7 The proponent shall ensure compliance with the provisions of the Energy (Solar Water Heating) Regulations of 2012.

3.8 The proponent shall ensure that appropriate and functional efficient air pollution control mechanisms are installed to control all air emissions.

3.9 The proponent shall ensure that all equipment used are well maintained in accordance with the Environmental Management and Coordination (Noise and Excessive Vibration Pollution Control) Regulations of 2009.

3.10 The proponent shall ensure that all solid waste is handled in accordance with the Environmental Management and Coordination (Waste Management) Regulations of 2006.

3.11 The proponent shall comply with the relevant principal laws, by-laws and guidelines issued for development of such a project within the jurisdiction of the County Government of Kiambu, National Construction Authority, Ministry of Transport and Infrastructure, Architectural Association of Kenya, Ministry of Land, Housing and Urban Development, Ministry of Health, Directorate of Occupational Health and Safety Services, Kenya Urban Roads Authority, Kenya Wildlife Service, Water Resources Management Authority and other relevant Authorities.

3.12 The proponent shall ensure that environmental protection facilities or measures to prevent pollution and ecological deterioration such as installation of waste water treatment plant, functional drainage system, soil erosion prevention plan, solid and liquid waste management plan, emergency response plan/fixtures, energy and water saving fixtures, provision of adequate parking space, traffic management plans, landscaping programmes, dust control, rain water harvesting mechanisms are designed, constructed and employed simultaneously with the proposed project.

4.0 Notification Conditions

4.1 The proponent shall ensure that the mitigation measures are implemented during construction and operational phases.

4.2 The proponent shall seek written approval from the Authority for any operational changes under this license.

4.3 The proponent shall ensure that the Authority is notified of any malfunction of any system within 12 hours on the NEMA hotline No. **020 6006041/0786101100** and mitigation measures put in place.

4.4 The proponent shall keep records of all pollution incidences and notify the Authority within 24 hours.

4.5 The proponent shall notify the Authority in writing of its intent to decommission the facility **three (3) months** in advance.

5.0 Decommissioning Conditions

5.1 The proponent shall ensure that a decommissioning plan is submitted to the Authority for approval at least three (3) months prior to decommissioning.

5.2 The proponent shall ensure that all pollutants and polluted material is contained and adequate mitigation measures provided during the phase.

The above conditions will ensure environmentally sustainable development and must be complied with.

mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

CERTIFICATE OF VARIATION OF ENVIRONMENTAL IMPACT ASSESSMENT LICENSE

Certificate No: **NEMA/EIA/VC/636**

Application Reference No: **NEMA/EIA/VEIA/1044**

This is to certify that the Environmental Impact Assessment License No **EIA/PSL/2158** issued on 8/25/2015

to **Tatu City Limited.**

of

P.O Box 2739-00621, Nairobi.

regarding

Proposed Construction of a Precint 3BA.

whose objective is

Construction of precint 3 BA (light industrial commercial, residential, recreational, school, hospital and other associated amenities).

located at

Plot L.R No. 28867 (Grant No. 137858) within Tatu City, off Nairobi-Thika Superhighway in Ruiru, Kiambu County.

has been varied to

Extension of EIA License validity period by an additional twenty four (24) months.

with effect from **28 July, 2017** in accordance with the provisions of the Act.

Date: **28 July, 2017**

Signature

(Seal)

Director-General

The National Environment Management Authority.

P. T. O.

ISO 9001 BUREAU VERITAS Certification

UKAS ENVIRONMENTAL MANAGEMENT

ISO 9001 : 2008 Certified

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

Tel: (254-020) 605522/3/6/7, 601945
Mbl: 0724-253398, 0733-600035
Fax: 254-020-608997
Nairobi, Kenya
E-mail: dgnema@nema.go.ke

P.O. BOX 67839 00200
Popo Road
Nairobi, Kenya
Website: www.nema.go.ke

NEMA/SEA/5/2/11 **6th September 2011**

Tatu City Limited
P.O. Box 15738 – 00620
NAIROBI

RE: APPROVAL FOR THE STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) FOR THE PROPOSED TATU CITY –STRUCTURE MASTER PLAN AT TATU FARM, KIAMBU COUNTY

1. General Conditions

1.1. This approval is for proposed Tatu City - Structure master Plan at Tatu Farm, Kiambu County.

1.2. **The approval shall be valid for 24 months from the date of issue**

1.3. Without prejudice to the other conditions of this approval, the proponent shall implement and maintain an environmental management system, organizational structure and allocate resources that are sufficient to achieve compliance with the requirements and conditions of this approval.

1.4. The Authority shall take appropriate action against the proponent in the event of breach of any of the conditions stated herein or any contravention to the Environmental Management and Co-ordination Act, 1999 and regulations there under.

1.5. This approval shall not be taken as statutory defense against charges of environmental degradation in respect of any manner of environmental degradation not specified herein.

1.6. The proponent shall ensure that records on conditions of approval and monitoring and evaluation shall be available for inspection by NEMA's Environmental Inspectors.

MK/en

1.7. The proponent shall engage an Environmental Expert to undertake periodic Monitoring and Evaluation of the implementation plan to confirm the efficacy and adequacy of the Environmental Management and Monitoring Plan and submit a report of the same to NEMA.

1.8. The proponent shall comply with NEMA's improvement orders throughout the plan implementation cycle

2. Implementation Phase

2.1. The Proponent shall in consultation with Kenya Wildlife Service prepare an Integrated Wildlife Management plan to include wildlife paths and roaming area among other factors and submit the plan to NEMA before submission of site specific Environmental Impact Assessments (EIAs).

2.2. The Proponent shall obtain legal land ownership documents such as title deed or lease agreements as evidence of land ownership.

2.3. The Proponent shall undertake subsequent Environmental Impact Assessments (EIAs) for specific projects within the Plan and submit the same to NEMA before commencement of the projects.

2.4. The Proponent shall ensure strict adherence to the Environmental Management and Monitoring Plan developed throughout the Plan implementation cycle with emphasis on waste management strategy, waste water management strategy, traffic management strategy and protection of conservation zones.

2.5. The Proponent shall ensure that the implementation of the Plan adheres to zoning specifications, carrying capacities, protection of the conservation zones, (as per the ecological survey report) and land use plan as developed in the Plan.

2.6 The Proponent shall comply with the relevant principal laws, by-laws and guidelines issued for development of such a Plan within the jurisdiction of Municipal Council Ruiru, Water Resources Management Authority, KWS, Ministry of Lands, Ministry of Public Health and Sanitation, Ministry of Housing, Department of Occupational Health and Safety and other relevant Authorities.

2.7 The Proponent shall ensure the necessary infrastructure and utilities are Constructed before implementation of specific projects

3. Notification Conditions

3.1 The Proponent shall seek written approval from the Authority for any Implementation changes under this approval.

3.2 The Proponent shall seek written approval from the Authority if they intend to deviate from the justified/acceptable alternative in terms of location, design, technology etc.

3.3 The Proponent shall notify the Authority of its intention to review the Plan.

DR. AYUB MACHARIA
Ag: DIRECTOR GENERAL

Copy to:

The Director
Kenya Wildlife Service
P.O Box 40241-00100
NAIROBI

The Permanent Secretary
Ministry of Agriculture
P.O. Box 30009-00100
NAIROBI

The Regional Manager,
Athi Water Catchment Area,
Water Resources Management
Authority,
P. O. Box 1150-90100
MACHAKOS

District Environment Committee
C/o District Environment Officer
KIAMBU WEST

The Clerk
County Council of Kiambu
P.O. Box 170
KIAMBU

Provincial Environment Committee
C/o Provincial Director of Environment
CENTRAL PROVINCE

The Permanent Secretary
Ministry of Environment and
Mineral Resources
P.O. Box 30126-00100
NAIROBI

The Managing Director
Kenya Power and Lighting Co. Ltd
P.O. Box 30099-00100
NAIROBI

The Chief Engineer of Roads
Ministry of Roads
P.O. Box 30260
NAIROBI

The Director
Athi Water Service Board
P.O. Box 45283-00100
NAIROBI

MK/en

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

Tel: (254-020)-6005522 / 3 / 6 / 7, 6001945, 6008767
Mobile line: 0724 253 398, 0723 363 010, 0735 013 046, 0735 010 237
Telkom Wireless: 020-2101370
Fax: (254-020)-6008997
Hotline: 020-8077233, 020-6006041

P. O. Box 67839 - 00200
Popo Road, Nairobi, Kenya
E-mail: dgnema@nema.go.ke
website: www.nema.go.ke

NEMA/SEA/5/2/11

28th April, 2015

The Tatu City Limited
P.O. Box 16738-00620
NAIROBI

RE: APPROVAL FOR THE STATREGIC ENVIRONMENTAL ASSESSMENT (SEA) FOR THE PROPOSED TATU CITY

Refer to your letter dated 30th August, 2014 on the above-mentioned subject.

Condition 1.2 of the Strategic Environment Assessment approval for the Tatu City Structure Master Plan indicated that the approval shall be valid for **twenty-four (24) months**, within which you were required to commence undertaking Environmental Impact Assessment (EIA) for specific projects within the Plan. You had undertaken a number of EIA for specific projects within the Plan within the 24 months validity period. The approval granted for the SEA for the Tatu City Structure Master Plan is therefore still valid.

However, you are required to:

1. Provide periodic reports undertaken indicating the monitoring and evaluation of the Master Plan.

2. Notify the Authority on any modification and/or revision of the Master Plan to inform further necessary action.

Thank you for the willingness to comply.

ZEPHANIAH O. OUMA
For: DIRECTOR GENERAL

OS/jwn

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

Telcom Wireless: 020-2183718, 020-2101370, 020-2103696
Mobile Line: 0724 253 398, 0723 363 010, 0735 013 046
Incident Line: 0786 101 100

P. O. Box 67839 - 00200
Popo Road, Nairobi, Kenya
Email: dgnema@nema.go.ke
Website: www.nema.go.ke

NEMA/PR/5/2/011 **7th FEBRUARY, 2019**

Project Manager
Tatu city limited
P. O. Box 2739 – 000621
NAIROBI

REPORTS OF TATU CITY PROJECT MONITORING FOR THE QUARTER ENDING 31st DECEMBER 2019

Reference is made to a letter by Katrina Management Consultants Ltd, reference KMLC/LICENCE/VOL.1(2019)(2) submitting quarterly Environmental Monitoring reports on your behalf.

The Authority has reviewed the monitoring report and noted as follows:

i) Details of environmental parameters being monitored has been provided (Environmental, Social, Safety and Health parameters)

ii) The result of the monitoring exercise has been provided and compliance status noted as substantive (above 80%).

iii) New actions to be implemented has been indicated. Key among them is the Wildlife Management Actions to be undertaken in liaison with KWS.

The report is acceptable. You shall ensure that monitoring programme is undertaken holistically to ensure consistency in the delivery of the Tatu city's Environmental Management System and Safety Policy.

Please note that Environmental inspectors will undertake a verification exercise in accordance with regulations 41(2) of Environmental (Impact Assessment and Audit) Regulations 2003.

We thank you for the willingness to comply.

OUMA.O.Z
FOR: DIRECTOR GENERAL

Copied to: Katrina Management Consultants ltd
P. O. Box 67688 – 00200
NAIROBI.

APPENDIX C STAKEHOLDER ENGAGEMENT PLAN (SEP)

Proposed Tatu City Temperature-controlled Storage Facility, Tatu Industrial Park (TIP), Kiambu County, Kenya

Appendix C: Stakeholder Engagement Plan (SEP)

14 July 2020

Project No.: 0552902

The business of sustainability

Document title	Proposed Tatu City Temperature-controlled Storage Facility, Tatu Industrial Park (TIP), Kiambu County, Kenya
Document subtitle	Appendix C: Stakeholder Engagement Plan (SEP)
Project No.	0552902
Date	14 July 2020
Version	1.0
Author	As per the document history below
Client Name	Cold Solutions Kenya Limited (CSKL)

Document history

				ERM approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
1.0: Draft	00	Gideon Owaga and Barnabas Busheshe	Mike Everett	Mike Everett	14.07.2020	To be appended to the ESIA Project Report

Signature Page

14 July 2020

Proposed Tatu City Temperature-controlled Storage Facility, Tatu Industrial Park (TIP), Kiambu County, Kenya

Appendix C: Stakeholder Engagement Plan (SEP)

Mike Everett
Partner

Environmental Resources Management Consulting East Africa Limited

Senteu Plaza, 1st Floor, Lenana / Galana Road | Kilimani |

P.O. BOX 29170 – 00100 | Nairobi | Kenya

CONTENTS

List of Tables

List of Figures

Acronyms and Abbreviations

Name	Description
AWP	Annual Work Plan
BID	Background Information Document
CC	County Commissioner
CSKL	Cold Solutions Kenya Limited
CLO	Community Liaison Officer
COVID-19	Corona Virus Disease 2019
CSF	Cold Storage Facility
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
DCC	Deputy County Commissioner
DG	Director General
E&S	Environmental and Social
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
ESIA	Environmental and Social Impact Assessment
ESMMP	Environmental and Social Management and Monitoring Plan
ESMP	Environmental and Social Management Plan
FAQs	Frequently Asked Questions
GBV	Gender Based Violence
GO	Grievance Officer
GoK	Government of Kenya
GRM	Grievance Redress Mechanism
NEMA	National Environment Management Authority
PAP	Project Affected Person
SEP	Stakeholder Engagement Plan
SEZ	Special Economic Zone
TIP	Tatu Industrial Park
WBESS	World Bank Environmental and Social Safeguards
WWTP	Wastewater Treatment Plant

1. INTRODUCTION

Cold Solutions Kenya Limited (CSKL) is committed to developing and operating best-in-class cold storage and logistics operations in East Africa. Accordingly, the investment approach incorporates environmental and social considerations throughout the investment cycle, from initial investment decision through to exit.

CSKL aims to contribute to sustainable development in East Africa and is committed to act in an environmentally sustainable, socially responsible, and ethical manner while actively managing impacts and risks in relation to the environment, neighbouring communities, employee health and safety, and contractors and sub-contractors, and engage ethically and transparently with all stakeholders.

There is a severe shortage of cold storage and logistic services across East Africa resulting in large post-harvest food losses and a seasonally affected supply chains causing volatility in market pricing. The cold storage facilities and logistics operations to be developed by CSKL will result in positive development outcomes both directly, by reducing food losses and flattening market pricing, and also indirectly through businesses that will develop within the value chain. Food loss is a significant contributor to Greenhouse Gas (GHG) emissions (particularly methane) in Africa; therefore, a reduction in food losses will also contribute to a reduction in GHG. As such, from the onset, CSKL's activities are geared towards positive environmental and social impacts.

CSKL deals with a large network of suppliers and other third parties. It has set forth principles that are key for economic, social and environmental sustainability in order to ensure long-time success of CSKL and its stakeholders. Because of this, CSKL requires its suppliers to adhere to the principles embodied in the Supplier Code of Conduct and to use reasonable efforts to ensure that their own suppliers will also comply with these principles.

1.1 Project Overview

The Project will have the following major components (all of which described in details in the ESIA):

- 1,200 m^2 warehouse space with temperature-controlled areas ranging from 18^0C to - 40^0C;
- Storage of perishable goods (meat, vegetables, fish) and pharmaceuticals;
- Offices and worker facilities included in the warehouse footprint;
- Loading bays and parking for associated goods transport logistics (approximately 30-40 trucks);
- Wastewater Treatment Plant (WWTP) for food processing. There will be a food processing area in the facility (to be installed after the commencement of operations).

The facility is being designed and procured to meet Green Building Certification. Figure 1.1 below presents a locality map of the proposed Project within Tatu Industrial Park while

Figure 1.2 presents a conceptual design for the proposed Project.

Figure 1.1: A locality Map of the Proposed Project within Tatu Industrial Park

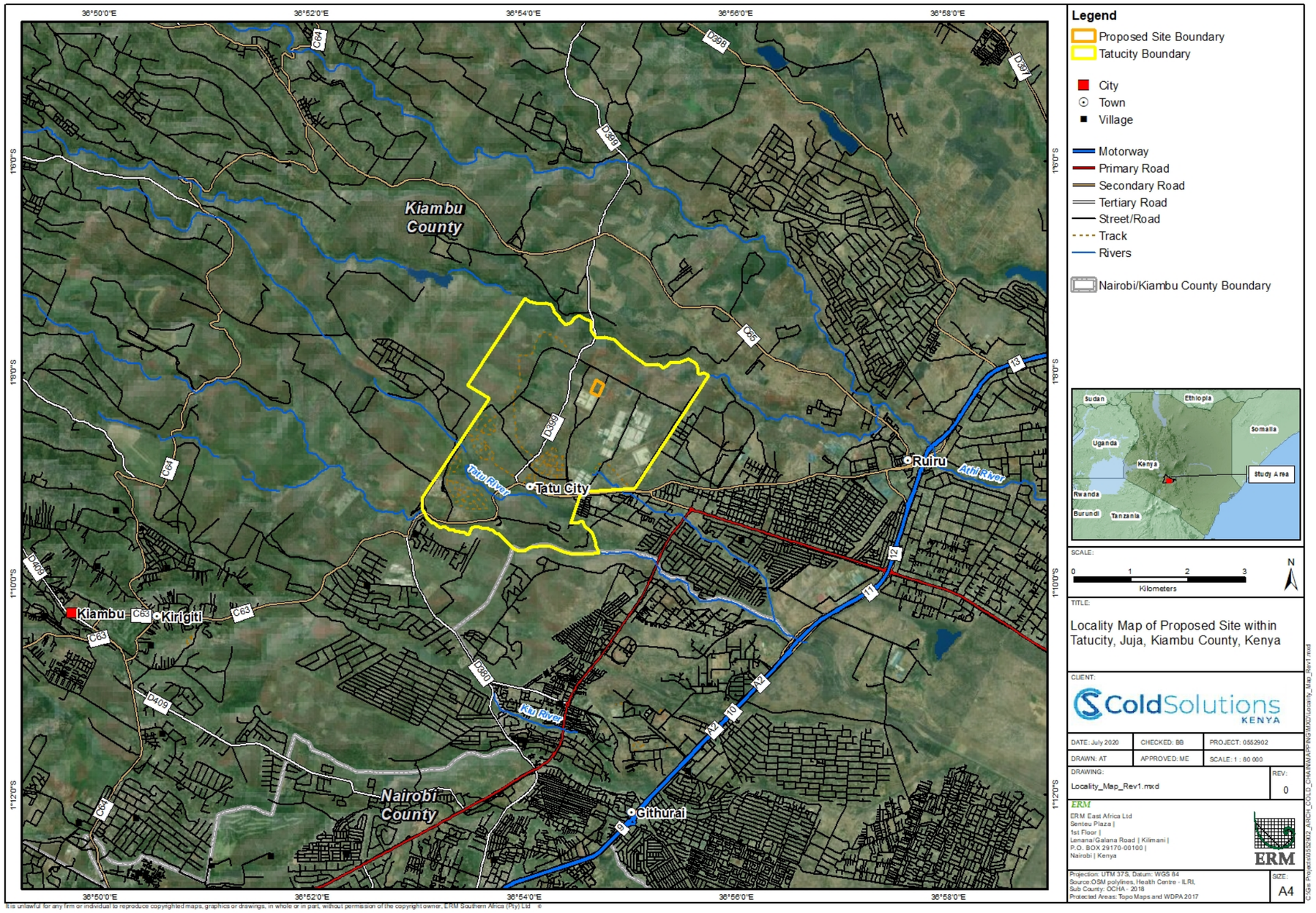


Figure 1.2 Conceptual Design of the Proposed Project

1.2 Project Site Characteristics

Table 1.1 presents a summary description of the Project Site.

Table 1.1: Summary of Project Site Characteristics

Description	Characteristics
Site Description	The Project site is located within Tatu City Industrial Park (TIP) which is a 6-Acre plot sloping north to south (6m) with light vegetation cover. The plot is partly modified and some areas used for spoil disposal from other plot construction activities.
Site Access	TIP is easily accessed via the A2 national highway and then the C63 national road. TATU City and TIP have new asphalt internal roads with 30 T load capabilities.
Land acquisition	The plot is in the wider SEZ that has undergone a full ESIA and associated permitting with the relevant national competent authorities (including NEMA). The facility plot is being acquired via the SEZ's permitting process. The mother title (L.R. No. 28867/1) is held as 99-year lease from Nov 2008.
Environmental setting and sensitivities	TATU City has been cleared and modified as part of the wider TATU City master plan. Phase 1 of the TIP has full utilities installed whilst Phase 2 is commencing these works. There are no know environmental sensitivities.
Associated facilities	It is envisaged that the facility will undertake some food processing requiring water treatment. The type of processing and therefore water treatment technology is not known at this stage. It will be confirmed during the concept design phase and subject to assessment as part of the wider facility Risk Assessment undertaken by an environmental consultant. TATU City provides the remaining services (utilities).
Flora and fauna	There are no known sensitivities around flora and fauna. There is a Mugumo tree on the plot – however local communities have confirmed this is not a sacred tree. There are some shade trees on the south side of the plot. The rest of the site is modified and covered with light vegetation.
Land ownership and current land uses	The area is owned by Rendeavour (see land acquisition), a real estate developer, and current land uses in the TIP are light industrial. In the wider Tatu City, there are commercial and residential developments.

Description	Characteristics
Nearby receptors	The plot is surrounded by other light industrial installations in various stages of implementation i.e. planning, construction, and operations. There are no known nearby sensitive receptors (human or environmental).

1.3 Purpose of the Stakeholder Engagement Plan

This Stakeholder Engagement Plan (SEP) has been prepared for the proposed Project (Cold Storage Facility (CSF)) and details the approach to engaging stakeholders as part of Environmental and Social Management and Monitoring (ESMMP).

The SEP has been prepared in accordance with National legislation and Lender's requirements and therefore aims to ensure engagement that is free of manipulation, interference, coercion and intimidation.

This SEP:

- Outlines the approach and plans to be adopted and implemented during engagement, showing how the engagement process will be integrated into the ESIA process and guidance for post ESIA engagements;
- Identifies stakeholders and the engagement mechanisms through which they will be included in the process;
- Serves as a way to document the stakeholder engagement process; and
- Identifies the Lender requirements for the Project Proponent and their engagement process.

This SEP should be seen as a "living document" that will be updated and adjusted continuously as Project planning and implementation evolves. It will continue to provide a framework to manage effective and meaningful engagement with stakeholders, throughout the life of the Project.

1.4 Objectives of Stakeholder Engagement

The main objectives of stakeholder engagement are to:

- ***Identify relevant stakeholders for the Project:*** Involving stakeholders to facilitate inclusive communication and capture a wide range of issues and concerns.
- ***Promote cooperation and positive participation from stakeholders:*** Ensuring that an open, inclusive and transparent process of culturally appropriate engagement and communication is undertaken, to ensure that stakeholders are well informed about the Project. Information shall be disseminated using the most effective methods and structures.
- ***Distribute accurate Project information in an open and transparent manner:*** Ensuring that stakeholders, particularly those directly affected by the proposed development, have information at their disposal with which to make informed comments and enable them to plan. This reduces levels of uncertainty and manages expectations. Information should allow affected parties to develop an understanding of potential impacts, risks and benefits and an open and transparent approach is central to achieving this aim.
- ***Form partnerships to promote constructive interaction between all parties, developing relationships of trust between the Project and stakeholders:*** This will contribute to proactive interactions and avoid where possible, unnecessary conflicts based on rumour and misinformation. Identifying structures and processes through which to deal with conflicts and grievances, in contrast to attempting to quash any disputes, would afford the Project a better understanding of stakeholder concerns and expectations thereby increasing the opportunities to increase the Project's value to local stakeholders.

- ***Record and address public concerns, issues and suggestions:*** Documenting stakeholder issues allows Project decisions to be traced and motivated. This approach addresses potential concerns that stakeholder engagement may be a token gesture by the developer that meets requirements but that it is not taken seriously in the Project planning.
- ***Manage stakeholders' expectations:*** Ensuring that the proposed Project does not create or allow unrealistic expectations to develop amongst stakeholders about proposed Project benefits. The engagement process will serve as a mechanism for understanding and managing stakeholder and community expectations, where the latter will be achieved by disseminating accurate information in an accessible way.
- ***Fulfil national and international requirements for consultation:*** Ensure compliance with both local regulatory requirements and international best practice. One of the key outcomes of engagement should be free, prior and informed consultation of stakeholders, where this is understood to be: engagement free of external manipulation or coercion and intimidation.
- ***Ensure that appropriate Project information on environmental and social risks and impacts is disclosed to stakeholders:*** In a timely, understandable, accessible and appropriate manner and format.

1.5 Structure of the SEP

The remainder of the document is structured as follows:

- **Section 2:** Outlines the Key Standards and Legislation guiding Stakeholder Engagement.
- **Section 3:** Presents Project Stakeholder Identification and Mapping.
- **Section 4:** Outlines the Approach to the Stakeholder Engagement Process/ Communication Plan.
- **Section 5:** Presents ESIA Phase Stakeholder Engagements
- **Section 6:** Next steps in Stakeholder Engagement/ Post-ESIA Stakeholder Engagement
- **Section 7:** Outlines the Grievance Redress Mechanism.
- **Section 8:** Outlines the Monitoring and Reporting.

2. KEY STANDARDS AND LEGISLATION GUIDING STAKEHOLDER ENGAGEMENT

2.1 Introduction

The stakeholder engagement process has been designed to ensure compliance with Kenyan legislative requirements, as well as the IFC Performance Standards on environmental and social sustainability. This Chapter presents the relevant standards and legislation identifying the key Kenyan and IFC requirements for engagement.

2.2 National Requirements for Stakeholder Engagement

2.2.1 The Kenyan Constitution

Part II Section (I) of the Kenyan Constitution encourages public participation in the management, protection and conservation of the environment.

Throughout the Project lifecycle, the Project will ensure the effective participation of the public in the Project. This will include gathering information from stakeholders on potential and actual impacts, and their management in a manner that strives to protect both the physical and social receiving environments of the Project Area.

Ongoing engagement during construction and operation will ensure that the public continue to be involved in the protection of the biophysical and social environment.

The SEP is therefore a key tool in ensuring the fulfilment of the Constitution in a systematic manner by the Proponent.

2.2.2 Environmental Legislation

Part II Section (I) of the Kenyan Constitution encourages public participation in the management, protection and conservation of the environment.

In conducting the ESIA and stakeholder engagement process, the Project is ensuring the effective participation of the public in the Project, as well as identifying potential impacts, and how these can be managed in a manner that strives to protect both the physical and social receiving environments of the Project area.

Ongoing engagement during next stages of Project planning and development will ensure that the public continue to be involved in the protection of the biophysical and social environment.

2.2.3 Environmental Legislation

2.2.3.1 The Environmental Management and Coordination Act, 1999, Amended 2015 (EMCA)

Section 59 of EMCA (1999) outlines the stakeholder engagement requirements for both the Contractor and Project Proponent.

2.2.3.2 The Environmental (Impact Assessment and Audit) Regulations, 2003 and 2016

These Regulations outline various requirements with regards to stakeholder engagement. Section 8 and 17 provide specific requirements for stakeholder engagement during the ESIA process. In particular, Section 17 of the Regulations states that “During the process of conducting an environmental impact assessment study under these Regulations, the proponent shall in consultation with the Authority, seek the views of persons who may be affected by the project.”

2.3 The legislative requirements outlined in the Regulations specifically relate to stakeholder engagement activities to be conducted during the ESIA process. International Requirements

The IFC PS on Environmental and Social Sustainability, effective since 1 January 2012 and the IFC Environmental, Health and Safety (EHS) Guidelines are generally accepted as the benchmark of best practice for environmental and social safeguards. These standards include guidelines for engagement.

The IFC Performance Standard 1 requires project proponents to engage with affected communities through disclosure of information, consultation, and informed participation, in a manner commensurate with the risks to and impacts on the affected communities. PS1 contains clear requirements for community engagement, disclosure of information and consultation as well as the management of grievances throughout the Project. Box 2.1 below outlines the main requirements for consultation and disclosure under PS1, the umbrella Standard on the Assessment and Management of Environmental and Social Risks and Impacts.

The process of conducting stakeholder engagements presented in Box 2.1 is also consistent with the requirements of the African Development Bank (AfDB)'s Operational Standard (OP) on consultation.

Box 2.1 Requirements for Stakeholder Engagement as per IFC PS1

Aim

To ensure that affected communities are appropriately engaged on issues that could potentially affect them; to build and maintain a constructive relationship with communities; and to establish a grievance mechanism.

Who to consult

- Directly and indirectly affected communities;
- Positively and negatively affected communities / individuals;
- Those with influence due to local knowledge or political influence;
- Elected representatives*;
- Non-elected community officials and leaders;
- Informal/traditional community institutions and/or elders; and
- Indigenous People, where the Project is identified to have adverse impacts on them.

** Where engagement relies substantially upon a community representative the client will aim to ensure that the views of affected communities are communicated, and that the results of consultation are communicated back to the community.*

When to consult

Consultation should begin as early as possible or at the latest prior to construction. Consultation should be an on-going process throughout the life of the Project, i.e. be iterative. Consultation should also allow for a feedback (grievance) mechanism where affected people are able to present their concerns and grievances for consideration and redress.

What to consult on

- Disclosure of Project information (purpose, nature, scale);
- Disclosure of Project ESIA documentation; and
- Updates, actions and proposed mitigation measures to address areas of concern for affected communities.

How to consult

For projects with significant impacts, the IFC requires an Informed Consultation and Participation (ICP) approach, which enables an in-depth exchange of views and information with affected communities. The consultation process is designed to be iterative such that mitigation and its implementation is informed by stakeholder views, is tailored to local needs, and identifies appropriate mechanisms for sharing development benefits and opportunities.

The Project should ensure that:

- Engagement is undertaken sufficiently to enable key messages to be absorbed and considered;
- All written and oral with communications are in local languages and readily understandable formats;
- There is easy access to both written information and to the consultation process by relevant stakeholders;
- Oral and visual methods are used to explain information to non-literate people;
- Consultation activities respect local traditions regarding discussion, reflection, and decision making;
- Care is taken in assuring that groups being consulted are representative (with adequate representation of women, vulnerable groups, and ethnic or religious minorities, and separate meetings for various groups, where necessary); and
- There are clear mechanisms to respond to people's concerns, suggestions and grievances.

3. STAKEHOLDER IDENTIFICATION AND MAPPING

3.1 Introduction

Stakeholders include individuals or groups that may influence or be impacted by the Project directly or indirectly and those who may have interests in a Project and/or the ability to influence its outcome, either positively or negatively. Stakeholders may include locally affected communities or individuals and their formal and informal representatives, national or local government authorities, politicians, religious leaders, civil society organizations and groups with special interests, the academic community, or other businesses.

3.2 Stakeholder Identification

The stakeholder identification process establishes which organisations and individuals may be directly or indirectly affected (positively or negatively) by the proposed Project, or have an interest in it. In order to develop an effective SEP it was necessary to determine exactly who the stakeholders are and understand their priorities and objectives in relation to the proposed Project. By classifying and analysing the stance, influence, capacity and interests of stakeholders, it was then possible to develop a SEP that was tailored to the needs of different stakeholder groups.

It should be noted that stakeholder identification is an on-going process, requiring regular review and updating as the Project progresses. For the Project, stakeholders have been, and will continue to be identified on an on-going basis by:

- Identifying the different categories of stakeholders who may be affected by or interested in the Project.
- Identifying specific individuals or organisations within each of these categories taking into account:
  - The geographical area over which the Project may cause impacts (both positive and negative) over its lifetime, and therefore the localities within which stakeholders could be affected; and
  - The nature of the impacts that could arise and therefore the types of government bodies, Non-Governmental Organisations (NGOs), businesses, academic and research institutions, international organizations and other bodies who may have an interest in the proposed Project.

The details of stakeholders identified and consulted during the ESIA stage are included in Appendix E of the ESIA Project Report) and it is expected that more stakeholders will be identified and engaged throughout the Project lifecycle. In particular, new stakeholders are expected to come to the attention of the Project through continuing engagement activities and unsolicited contacts made with the Project.

3.3 Stakeholder Analysis

Once stakeholders were identified, a basic analysis was undertaken to understand their connection to the Project as well as their needs and expectations regarding engagement or consultation. Table 3.1 below details the potential Project stakeholder groups that were identified and explains their connections to the proposed Project.

Table 3.1 Identified Project Stakeholders

Stakeholder Category	Stakeholder Group	Connection to the Project	Stakeholders Required to be consulted	Stakeholders TBC	Comment
National Government	National Regulatory Bodies	National Government are of primary	National Environment Management Authority (NEMA)	▪ Ministry of Transport, Infrastructure	The aim is to conduct a stakeholder engagement meeting

Stakeholder Category	Stakeholder Group	Connection to the Project	Stakeholders Required to be consulted	Stakeholders TBC	Comment
	Government Agencies	importance in terms of establishing policy, granting permits or other approvals for the proposed Cold Storage Facility, and monitoring and enforcing compliance with Kenyan Law throughout all stages of the Project life cycle.		Housing, Urban Development and Public Works ▪ Ministry of Health ▪ Ministry of Agriculture, Livestock, Fisheries and Irrigation ▪ Ministry of Lands and Physical Planning	with the relevant departments at the County Level and determine whether further engagements are required at the national level. In all cases NEMA will be consulted.
County Government	Kiambu County Government	The County Government is also of primary importance as it is responsible for implementation of legislation, and development plans and policies at the County level. The County Government will also have a role in issuing permits and processing applications. Finally, the County Government has a role in ensuring the views of the communities it represents are presented to the Project.	▪ Office of County Governor Ministries (Departments) – Department of Water, Environment, Energy & Natural Resources – Department of Agriculture, Livestock and Irrigation – Department of Lands, Housing, Physical Planning, Municipal Administration & Urban Development – Department of Education, Gender, Culture and social Services – Department of Health services – Department of Roads, Transport & Public Works – NEMA County Director of Environments	N/A	These are the departments identified as being relevant to the project development. The aim is to have one meeting with all relevant departments present and the DCC.

Stakeholder Category	Stakeholder Group	Connection to the Project	Stakeholders Required to be consulted	Stakeholders TBC	Comment
			▪ Deputy County Commissioner (DCC)		
Tatu City		The DCC is the planning control function at Tatu City who are responsible for approving the project design in line with their approved guidelines.	Development Control Committee	N/A	The interface with Tatu City will be via the DCC who will coordinate with other relevant departments – e.g. Tatu Connect, Community Liaison
Traditional Authorities	Administrative and Customary authorities such as Village Elders	Local community leaders acting as representatives of their local community. The traditional leaders and local authorities are the gatekeepers and play a key role in mobilization and maintaining law and order	▪ Area Chiefs ▪ Sub-Chief ▪ Elders	N/A	The meeting with the Area Chief and Elders will be organised in coordination with Tatu with the DCC and member of Tatu Community Liaison present for the meeting.
Neighbours	Neighbouring Companies within Tatu City	Companies that may be directly or indirectly affected by Project activities	▪ E.g. Africa Logistics Properties (ALP) Company and other neighbouring Companies	Property Owners Association – consulted as part of the DCC approval process	CCS in coordination with Tatu will consult with immediate neighbours which is understood to be two operating companies. Tatu City to confirm other immediate neighbours that may be relevant.

3.4 Stakeholder Mapping

It is important to tailor the engagement methodology to the targeted stakeholders and their relationship to the proposed Project (their influence and interest). Stakeholder mapping seeks to understand stakeholders' level of interest in the Project and influence in decision making as well as on other Project stakeholders, and will continue throughout the Project lifecycle. It is also important to not that stakeholder interests and level of influence is dynamic and changes over time; hence the need to periodically update the stakeholder mapping as well as the wider SEP. Mapping will also help identify stakeholders who may find it more difficult to participate in consultation activities and are affected by or interested in the proposed Project because of their marginalised or vulnerable status (such as disabled or elderly people).

Stakeholder mapping considers:

- Who is affected by the proposed Project and how;
- Who the formal and informal community leaders are and to what degree they are seen as representative;
- Whether the stakeholder supports, is neutral towards or is opposed to the proposed Project;
- Each stakeholder's interests and concerns in relation to the proposed Project; and
- How different stakeholders can influence the proposed Project and what risks or opportunities this presents.

According to each stakeholder's levels of interest or impact on the proposed Project, different levels of engagement intensity will be employed. Stakeholders have been mapped using the matrix presented in Table 3.2 below.

Table 3.2 Stakeholder Mapping Matrix

Level of Interest	Low	Medium	High
High		Traditional Authorities Neighbouring Companies	Regulatory Bodies NEMA, DCC, Ministry of Housing and Infrastructure, Water Department (latter two via the DCC process)
Medium	Business Organizations Financial Organizations	NGOs CBOs	County Government Ministries National Government
Low		Academic Research Organizations	

Level of Influence

4. APPROACH TO THE STAKEHOLDER ENGAGEMENT PROCESS/ COMMUNICATION PLAN

4.1 Basic Principles of Stakeholder Engagement

As per the IFC's Good Practice Handbook on Stakeholder Engagement, ideally, a good consultation and engagement process should be:

- targeted at those most likely to be affected by the project;
- early enough to scope key issues and have an effect on the project decisions to which they relate;
- informed as a result of relevant information being disseminated in advance;
- meaningful to those consulted because the content is presented in a readily understandable format and the techniques used are culturally appropriate;
- two-way so that both sides have the opportunity to exchange views and information, to listen, and to have their issues addressed;
- gender-inclusive through awareness that men and women often have differing views and needs;
- localized to reflect appropriate timeframes, context, and local languages;
- free from manipulation or coercion;
- documented to keep track of who has been consulted and the key issues raised;
- reported back in a timely way to those consulted, with clarification of next steps; and
- ongoing as required during the life of the project.

***Note**: There is no one right way of undertaking consultation. Given its nature, the process will always be context-specific.*

4.2 Objectives of the Communication Plan

The objective of this communication plan is to define the communication requirements for the Project and how information will be shared. This plan describes the following:

- Information that will be communicated including the level of detail and format;
- How the information will be communicated – in email, telephone, web portal, WhatsApp, etc.
- When information will be distributed, the frequency of Project communication, both formal and informal;
- Who is responsible for communicating Project information;
- Communication requirements for all Project stakeholders;
- How sensitive or confidential information is communicated and who must authorize this;
- How changes in communication or the communication process will be managed;
- Any constraints, internal or external, which may affect Project communication; and
- The escalation process for resolving any communication-based conflicts or issues.

4.3 Key Issues that should be communicated

The following are some of the important messages that will be communicated to the Stakeholders:

- Background of the Project;
- Project Description and Location;
- Project Activities;
- The potential benefits and Impacts posed by the Project;
- The Process that will be followed to engage with stakeholders; and
- How and when stakeholders can participate in the Project.

It is also important that the following information is communicated to the Project stakeholders on a needs-basis:

- Construction activities;
- Any interruptions of service utilities;
- Potential impacts of construction and operation activities; and
- The list of complaints that have been received and resolved – this would ensure that the stakeholders are not relying on rumours as their main source of Project information.

Particularly, there will be need to inform the Stakeholders of all planned Project activities and potential risks and impacts on them, as well as opportunities.

4.4 When to Communicate

Project communication will be structured and offered regularly but with the flexibility of responding to issues as they emerge. Broadly, stakeholder engagement for the proposed Project has been categorised into ESIA and Post-ESIA engagement activities as described in details in Chapters 5 and 6 of this SEP.

4.5 Communication Methods

Stakeholder engagement aims at making information about the Project accessible to interested and affected parties. Communicating such information in a manner that is understandable to the Project stakeholders is an important first (and ongoing) step in the process of stakeholder engagement.

A variety of communication methods are used to engage with stakeholders reflecting their level of authority, socio-economic context, and cultural and intellectual factors such as level of education and literacy.

English is the official language of Kenya, and is used universally in schools in addition to Kiswahili, which is the national language. Although there are a number of other ethnic-related languages, the national language of Kiswahili is quite often spoken throughout the country and the main mode of communication. Therefore, for all the stakeholder engagements, particularly with local community members, the main mode of communication will be through the Kiswahili language; any information communicated in English will be translated into Kiswahili to ensure that it is fully understood by the local stakeholders. For official meetings and communication, English will be the main mode of communication given that it is the official language of the country.

Box 4.1below provides an overview of the common methods that can be used to disseminate information to stakeholders depending on the stakeholder group and literacy levels.

Box 4.1 Common Methods used in Information Dissemination

Focus Group Discussion: Targeted discussion with a group of individuals with similar characteristics such as women, men, youth, indigenous peoples and Project Affected Households (PAHs) to capture targeted information that may not be captured in an open space. These meetings also create a platform for vulnerable or marginalised groups to freely voice their opinions and concerns to be factored into the Project design and implementation of the Project elements and programmes.

Key Informant Interview: One-on-one meeting with a professional or individual with knowledge and expertise about a specific subject area that can provide targeted information in relation to specific aspects of the project for consideration in project design and implementation of project elements or programmes.

Formal Meeting: Formal meeting to present project information to a group of individuals with authority or that may be a key stakeholder, such as the government or NGOs, and to gather feedback for consideration in Project design and implementation of Project elements or programmes.

Community Meeting/ Barazas: Gathering of all members of the community residing in a particular area to present project information and gather feedback for consideration in project design and implementation of project elements or programmes.

Household Surveys: Administering a household survey questionnaire to each of the households that will be directly affected by land acquisition activities to have a good understanding of their household characteristics and livelihoods. This method is often used during the conduct of RAPs

4.5.1 Covid-19 Implications on Consultation Activities

Given the current global situation with COVID-19, the ESIA engagement process largely employed remote engagement techniques summarised in Table 4.1 below

Table 4.1: Communication Methods and Tools Used in the ESIA Process

Tool	Purpose	Stakeholder Groups	Use
Background Information Document (BID)	Provides an overview of a specific topic being discussed. Allows stakeholder to and have a line of contact with the developer should they have any questions.	All	Electronically distributed to identified stakeholders e.g. Government, Ministries, Parastatals and regulatory authorities.
Telephone calls	Provides an opportunity for stakeholders to give verbal feedback and make inquiries about the project.	All	Used to present the project and seek verbal feedback from the stakeholders
Reports and plans	Technical written reports that present details on potential impacts of the Project and how CSKL will manage the environmental and social aspects of the Project to minimize adverse	Government/ regulatory institutions, Project lenders, professional, academics and civil society/public	Available online/ shared electronically, Project office, relevant government authorities and public places.

Tool	Purpose	Stakeholder Groups	Use
	impacts and maximize benefits. This includes the ESIA Project Report and this SEP.		
Power Point presentations	Detailed presentation to provide technical information regarding the Project.	National and County authorities NGOs/institutions Key informants/professionals	Sent electronically or used during remote presentations (e.g. zoom or skype)
Informal discussion while touring the Project Site	Ground-truth the current land use and community values at the Project Sit.	Local Leaders, Elders and Cultural Institutions	Used at the time of Site visit.

5. ESIA PHASE STAKEHOLDER ENGAGEMENT

5.1 Stakeholder Meetings Held

Table 5.1 below presents the list of Stakeholder Engagements conducted while a summary of the key issues raised are presented in *Section5.2*.

Table 5.1 Stakeholder Meetings Held

Stakeholder	Mode of Engagement	Engagement Date	Venue
Tatu City Management	Key Informant Interviews (KII)	20th May 2020.	Via Zoom
		3rd June 2020.	Tatu City Management Offices
Tatu City Training Academy	KII	3rd June 2020	Tatu City Training Academy
Area Chief, Ruiru	KII	16th April 2020.	Assistant Chief's Office
Katrina Management Consultants Limited	By email	18th June 2020	By email
Office of the Deputy County Commissioner, Ruiru Sub-county	Teleconference and by email	1st July 2020	Teleconference and by email
Ruiru Village Headmen	KII	29th June 2020	Area Chief's Office
Hankar Trading Company Limited	By email	10th July 2020	By email

5.2 Outcomes of ESIA Process Stakeholder Engagement

As indicated in Table 5.1 above, several Stakeholder Engagement meetings were held during the ESIA process.

The key questions and concerns raised by stakeholders are outlined in Table 5.2. The Background Information Document (BID) used in stakeholder engagement and the detailed results of the ESIA stakeholder engagement process are presented in Appendices C and D of the ESIA Project Report.

Table 5.2: Outcomes of ESIA Process Stakeholder Engagement

Main Theme brought up by Stakeholders	Key stakeholders issues/ comments
On Stakeholder Engagement	Consult widely, including consultations with Tatu City, the District Commissioner (DC), County Commissioner (CC), Clerk County assembly of Kiambu, Area Chief and the village elders. Other additional stakeholders can include neighbouring communities which includes: • Ruiru Juja Water and Sewerage Company (RUJUWASCO); • Tatu City Water and Sewerage Company (TCWSC); • STECOL Corporation (In charge of Road Construction in Tatu City); • Unity Homes; • Tatu City Training Academy; • Hunkar Gas; and • Tianlong Cylinder Company.
	It is commendable that Tatu City have built a strong and positive relationship with the community. The Tatu brand is based on the Mugumo Tree.

Main Theme brought up by Stakeholders	Key stakeholders issues/ comments
	Consider Stakeholder issues raised during stakeholder consultation process.
On Positive impacts/ opportunities	▪ Employment opportunities for the local community members during construction and operations. ▪ Achievement of a cold storage facility. ▪ Price stability for agricultural products (meat, horticulture products, etc). ▪ Food security (as a result of improved storage). ▪ Achieved of agriculture best practice (related to storage of agricultural produce). ▪ Enhanced trade with regards to fresh products. ▪ Contributes towards development of Tatu City and particularly make it a hub for cold storage facility.
Shared facilities	There are shared facilities within the Project area, such as electricity, water, sewer lines etc. It is best practice to inform the neighbours of any planned activities or disruptions that may take place. This will also help in good management and in harmonised planning and development.
On Information already shared with the local communities	The Communities were already informed about the mixed developments.
	Tatu City has a community Liaison officer (CLO) who can help with information dissemination.
Cultural constraint: Information provided on the process required for the removal of the Mugumo Tree on the Project Site.	Tatu City will take over the handling of the Mugumo Tree and have a liaison officer who will manage the ceremonial process required. Tatu City will work closely with CSKL and ERM to ensure the process is well followed and documented.
	The Mugumo tree is considered sacred by the Kikuyu community and it was very important to make sure the correct process is followed, before deciding whether it can be removed. (Note that the required process was subsequently established but the required ceremony is yet to be conducted)
	It has been confirmed by the Council of Elders that the tree can be removed subject to a ritual being performed given that no 'binding ceremony' has taken place historically at this tree and it is not used for active cultural services. Tatu City in coordination with CSKL is organising for this ceremony to take place.
Social issue: Coffee Plantation Resettlement/Displacement	During the development of Tatu City, there was only economic displacement (displacement of the coffee plantation); however, there were no communities that got displaced as a result of the economic zone development.
	According to the Community Liaison Officer – there are ~100 people that were affected by this economic displacement. Tatu City has provided for these people and their subordinates through exclusive free training and job opportunities for those affected.
	Majority of these displaced people are currently working in Tatu City construction projects and in Tatu City's coffee plantation (~5000 ha coffee farm).
	Tatu City is providing better compensation for its employees - currently, the minimum wage in Tatu City is 500 KSH/day whereas people who used to work in the coffee plantation were paid 30 KSH/16 kg of coffee picked.

Main Theme brought up by Stakeholders	Key stakeholders issues/ comments
	Those who were affected were mainly farmers who depended on Coffee picking as a source of livelihood. They were identified, trained and absorbed through employment within Tatu City for jobs such as carpenters, tailors, etc
Stormwater management	The stakeholders mentioned that Tatu City should implement a long-term solution for stormwater management since whenever it rains, some places flood and, stormwater damages roads and property. This issue became noticeable after converting the former coffee plantations into Tatu City and is likely to get worse as more plots within the estate get developed.
Corporate Social Responsibility (CSR)	As part of CSR, Tatu City should consider construction of a bridge and culvert to OJ-Kogeria Road to improve the drainage system/ management of stormwater especially during heavy storms.
Management of Negative Impacts	▪ Management of dust and noise emissions. ▪ GHG emissions ▪ Stormwater management/ drainage ▪ Potential of ammonia leakage and associated impacts. ▪ Waste Management with reference to potential organic waste and effluent management. ▪ Increased usage of the Tatu City Infrastructure. ▪ Smell of organic waste during operation. ▪ Occupational Health and Safety (OHS) diseases especially for those who will work in the cold storage facility for a long period.

6. NEXT STEPS IN STAKEHOLDER ENGAGEMENT/ POST ESIA STAKEHOLDER ENGAGEMENT

The Project is committed to continuous engagement with stakeholders throughout the life of the Project. Plans and activities implemented during the next stages of Project planning and development will therefore feed into and inform on-going stakeholder engagement as the Project moves into these stages, ensuring that two-way dialogue with those affected, both positively and negatively by the proposed Project is maintained.

The aim will be to ensure that the Project remains in contact with all interested parties and cognisant of their concerns, and that these are addressed in an effective and timely manner. At each stage a detailed schedule of activities and events will be developed and widely disseminated so that people know how to interact with and participate in the Project.

In particular, post ESIA stakeholder engagement is expected at the following Project stages:

- Pre-construction stage where stakeholders who will be directly affected by the Project will be notified and discussions will be held with them.
- Mobilisation phase: At this stage, information regarding the location of associated project infrastructure, detailed construction schedule, expected construction team (including employment opportunities) will be shared with the Project stakeholders.
- Construction phase: Continuous engagement with the Project stakeholders throughout the construction phase to keep them updated of the construction activities as well as any changes to the initial Project plans that may happen during this phase.
- Demobilisation phase notifying the stakeholders the end of the construction activities and close-out of outstanding construction phase related grievances.
- Operations Phase: Continuous engagement with stakeholders to keep them updated of the operation activities including available products and services as well as any changes made during this phase.
- Decommissioning Phase: Currently there are no plans to decommission the Project constructed; however, should this arise in future, the relevant stakeholders at that time will need to be appropriately engaged to minimise related negative impacts. It is anticipated that the current baseline information will have been completely changed at that time (the Project Area is expected to be a fully developed Tatu City Industrial Park at that time) and thus it is recommended that a decommissioning engagement plan is prepared at that stage, at least three months prior to the commencement of the decommissioning activities. The Project will consult with stakeholder groups, to ensure that feedback regarding the impacts of decommissioning is considered in the Plan. Each stage of the stakeholder engagement process will be documented in line with the monitoring and reporting requirements set out in Section 8 of this SEP.

7. GRIEVANCE REDRESS MECHANISM

7.1 Introduction

The Project will need to establish a specific mechanism for dealing with stakeholder grievances. A grievance is a complaint or concern raised by an individual or organisation who judges that they have been adversely affected by a Project during any stage of its development. Grievances may take the form of specific complaints for actual damages or injury, general concerns about Project activities, incidents and impacts, or perceived impacts.

This section outlines the approach to managing grievances, which will be used during the Project implementation (post-ESIA Phase).

7.2 Principles of Grievance Mechanism

A grievance mechanism should be based on the following principles:

- ***Transparency and fairness:*** The process for grievance resolution should be transparent, in harmony with the local culture and in the appropriate language. It should explicitly assure potential users that the mechanism will not impede their access to other judicial or administrative remedies.
- ***Accessibility and cultural appropriateness:*** All stakeholders including every member of a community or group should have access to the grievance procedure. Any individual or group that is directly or indirectly affected by the Project's and its contractors' activities, can raise a grievance.
- ***Openness and communication regularity:*** There should be multiple channels available for individuals and groups to choose their preferred method for lodging grievances
- ***Channels of communication*** should be kept open throughout the process of addressing each grievance and up to three months after the situation has been resolved.
- ***Written records***: All grievances should be registered on a Complaints Registration Form and tracked through to Complaints Resolution Form. This should include documentation of how the grievance has been resolved.
- ***Dialogue and site visits:*** All grievances should warrant discussions with the complainant and a site visit to gain a first-hand understanding of the nature of the concern. The purpose of the visit is to verify the validity and severity of the grievance.
- ***Timely resolution:*** The Project aims to resolve 90% of grievances within 30 days. Grievances that have not been resolved in this period should at a minimum have been acknowledge and investigated.

7.3 Project Grievance Redress Process

The Project grievance mechanism will be managed by the CSKL CLO or equivalent personnel and will involve four main steps, that is, reception/ log/ record of the grievance, investigation and site inspection, response, and monitoring and evaluation (Figure 7.1). These processes are elaborated below:

Figure 7.1: Steps in the Grievance Mechanism

7.3.1 Receiving and Recording Grievances

Verbal, telephonic, email or written grievance shall be received through the various channels and shall be passed on to CSKL, via the CLO or equivalent personnel. The grievance shall then be recorded on a Complaints Registration Form and a formal confirmation along with a copy of the form shall be signed by both the complainant and the Project employee receiving the grievance. Details of the grievance shall be recorded.

All grievances shall be registered regardless of whether they are likely to be ultimately deemed as not legitimate.

7.3.2 Site Inspection, Investigation and Resolution

The CLO or equivalent personnel shall organise a site inspection, undertaken either by himself/herself or by an assigned member. The purpose of the site inspection is to check the validity and severity of the grievance. The inspection shall be undertaken within seven days of receiving the grievance. The CLO/assigned individual shall work with other relevant members of Projects to investigate the problem and identify measures to resolve the grievance as appropriate. This could involve provision of information to clarify the situation, undertaking measures to remedy problems and introduction of mitigation measures to prevent recurrence of the problem in the future. Where a grievance is found to be invalid or not severe, a clear explanation shall be provided to the complainant as to why this is the case.

7.3.3 Responses

A formal response detailing how the grievance will be resolved shall be provided to each complainant within 30 days. Where resolution is delayed, the complainant shall be provided with regular (at least monthly) updates on progress. The complainant has the right to reject the resolution proposed in which case the assigned individual should discuss with the complainant expectations and review and update the proposed resolution on the basis of these discussions. If resolution can't be agreed, then the complainant has the right to seek other judicial or administrative redress.

7.3.4 Monitoring and Evaluation

Two to three weeks after implementing the resolution, the CLO or equivalent personnel shall pay a visit to the complainant to ensure that the complainant is satisfied and to gather feedback on the grievance resolution process. The visit shall be registered in the grievance log. If required, further follow up visits will be scheduled.

***Note**: It should be noted that the duration to address grievances is dependent on the nature of the grievance and should be determined in consultation with the complainant.*

7.4 Roles and Responsibilities

Implementing the grievance mechanism and recording all grievances is the responsibility of a CLO or equivalent personnel. However, it is likely that at times the CLO or equivalent personnel will need support from the wider Project team in investigating or resolving a grievance.

The roles and responsibilities of Key Project personnel and committees is shown in Table 7.1 below.

Table 7.1 Responsibilities of Key Project Personnel and Committees

Person/Committee	Requirement	Other E&S Responsibilities
Managing Director	Knowledge and understanding	Ultimate responsibility for proposals to the IAC and for ensuring CSKL team discharge their respective E&S duties
Director, Projects and Strategy	Working knowledge	Responsibility for delivery of the facilities and oversight of all associated workstreams, including E&S.
ESG Director	In depth knowledge and implementation	Oversight of the ESMS implementation on a day-to-day basis, including E&S Manager activities
E&S Manager (appointed after Kenya facilities have been constructed)[1]	In depth knowledge and implementation	Day-to-day implementation of the ESMS with oversight from the ESG Director.
CSKL team members	Working knowledge	Actively involved in E&S issues insofar as they interact with their responsibilities for investments
Investment Advisory Committee (IAC)	Awareness of, in relation to IAC process	Review and approval of the E&S workstreams for each country operation, including budgets required to complete them.
Limited Partners	Review of ESMS as part of due diligence.	Receive and review performance reports and updated via the fund (LP) Advisory Committee (LPAC)
Portfolio Companies (SPVs) (facility operators) – through the Facility EHS Manager	Understand the requirements of CSKL to reflect in the Special Purpose Vehicle (SPV) ESMS	Develop the SPV ESMS and associated management plans to reflect the ESMP and the risks and impacts identified.
Owners Engineer (OE) EHS Manager	Working Knowledge	Supervision of the EPC Contractor and reporting into the ESMS if facility EHS Manager appointed to carry out this role
EPC Contractor EHS Manager	EPC Own ESMS reflecting requirements of ESMP	EPC EHS Manager responsible for all EHS/OHS oversight during construction and reporting into the OE or Facility EHS Manager

7.5 Review of the Grievance Log

It is essential that the grievances are logged and reviewed on a regular basis (at least quarterly) to determine if the same or similar grievances are being recorded at one or more locations. Multiple grievances related to the same or similar issues indicate a systemic problem within the Project which needs to be mitigated through the development of additional Project controls or measures.

[1] The planning and construction of the first two facilities in Kenya does not require additional E&S resources at the fund level over and above the ESG Director who will assume the E&S Manager responsibilities during this time. The E&S Manager will be appointed as these facilities move into operations and the fund expands into other target countries.

8. MONITORING AND REPORTING

It will be important to monitor and evaluate stakeholder engagement efforts to ensure that the desired outcomes are being achieved, and to maintain a comprehensive record of engagement activities and issues raised.

Suggested monitoring and evaluation activities are outlined below:

- Monitor the grievance register on a regular basis (monthly) in terms of response times to address complaints logged as well as the recurrence of complaints over time. This will inform the Project risk assessment;
- Regular update of the stakeholder register whenever additional stakeholders are identified;
- Keep records of all stakeholder engagement activities: This will be populated with details on information presented, questions, responses and commitments made and actions, and meeting evaluation results, when appropriate. The database will also be used to track frequency of meetings;
- Keep a library (electronic or hard copy) of all communication material. This will include all communication received from the identified Project stakeholders, from CSKL and also from media monitoring (press, radio stories relevant to the Project);
- Develop and assess performance in terms of Key Performance Indicators (KPIs) to be determined by the Project team and CLO or equivalent personnel. For example: number of engagements held per month; timeliness of disclosure of Project information; incorporation of stakeholder views into Project design and ESMP; number of outstanding grievances / number resolved; number of grievances escalated for legal action; and
- Annually review grievance mechanism performance and revise policies, procedures and actions accordingly, with the aim of reducing the number of grievances, improving the process of resolution and improving overall performance.

CSKL may choose to involve Project stakeholders (including affected communities) or third-party monitors in the monitoring of Project impacts and mitigation programmes as the Project develops.

8.1 Budget

The budget for the SEP implementation will consider the following items throughout the Project Construction and Operation phase:

- Hiring and training of the SEP CLO or equivalent personnel if not identified within the internal CSKL staff, and of short-term experts to carry out specific tasks;
- Specific consultation activities as outlined in the SEP;
- Consultation materials and tools; and
- Monitoring of the effectiveness of the SEP.

8.2 Considerations for Reporting to Project Affected Stakeholders

The following considerations will be helpful when devising the reporting component of this SEP:

- Determine what information needs to be reported to which stakeholders, by what method and how frequently;
- Regularly update the commitments register and disclose progress to affected and interested parties. In particular, publicize any material changes to commitments or implementation actions that vary from publicly disclosed documents;
- Make monitoring results publicly available, especially reports of any external monitors;

- Regularly report on the process of stakeholder engagement as a whole, both to those stakeholders who are directly engaged, and to other interested parties; and
- Translate information reported to stakeholders into local languages and/or into easily understandable formats.

This SEP suggests the adoption of the following forms, as appropriate, for use during the implementation of the Project:

- Stakeholder consultation issues and questions form;
- Stakeholder mapping form;
- Stakeholder consultations registration sheets;
- Stakeholder database including their contact details;
- Summary of stakeholder concerns;
- Stakeholder analysis matrix;
- Stakeholder register;
- Stakeholder commitment register;
- Key stakeholder profile form;
- Complaint registration form;
- Complaint resolution form;
- Standardized communication plan; and
- SEP implementation review form.

ERM has over 160 offices across the following countries and territories worldwide

Argentina
Australia
Belgium
Brazil
Canada
China
Colombia
France
Germany
Hong Kong
Hungary
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
The Netherlands
New Zealand
Panama
Peru
Poland
Portugal
Puerto Rico
Romania
Russia
Singapore
South Africa
South Korea
Spain
Sweden
Taiwan
Thailand
UAE
UK
US
Vietnam

ERM's Nairobi Office

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

T: +254 740 861 650/1
F: 254 71 265 0516

www.erm.com

The business of sustainability

ERM

APPENDIX D BACKGROUND INFORMATION DOCUMENT USED IN STAKEHOLDER ENGAGEMENTS

Cold Solutions Kenya Limited (CSKL)

CSKL Company Overview

May 2020

Kenya offers an opportunity for Cold Chain Solutions that can address food security while creating a positive impact on economic growth

Economic Overview of Kenya

- Kenya's economy is market-based with several state-owned infrastructure enterprises and maintains a liberalised external trade system.
- Kenya is perceived as East Africa's hub for Financial, Communication and Transportation services.
- Major industries include agriculture, forestry and fishing, mining and minerals, industrial manufacturing, energy, tourism, telecommunications and financial services.
- As of 2019, Kenya had an estimated GDP of $99.246 billion and per capita GDP of $2,010 making it the 62nd largest economy in the world.

Agriculture and food loss in Kenya

- Agriculture is key to Kenya's economy, contributing 26% of the GDP and another 27% GDP indirectly through linkages with other sectors. The sector employs more than 40% of the population and more than 70% of Kenya's rural people.
- Over 90% of horticulture produce consumed locally is produced by small scale farmers.
- It is estimated that 40% to 60% of fruits and vegetables produced for consumption in Kenya is lost along the supply chain.
- Due to cash constraints and a lack of adequate storage, especially cold storage, wholesalers and retailers are required to sell all fresh fruit and vegetable stocks quickly, causing volatility of market prices and product availability.

Cold Solutions Kenya Limited (CSKL) is building Cold Chain facilities across Kenya aiming to be an enabler of economic growth and development (particularly in value addition) in Kenya.

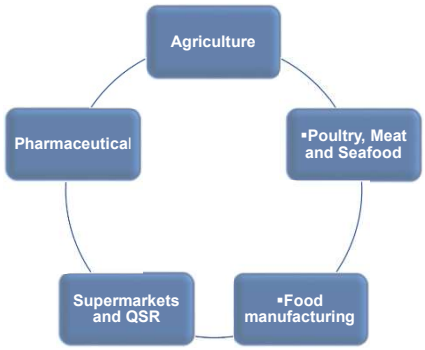
CSKL is building Cold Chain Solutions across five core sectors

CSKL investments will be developed and rolled-out over three phases…

- A significant barrier to entry for cold chain facilities in Kenya has been significant financial investment and need for a reliable, continuous supply of power.
- CSKL investments will be developed and rolled-out over three phases:
  - Phase 1: Nairobi (2020 Q2) and Mombasa (2020 Q3)
  - Phase 2: Smaller Facility at other strategic locations (2022 Q1)
  - Phase 3: Potential expansion of Nairobi and Mombasa
- The cold chain facilities will be developed and constructed according to relevant international standards, utilising the latest technological advancements.
- CSKL will be recruiting circa 300-400 employees between construction and full operation maturity. These employees will receive training and new skills in the Cold Chain industry.

…across five core sectors identified by CSKL for the provision of Cold Chain Solutions.

Key Industries/Sector focus of CCSEAF in Kenya:



3 - Strictly private and confidential

ColdSolutions KENYA

Progress update: CSKL is planning to break ground in early Q3 2020 and commence build-out of its first Cold Storage facility in Tatu city

CSKL is rolling out the first phase of investment in Nairobi and Mombasa. The team has carried out land assessments in several locations, and Tatu City Special Economic Zone has been identified for the construction of a cold chain facility in Nairobi.

Land Purchase

- CSKL is at the final stages of contract negations with Tatu City on the purchase of 6 acres parcel of land in Tatu City Special Economic Zone
  - Tatu City is a 5000-acre mixed-use development with Special Economic Zone status.
- According to the transaction timeline, CSKL will finalise the purchase of land at the end of June.

Pre-construction Phase

- Currently, concept design for Nairobi facility is being finalised and discussions have commenced with Tatu City's Development and Control Committee.
- Geotechnical and Topographical Survey's have been carried out on Tatu City parcel of land
- EIA study is currently underway by CSKL selected professional consultant, Environmental Resources Management (ERM).

Construction Phase

- CSKL is in the process of appointing a Leadership in Energy and Environmental Design (LEED) consultant and EPC contractor for the construction of the facilities
- CSKL is planning to break ground and commence build-out of it's first Cold Storage facility in Tatu City on Q3 2020

4 - Strictly private and confidential

ColdSolutions KENYA

Cold Solutions Kenya Limited
2nd Floor, West Wing, ICEA Lion Centre
Riverside Park, Chiromo Road
Nairobi, Kenya

Tel: +254203892503
Email: info@coldsolutionseastafrica.com

Point of Contact:
Feven Tesfaye, Fund Analyst, Cold Solutions Kenya Limited
ftesfaye@ArchEMpartners.com

Lionel Haggard, Technical Director, Cold Solutions Services East Africa Limited
lHaggard@coldsolutionsservicesea.com

09/07/2020

ColdSolutions KENYA

Background Information Document

Environmental Impact Assessment for the Cold Solutions Kenya Limited ("CSKL"), Kiambu, Kenya
April 2020

Introduction

This Background Information Document (BID) provides information to assist stakeholder participation in the Environmental Impact Assessment (EIA) and environmental authorisation process for the proposed Tatu City Temperature-Controlled Storage Facility (TCSF or the Project). This BID contains the following:

- Background to the Project;
- Description of the Project;
- Map of the Project location;
- The potential benefits and impacts posed by the Project;
- The processes that will be followed to engage with stakeholders; and
- How and when stakeholders can participate in the EIA process to be followed for this Project.

Background and Project Need

Outside of South Africa, the lack of cold chain solutions is generally a problem throughout Sub-Saharan Africa. It is widely recognised that post-harvest food losses are substantial and lead to significant income reduction for farmers and are a key driver for food insecurity. One solution to significantly reduce food losses is the development and operation of large-scale cold chain facilities with integrated distribution offered by third party providers. Some of the key benefits of cold storage solutions include:

- Strengthens food security and economic development;
- Minimises food losses and associated impacts (e.g. greenhouse gases), improves food hygiene and public health;
- Assists East African industries to move up the value chain;
- Increases opportunities for food exports; Increases and expands trading corridors in East Africa.

As such, Cold Solutions Kenya Limited (CSKL) is developing a portfolio of cold storage warehouses and end-to-end logistics to help close this current gap and realise these benefits. The business intends to build up to 3 facilities in Kenya.

What is an ESIA?

The Project requires Environmental Authorisation (EA) from the National Environment Management Authority (NEMA), through an Environmental and Social Impact Assessment (ESIA) process. NEMA is the competent authority under these regulations and has authority to approve the development or refuse it.

This document provides background information on the project and the ESIA process. It helps Interested and Affected Parties (I&APs) understand the project and provides guidance on getting involved. I&APs play a very important role in the ESIA process. We encourage you to register, this will enable CSKL to keep you informed throughout the ESIA processes. By doing so you will be able to engage in discussions on issues and provide comments on the draft ESIA Project Report.

ERM's Role

CSKL has appointed Environmental Resources Management (ERM) as the independent Environmental Assessment Practitioner (EAP) for the ESIA. The ESIA will determine anticipated impacts and propose measures on how these should be managed. The ESIA Project Report will then inform an environmental authorisation decision to be taken by NEMA.

Project Description

The Project entails the construction and operation of up to 12,000 m^2 cold storage facility with end-to-end logistics capable of storing 15,000-20,000 pallets. Key components of the project include:

- Warehouse facility with different refrigeration temperature zones. Refrigeration technology maybe ammonia, Glycol or CO_2-based.
- Supporting facilities including pump room, chiller area, power system (roof-top solar), guardhouse;
- With 20-30 Loading and unloading bays.
- Small wastewater treatment plant (wwtp) to treat cooling water effluent to national discharge standards and recycle 60% back into the cooling system;

Project Location

The Project is located in the Tatu Industrial Park (TIP), part of the wider Tatu City development – a mixed-use special economic zone (SEZ). TIP is located approximately 10 km north-east of Nairobi off the C63 national road.

The Project will be developed on a 6-acre plot (ref L3-45b) within the NEMA permitted precinct of Tatu City 3BA. Precinct 3BA infrastructure, including roads and utilities, have been completed with over 80% of the plots sold and under development.

Project Activities

Construction Phase

The first phase of the Project will involve the clearance of vegetation, and the separation and stockpiling of topsoil for further use in the facility landscaping process. Thereafter, enabling works including excavation and below groundworks will be completed prior to a concrete foundation being installed. The warehouse itself will entail a steel structure, external walls and roof cladding. Finally, electrical and mechanical equipment will be installed. The outdoor area will involve the construction of loading and unloading bays.

Operational Phase

During the Operational Phase, the warehouse and logistics will be operated on a continuous basis. Activities will include:

- Collection, storage and distribution of goods including meat, vegetables, fruit and pharmaceuticals; and
- Access to third parties to carry out primary food processing activities.

Replenishment and Renewal Phase

The proposed Project has a lifespan of up to or more than 50 years; after which, all infrastructure will require replenishment and renewal.

Project Significance

The Project will create temporary and permanent jobs and sustain employment in the County, with both new and existing employment opportunities. The operation of the facility is resource-intensive with approximately 100-150 permanent jobs foreseen at full capacity. As previously outlined, the Project will realise significant socio-economic benefits for the country and region.

Potential Impacts and Risks

A summary of potential impacts is provided below. The potential impacts are discussed for each of the physical, biological and socio-economic aspects during the construction, operational and decommissioning phases. These impacts will be assessed in detail during the on-going ESIA process and the results included in the ESIA Project Report.

Physical

Air Quality

- The Project is located in an industrial zone that is largely developed. Dust creating activities during the construction phase will largely be associated with land clearing and earthworks. Air quality considerations during the operation phase will be associated with truck movements and the in-frequent operation of a backup generator for power.

Ambient Noise

- The Project is located in an industrial area with light industrial facilities similar to the Project. Noise will primarily be a consideration during the construction phase but there are no residential receptors within 1 km radius of the Project Site. During operation phase noise will be associated with the movement of trucks, again within an industrial area.

Soils and Geology

- Soil quality could be impacted through compaction created by construction, operations, and stockpiling.
- Soil quality and properties could be altered through the release of potential contaminants to land as a result of an unplanned event or accident.

Water Resources

- The size of the Project Site and planned earthworks are very unlikely to result in impacts to water resources. Full utilities and drainage are already included in the TIP infrastructure.
- The on-site waste water treatment plant (wwtp) will discharge cooling water effluent to national water discharge standards. Tatu City monitors effluent discharge twice daily through their on-site laboratory.

Waste Management

- Various wastes will be generated during Project development and operation.

Landscape and Visual

- The Project is located within an existing industrial zone and will fit in with the existing landscape character.

Biological

Habitats, Flora and Fauna

- The habitats at the Project Site are highly modified which is attributed to previous land use (particularly farming) and the subsequent zoning of the Project Area as an industrial zone. Therefore, it is not of conservation concern and, site preparation and site clearing will result in removal of generally secondary vegetation (grasses and shrubs) and one Mugumo (fig) tree (see cultural heritage resources). It is important to note that based on the approved EIA for the wider development of the Precinct 3BA in which the Project Site is located, the management of Tatu City has already started clearing and levelling the Project Site, resulting in the loss of this existing vegetation.

Socio-economic

Land Acquisition

- The plot for the proposed Project is one of the many plots in the wider Tatu City privately owned by its management. The Project Proponent is in the process of obtaining a long-term lease from the management of Tatu City.

Community Health & Safety (H&S) and Security

- Movement of trucks during construction and operation outside of the industrial area will pose a risk to community health and safety;
- Due to the construction of Tatu City and the industrial nature of the wider Ruiru area, there is availability of labour in all categories of skilled, semiskilled and unskilled workers in the Project Area who will be locally recruited to work at the Project. Therefore, no influx of workers is expected as a result of the Project.

Worker Health & Safety.

- Construction or operational activities poses occupational health and safety risks to the workforce including those associated with working with Project machinery and equipment and working at heights.

Traffic and Transportation

- Transport of equipment and machinery during the construction phase may impact upon local transport and accessibility.
- The logistics operation will increase traffic on local roads, albeit within the allotted tolerances of Tatu City Masterplan.

Cultural/Heritage Resources

- Site clearing will result in the removal of a Mugumo tree, a species considered sacred with the Kikuya communities. Engagements with the Area Chief and Elders has shown that the specific tree on the Plot, although sacred, is not actively used for cultural activities and can be cut down to pave way for development if a cultural ceremony is performed. Tatu City, in coordination with the Area Chief, Elders and the Deputy County Commission, are arranging for the necessary cultural ceremony to take place.

Steps for the ESIA Process

ESIA is part of the Project development process and is usually done at the initial stages of the Project planning and development. It is a decision-making tool and should guide

whether a Project should be implemented, abandoned or modified before implementation.

The objectives of the ESIA are to assess the significance of all identified impacts and to formulate mitigation measures. After the different aspects of the ESIA have been completed, an ESIA Project Report including an Environmental and Social Management and Monitoring Plan (ESMP) will be compiled.

Public Participation

Public participation is a legal requirement in the ESIA process; the key principle of consultation is to ensure that the views of stakeholders are considered and reported throughout the ESIA process. The objective is to ensure that the assessment is robust, transparent and has considered the full range of issues or perceptions, and to an appropriate level of detail. Stakeholder participation will assist in identifying environmental and social consequences of the proposed Project and ensure that these are evaluated in the process.

Figure 0.1 Project Location Map (circled in red)

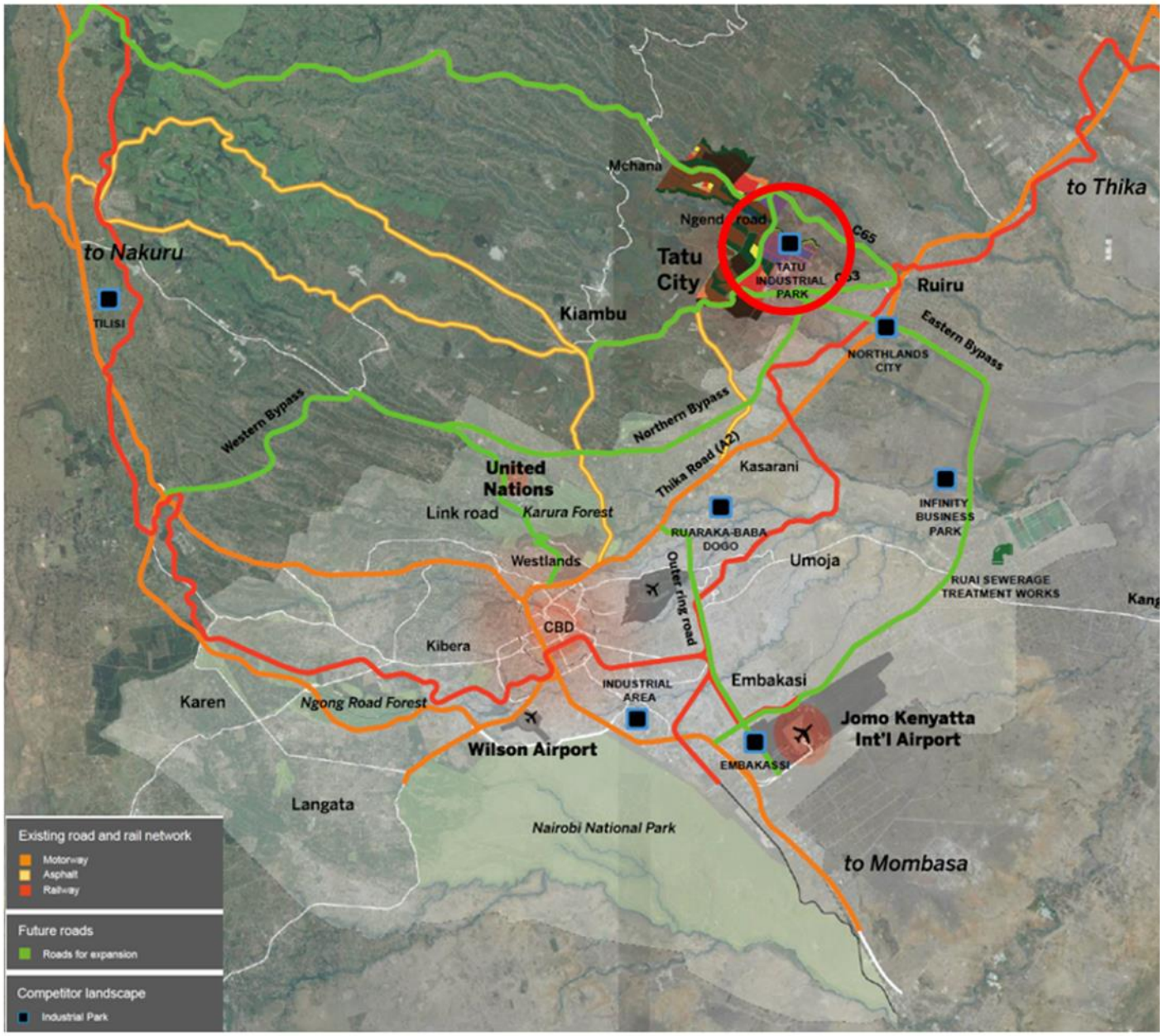


Figure 0.2 Site Photos

Project Site: Access road available, Mugumo tree on the left with a few eucalyptus trees behind it, levelling on-going under Tatu City.

Mugumo tree at the Project Site: Tatu City in coordination with the Area Chief, Elders and the office of the County Commission arranging for the required cultural ceremony before it is cut down

On-going grading of the Project Site by Tatu City guided by the approved ESIA Study conducted for the wider development of the Precinct 3BA in which the Project Site is located

Completed Facility for Africa Logistics Properties on the south eastern border of the Project Site

Another Facility Constructed opposite the Project Site; electricity and Road available

Ongoing construction activities in the wider Project Area

How to Submit Comments

Should you have any queries, comments or suggestions regarding the proposed project, please note them below.

Please provide your contact details.

Name and Title:	**Affiliation/Organisation:**
Phone:	**Email:**
Address:	

Cold Solutions Kenya Limited

Tel : +254 20 389 2512

Email : info@coldsolutionseastafrica.com

Address: ICEA Lion Centre, Riverside Park, Chiromo Road, Nairobi

Project Website: https://www.coldsolutionseastafrica.com/

Public Participation in the ESIA

The stakeholder engagement process is designed to conform to the NEMA Regulations and global best practice. Key objectives for stakeholder engagement for this Project are:

- Share information about the Project and gather local knowledge to improve understanding of the environmental and social context and understand locally important issues;
- Enable stakeholders to raise concerns/questions about the Project and incorporate stakeholder views into the design and management measures;
- Respond to concerns and questions and report back on the findings of the ESIA and proposed management measures;
- Lay foundation for future stakeholder engagement.

Any party that is interested or potentially affected by the Project is invited to participate in the ESIA process. Please make use of the following opportunities to be involved in the stakeholder engagement process:

- Study the information in the BID.
- Contact the Project Team for further information or raise issues and concerns.
- Complete the Comment Sheet (attached) and return by hand, mail, fax or e-mail;
- Attend planned stakeholder meetings. More information about the meetings will be circulated through letters, community leaders, and through the Project website.

Comments Form (please feel free to use an extra form if you have more comments)

What are the primary comments / questions / concerns that you or your organisation have about this Project?

What positive impacts do you expect to emanate from the development of the proposed Project?

What negative socio-economic impacts do you anticipate from the development of the proposed Project?

What negative environmental impacts do you anticipate from the development of the proposed Project?

Kindly propose mitigation measures the Developer needs to put in place during and after the development of the proposed Project

Do you support the development of the proposed Project?

Other Comments

APPENDIX E DETAILED MINUTES OF STAKEHOLDER ENGAGEMENT MEETINGS CONDUCTED DURING THE ESIA PROCESS, MEETING PHOTOS AND ATTENDANCE REGISTERS/ STAKEHOLDER COMMENTS

Tatu City Temperature Controlled Storage Facility - Stakeholder Engagement

ColdSolutions KENYA

Organisation	Name	Phone	Email	Signature and Date
National Environment Management Authority (NEMA)	JAMES	0723363010	dgnema@nema.go.ke	
Deputy County Commissioner	~~Caroline Ngoch~~	~~0723726865~~	~~dcc.kiambu@gmail.go.ke~~	15/06/2020
County Government of Kiambu	CSOffice - Veronica	0720572708		15/6/2020
Development Control Committee ✓				
Traditional Authorities				
Neighbouring company				
Africa Logistics Properties (ALP)	Jechica Orange	0726 970 879	rangajoshua@gmail.com	
Clerk of Kiambu County Assembly	Monica W. Maina	067 586 0000	info@kiambucassembly.go.ke	15/6/2020.
Tatu City Water and Sewerage Company	Leontilla Muthoni	0703132 742	leemuthoni@gmail.com	15/6/2020
RUIRU Juja Water and Sewerage Company	Emmah Mukuha	0701-194-709	emmahmukha@gmail.com	15/6/2020
STECOL – Corporation	Leontilla Muthoni	0703132 742	Leemuthoni@gmail.com	15/6/2020
Unity Homes	NASRA	0707662250	purchasing@unityhomes.co.ke	15/6/2020
Tatu City Training Academy ✓	TRIZAH	0757063268	Academy@tatucity.com	15/06/2020
HUNKAR Gas	EUNICE	0723272584	Finance@hunkargas.co.ke	15/06/2020
TING Long	BEATRICE	0748192582	beatrice@tlpg.com.	15/06/2020.
DEPUTY COUNTY COMMISSIONER	Nairiti	0721215636	dcc.ruiru@interior.go.ke	15/6/2020
COUNTY COMMISSIONER	FELIX	[illegible]		16/6/2020

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

MEETING MINUTES

Stakeholder Consulted	Tatu City Management
Subject/Project	Cold Solutions East Africa Limited ("CCSEAL") is committed to developing and operating best-in-class cold storage and logistics operations in its target countries in East Africa. Accordingly, our investment approach incorporates environmental and social considerations throughout the full investment cycle, from initial investment decision through to exit. CCSEAL aims to contribute to sustainable development in East Africa and is committed to act in an environmentally sustainable, socially responsible, and ethical manner. There is a severe shortage of cold storage chain solutions across East Africa resulting in large post-harvest food losses and a seasonally affected supply chains causing volatility in market pricing. The cold storage facilities and logistics operations developed by CCSEAL will result in positive development outcomes both directly, by reducing food losses and flattening market pricing, and also indirectly through businesses that will develop within the value chain. Food loss is a significant contributor to Green House Gases (methane) in Africa, therefore a reduction in food losses will also contribute to a reduction in Green House Gases. As such, from the offset CCSEAL's activities are geared towards positive environmental and social impacts. CSSEAL deals with a large network of suppliers and other third parties. Their suppliers play an important role as enablers of their sustainable growth and overall success. CSSEAL has set forth principles that are key for economic, social and environmental sustainability in order to ensure long-time success of CSSEAL and its stakeholders.
Project Number	0552902
Venue	Tatu City Management Offices
Date of Meeting	3rd June 2020.
Participants/ Attendance	Refer to the Attendance Register attached.
Minutes by	Gideon Owaga.
Distribution	To be included in the ESIA Report

1. Introduction

The meeting started at 9:30 AM. After a round of introductions by the Project Teams from Arch, ERM and Tatu City. Feven Tesfaye (Arch) stated that the purpose of the meeting was to introduce the Project, seek feedback from Tatu City Management team and chart the way forward with regards to stakeholder engagement activities and the National and County levels. She further stated that the list of stakeholders was shared with Tatu City and can be the basis of discussion.

Gideon stated that ERM is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services with more than 5,500 employees in over 40 countries and territories working out of more than 160 offices. He further stated that ARCH's Cold Chain Solutions East Africa Fund (CCSEAF) has appointed ERM, to undertake the Environmental and Social Impact assessment for the proposed project.

2. Project Description – (ERM)

The TIP (in which the Project site is located) is a considered a mixed-use special economic zone (SEZ). TIP is located approximately 10 km northeast of Nairobi off the C63 national road. The Project will be developed on a 6-acre plot (ref L3-45b) within the NEMA permitted precinct of Tatu City 3BA. Precinct 3BA infrastructure, including roads and utilities, have been completed with over 80% of the plots sold and under development.

The Project entails the construction and operation of up to 12,000 m^2 cold storage facility with end-to-end logistics capable of storing 15,000-20,000 pallets. Key components of the project include:

- Warehouse facility with different refrigeration temperature zones. Refrigeration technology maybe ammonia, Glycol or Carbon dioxide CO_2 based.
- Supporting facilities including pump room, chiller area, power system (roof-top solar), guardhouse;
- 20-30 loading and unloading bays;
- Small Wastewater treatment Plant (WWTP) to treat cooling water effluent to national discharge standards and recycle 60% back into the cooling system.

Environmental and Social Impact Assessment (ESIA) Process- (ERM)

The Project requires Environmental Authorisation (EA) from the National Environment Management Authority (NEMA), through an Environmental and Social Impact Assessment (ESIA) process. NEMA is the competent authority under these regulations and has authority to approve the development or refuse it.

The ESIA process is guided by Environmental Management and Coordination Act (EMCA) of 1999 (reviewed in 2019), and the 2015 amendments and the associated Environmental (Impact Assessment and Audit) Regulations of 2003 (and the amendments of 2016). Reference is also made to Good International Industry Practice (GIIP) guidelines and the lender requirements, particularly, the IFC Performance Standards on environmental and social sustainability. As part of the ESIA process, stakeholder engagement and consultation is a paramount step to:

- Inform the stakeholders of the proposed project, associated impacts and identified measures to manage their significance to acceptable levels;
- Obtain stakeholders' views on the proposed project to inform its design and implementation, and gain stakeholder support/ social license to operate; and
- Open communication channels for use through the lifecycle of the project.

3. Key Discussion Points

Stakeholder Engagement

- Because there is a possibility of getting conflicting information from the ministries at the county level, it will be more advisable to write one letter to the County Secretary (CS) who will then forward and solicit information from the respective County Executive Committee (CECs) members which can then be compiled and documented.
- Most of the County Government prefer to sit down and discuss as a team before giving a joint position on project.
- It was suggested that the letter to the CS should also specify the CECs of interest that the Proponent may want to consult. The CS will then marshal all of the CECs.
- Other additional stakeholders can include the neighbouring communities which includes:
    - Ruiru Juja Water and Sewerage Company (RUJUWASCO);
    - Tatu City Water and Sewerage Company (TCWSC);
    - STECOL Corporation (Incharge of Road Construction in Tatu City);
    - Unity Homes;
    - Tatu City Training Academy;
    - Hunkar Gas;
    - Tianlong Cylinder Company;

- The Clerk County assembly of Kiambu should also be included as a stakeholder. It will be important that they are informed as a stakeholder.
- Arch should aim to get a no objection letter from the various stakeholders.
- The letter to the Deputy County Commissioner (DCC) should also specify and request assistance to post project information in a public notice boards within the government public administration offices.
- Tatu City DCC will also issue a letter of no objection to Arch.
- Since Tatu City already has an approval for their Strategic Environmental Assessment (SEA), there may be no need to have public Barazas. The Communities were already informed about the mixed developments.
- Tatu City has a community Liaison officer (CLO) who can help in mobilization.

Mugumo Tree

- Tatu City Management requested that the process be left to them to handle since they have a long standing relationship with the elders and they know how they will handle.
- ERM will be invited to document the whole process.
- Once the legal and commercial aspects of the land have been finalised, the elders will be invited to perform the necessary ceremonies.
- Usually elders do not perform ceremonies during pandemics.

Resettlement/Displacement

- There has be no physical displacement associated with the project. The main type of displacement that occurred was economic displacement where farmers lost access to their coffee farms.
- Tatu City managed the economic displacement by providing alternative means of livelihood to the affected farmers by providing training and permanent employment within Tatu City.

- Those who were affected were mainly farmers who depended on Coffee picking as a source of livelihood. They were identified, trained and absorbed through employment within Tatu City with jobs such as carpenters, tailors etc
- There ae still over 5000 acres of coffee plantation within Tatu City.

4. Way forward/ Conclusion/ General feedback from stakeholder consulted

- The consultants will develop a draft letter for review by Tatu City Management
- Once the letter is okay, it can be shared with the various stakeholders and Tatu City can undertake the mobilization.

5. Closure

There being no other business, the meeting ended at 10:30 AM

6. Attendance Register

ERM East Africa (Pty) Ltd
Senteu Plaza | 1st Floor | Lenana/Galana Road | Kilimani
PO Box 29170-00100 | Nairobi | Kenya
T + 254 740 861 650/1 | www.erm.com
The world's leading sustainability consultancy

STAKEHOLDER CONSULTATIVE MEETING REGISTER

CLIENT	ARCH COLD CHAIN SOLUTIONS EA		
PROJECT	TATU CITY COLD STORAGE FACILITY		
DATE	3RD JUNE 2020		
VENUE	TATU CITY OFFICES		
TIME STARTED	9:30 AM	TIME ENDED	10:30AM

Name	Organisation	Designation	Email Address	Telephone No	Signature
Feven Tesfaye	ARCH EM	ARCH	ftesfaye@archemp	–	
Justus Kariuki	Tatu City	Snr. Advisor	jkariuki@rendeavour.com		
Tito Oduk	" "	Commercial Mgr	toduk@tatucity.com		

7. Photos

Photo showing the 5000 acre Coffee plantation within the Project area

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

MEETING MINUTES

Stakeholder Consulted	Area Chief – Ruiru
Subject/Project	Cold Solutions East Africa Limited ("CCSEAL") is committed to developing and operating best-in-class cold storage and logistics operations in its target countries in East Africa. Accordingly, our investment approach incorporates environmental and social considerations throughout the full investment cycle, from initial investment decision through to exit. CCSEAL aims to contribute to sustainable development in East Africa and is committed to act in an environmentally sustainable, socially responsible, and ethical manner. There is a severe shortage of cold storage chain solutions across East Africa resulting in large post-harvest food losses and a seasonally affected supply chains causing volatility in market pricing. The cold storage facilities and logistics operations developed by CCSEAL will result in positive development outcomes both directly, by reducing food losses and flattening market pricing, and also indirectly through businesses that will develop within the value chain. Food loss is a significant contributor to Green House Gases (methane) in Africa, therefore a reduction in food losses will also contribute to a reduction in Green House Gases. As such, from the offset CCSEAL's activities are geared towards positive environmental and social impacts. CSSEAL deals with a large network of suppliers and other third parties. Their suppliers play an important role as enablers of their sustainable growth and overall success. CSSEAL has set forth principles that are key for economic, social and environmental sustainability in order to ensure long-time success of CSSEAL and its stakeholders.
Project Number	0552902
Venue	Assistant Chief's Office
Date of Meeting	16th April 2020.
Participants/ Attendance	Refer to the Attendance Register attached.
Minutes by	Gideon Owaga.
Distribution	To be included in the ESIA Report

1. Introduction

The meeting began at 9:00 AM. The Area Chief welcomed the Project team from Environmental Resources Management (ERM).

In his introductory remarks, Gideon stated that ERM is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services with more than 5,500 employees in over 40 countries and territories working out of

more than 160 offices. He further stated that ERM has been appointed by ARCH's Cold Chain Solutions East Africa Fund (CCSEAF), to undertake the Environmental and Social Impact assessment for the proposed project.

2. Project Description – (ERM)

The TIP (in which the Project site is located) is a considered a mixed-use special economic zone (SEZ). TIP is located approximately 10 km northeast of Nairobi off the C63 national road. The Project will be developed on a 6-acre plot (ref L3-45b) within the NEMA permitted precinct of Tatu City 3BA. Precinct 3BA infrastructure, including roads and utilities, have been completed with over 80% of the plots sold and under development.

The Project entails the construction and operation of up to 12,000 m^2 cold storage facility with end-to-end logistics capable of storing 15,000-20,000 pallets. Key components of the project include:

- Warehouse facility with different refrigeration temperature zones. Refrigeration technology maybe ammonia, Glycol or Carbon dioxide CO_2 based.
- Supporting facilities including pump room, chiller area, power system (roof-top solar), guardhouse;
- 20-30 loading and unloading bays;
- Small Wastewater treatment Plant (WWTP) to treat cooling water effluent to national discharge standards and recycle 60% back into the cooling system.

Environmental and Social Impact Assessment (ESIA) Process- (ERM)

The Project requires Environmental Authorisation (EA) from the National Environment Management Authority (NEMA), through an Environmental and Social Impact Assessment (ESIA) process. NEMA is the competent authority under these regulations and has authority to approve the development or refuse it.

The ESIA process is guided by Environmental Management and Coordination Act (EMCA) of 1999 (reviewed in 2019), and the 2015 amendments and the associated Environmental (Impact Assessment and Audit) Regulations of 2003 (and the amendments of 2016). Reference is also made to Good International Industry Practice (GIIP) guidelines and the lender requirements, particularly, the IFC Performance Standards on environmental and social sustainability. As part of the ESIA process, stakeholder engagement and consultation is a paramount step to:

- Inform the stakeholders of the proposed project, associated impacts and identified measures to manage their significance to acceptable levels;
- Obtain stakeholders' views on the proposed project to inform its design and implementation, and gain stakeholder support/ social license to operate; and
- Open communication channels for use through the lifecycle of the project.

3. Key Discussion Points (Area Chief and Village Elder)

Area Chief

- The Area Chief welcomed the Project and looked forward to further updates on the same.
- The Area Chief assured the team of the support from his office.
- The Area Chief pointed out that the Mugumo tree is considered sacred by the Kikuyu community and it was very important to make sure the correct process is followed before deciding whether it can be brought down. They recently had an experience where a Mugumo tree was cut down last year near the Market area in Ruiru. The person who led the process of cutting it down was the chair of the village elders but he died after 3 days. The village elders visited his office and said that an offering had already been made for the tree and therefore it cannot be cut. But the chairman went ahead despite the warnings.
- The very elderly (over 90 years) are the ones entitled to undertake the offering ceremony for the Mugumo Tree.
- There is a Mugumo Tree in Tatu City that has been set aside as a cultural site and it's believed that Kenya's first president *Mzee* Jommo Kenyatta, prayed there. There were offerings that were done for it and therefore it cannot be cut down.
- The Area Chief emphasised that even though all the Mugumo trees are considered sacred, there are those that have underwent a sacred cleansing rite ceremony/offering. The process/ceremony of cutting them down is dependent on whether the ceremony was previously performed on the tree.
- According to the Kikuyu community, the Mugumo tree is so sacred that even if it falls down nobody is allow to use it as firewood apart from the very old people who are unable to walk (over 90 years).
- When a Mugumo Tree falls and more so if it was used as a shrine, it almost always signifies a mighty occurrence according to the Kikuyu culture and elders are required to pray over it to get an understanding.
- The area chief pointed out that his office can coordinate the process of identifying the elders who can have the mandate/authority to conduct the ceremony.

Village Elder (during the site visit)

- After conducting a prayer ceremony and observation, the village elder confirmed that the tree was indeed a Mugumo tree. He stated that there were designated village elders who had the authority to come and offer sacrifices and prayers at the Mugumo tree so that they can get guidance from God so that the tree does not cause any harm to the people when it is brought down.
- The village elder pointed out that as an individual he does not have authority to allow the tree to be cut but he will have to consult with the head of all the village elders who will visit the site and offer a sacrifice to appease (sooth) the Gods.
- The elder pointed out that even the branches cannot be used to light firewood. If one does so they will get rashes or boils. He pointed out an example of at a place at Gathurini called Githoiro, there was a Mugumo tree branch that fell down on the road and the women decided to use it as firewood. When they lighted the fire, the flame rose up high up vertically but did not burn the house. The whole family got skin rashes and an offering had to be given.

- The elder pointed out that he is not sure if an offering/sacrifice has been given for the tree, if it has, it can be brought down on condition that the elders give an offering to appease the Gods and get a greenlight that it can be brought down.
- The first step is to consult with the old village elders who will know if historically an offering/sacrifice was performed on the tree. They will perform rituals and will 'see' signs that will inform them if the tree can be brought down or not.
- There is a Mugumo tree in the area that the founding father of Kenya President *Mzee* Jomo Kenyatta made an offering and as a result, it cannot be cut down. The tree has names engraved on its bark naming the elders who performed the ritual.
- The village elder pointed out that the way forward was to consult with the other elders and summon their chairperson to come and offer a sacrifice for the tree and offer guidance whether it can be brought down or not.
- A Mugumo tree cannot be cut down before the elders give an offering. According to the Kikuyu tradition, bad omens (mainly death) befalls anyone who defies the process.
- The village elders have their unique ways of determining whether a Mugumo tree can be brought down or not. Through certain prayers and rituals, they can determine if it's possible.
- As part of the rituals blood and goat, excrement is usually poured in the tree. If this was done, there is no way the tree can be brought down. There are certain parts of the sacrificed animal that are given to the elderly people.

4. Way forward/ Conclusion/ General feedback from stakeholder consulted

- The area Chief will consult with the Chairperson of the Village Elders and advice on the way forward regarding the Mugumo Tree.
- A site visit to the Mugumo Tree.

5. Closure

There being no other business, the meeting ended at 9:30 PM

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

6. Attendance Register

ERM East Africa (Pty) Ltd
Senteu Plaza | 1st Floor | Lenana/Galana Road | Kilimani
PO Box 29170-00100 | Nairobi | Kenya
T + 254 740 861 650/1 | www.erm.com

The world's leading sustainability consultancy

STAKEHOLDER CONSULTATIVE MEETING REGISTER

CLIENT	ARCH COLD CHAIN SOLUTIONS EA.		
PROJECT	TATU CITY COLD STORAGE FACILITY		
DATE	16 APRIL 2020		
VENUE	CHIEFS OFFICE RUIRU		
TIME STARTED	9:00 AM	TIME ENDED	9:30 AM

Name	Organisation	Designation	Email Address	Telephone No	Signature
GEORGE MWAURA	G.O.K	CHIEF	gkargonganga60@gmail.com	0722428387	
W. GIKONYO	ELDER	ELDER	—	0720210244	

CHIEF
RUIRU LOCATION

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana
Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

7. Photos

Village Elder and ERM Consultant Gideon Owaga at the *Mugumo* Tree at the Project Site

Area Chief, Village elder and ERM Consultant (Gideon Owaga) after visiting the *Mugumo* Tree at the Project Site

Project Team visits the second *Mugumo* Tree outside the Project Site

Project Team, Village Elder and Area Chief consult at the site of the second *Mugumo* Tree outside the Project Site

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

MEETING MINUTES

Stakeholder Consulted	Tatu City Management
Subject/Project	Cold Solutions East Africa Limited ("CCSEAL") is committed to developing and operating best-in-class cold storage and logistics operations in its target countries in East Africa. Accordingly, our investment approach incorporates environmental and social considerations throughout the full investment cycle, from initial investment decision through to exit. CCSEAL aims to contribute to sustainable development in East Africa and is committed to act in an environmentally sustainable, socially responsible, and ethical manner. There is a severe shortage of cold storage chain solutions across East Africa resulting in large post-harvest food losses and a seasonally affected supply chains causing volatility in market pricing. The cold storage facilities and logistics operations developed by CCSEAL will result in positive development outcomes both directly, by reducing food losses and flattening market pricing, and also indirectly through businesses that will develop within the value chain. Food loss is a significant contributor to Green House Gases (methane) in Africa, therefore a reduction in food losses will also contribute to a reduction in Green House Gases. As such, from the offset CCSEAL's activities are geared towards positive environmental and social impacts. CSSEAL deals with a large network of suppliers and other third parties. Their suppliers play an important role as enablers of their sustainable growth and overall success. CSSEAL has set forth principles that are key for economic, social and environmental sustainability in order to ensure long-time success of CSSEAL and its stakeholders.
Project Number	0552902
Venue	Via Zoom
Date of Meeting	20th May 2020.
Participants/ Attendance	Refer to the Attendance Register attached.
Minutes by	Gideon Owaga.
Distribution	To be included in the ESIA Report

1. Introduction

The meeting started at 10:23 AM. After a round of introductions by the Project Teams from Arch, ERM and Tatu City representatives, Azhar Rifai (Arch) stated that the purpose of the meeting was to introduce the Project, seek feedback from Tatu City Management team and chart the way forward about further project activities. He further stated that the Background Information Document (BID) shared with Tatu City gives an overview of the proposed Project infrastructure, activities as well as the anticipated potential Environmental and Social Impacts.

In his introductory remarks, Barnabas stated that ERM is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services with more than 5,500 employees in over 40 countries and territories working out of more than 160 offices. He further stated that ARCH's Cold Chain Solutions East Africa Fund (CCSEAF) has appointed ERM, to undertake the Environmental and Social Impact assessment for the proposed project.

2. Project Description – (ERM)

The TIP (in which the Project site is located) is a considered a mixed-use special economic zone (SEZ). TIP is located approximately 10 km northeast of Nairobi off the C63 national road. The Project will be developed on a 6-acre plot (ref L3-45b) within the NEMA permitted precinct of Tatu City 3BA. Precinct 3BA infrastructure, including roads and utilities, have been completed with over 80% of the plots sold and under development.

The Project entails the construction and operation of up to 12,000 m^2 cold storage facility with end-to-end logistics capable of storing 15,000-20,000 pallets. Key components of the project include:

- Warehouse facility with different refrigeration temperature zones. Refrigeration technology maybe ammonia, Glycol or Carbon dioxide CO_2 based.
- Supporting facilities including pump room, chiller area, power system (roof-top solar), guardhouse;
- 20-30 loading and unloading bays;
- Small Wastewater treatment Plant (WWTP) to treat cooling water effluent to national discharge standards and recycle 60% back into the cooling system.

Environmental and Social Impact Assessment (ESIA) Process- (ERM)

The Project requires Environmental Authorisation (EA) from the National Environment Management Authority (NEMA), through an Environmental and Social Impact Assessment (ESIA) process. NEMA is the competent authority under these regulations and has authority to approve the development or refuse it.

The ESIA process is guided by Environmental Management and Coordination Act (EMCA) of 1999 (reviewed in 2019), and the 2015 amendments and the associated Environmental (Impact Assessment and Audit) Regulations of 2003 (and the amendments of 2016). Reference is also made to Good International Industry Practice (GIIP) guidelines and the lender requirements, particularly, the IFC Performance Standards on environmental and social sustainability. As part of the ESIA process, stakeholder engagement and consultation is a paramount step to:

- Inform the stakeholders of the proposed project, associated impacts and identified measures to manage their significance to acceptable levels;
- Obtain stakeholders' views on the proposed project to inform its design and implementation, and gain stakeholder support/ social license to operate; and
- Open communication channels for use through the lifecycle of the project.

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

3. Key Discussion Points

Arch

- Stakeholder engagement is part of the NEMA regulatory requirements and also to fulfil the lender
- From the investor regulations, because the Project is classified as a *category B*, it has to undergo a full Environmental and Social Impact Assessment (ESIA) process, which also includes stakeholder engagements.
- Tatu City is one of the identified key stakeholders and needs to be consulted as part of the ESIA Process.
- ERM will take the lead in conducting and documenting the stakeholder engagements.
- Going through the ESIA process and having all the necessary documentation will help to avoid any future issues/questions that may arise especially from the investors.
- It is recommendable that Tatu City have built a strong and positive relationship with the community. The Tatu brand is based on the Mugumo Tree.
- Arch is still in the process of acquiring the land and recommended that Tatu City should be put in the loop on the proposed activities as part of the ESIA process.
- As part of satisfying NEMA requirements, engagements will mainly be undertaken with the Area Chief and village elders
- The main interest of the communities with be on the availability of jobs.
- Arch is the private equity business. The company that will be running the project is Cold solutions Kenya Ltd.
- Currently Arch is going through a concept design stage of how the facility is going to look like and they are involving Tatu in those discussions.
- Arch is currently undertaking a tendering process to identify consultants who will undertaking the traffic impact studies, fire management and architect/ project management.

Tatu City Management (TCM)

- TCM were of the views that even though Arch and ERM will need to engage with the neighbours as part of the ESIA process and guided by their Corporate Social Policies, they will have very little to say with regards to what happens at TIP because Tatu City owns the land and the facilities in the area. As long as they comply with the laws within Tatu City and the lease conditions, everything will be fine.
- As part of the engagements, the District Commissioner (DC) and County Commissioner (CC) should also be consulted. They play an important role especially in resolution of complaints from the community.
- Tatu City currently get their water supply from Nairobi Water and Sewerage Company (NAWASCO) which is currently sufficient to cover all the tenants. The long-term plan is to increase the water reservoir to meet the future demands.

ERM

- ERM pointed out that because the Project Site is located within the Special Economic Zone (SEZ) and TIP which are already approved, it significantly reduce the risks associated with the Project However the condition 2.3 in the Strategic Environmental Assessment (SEA) licence states that specific projects within the wider area also need to undergo ESIA.

- The Stakeholder Engagement process is in line with the Kenyan Environmental Management Coordination Act Regulations (EMCA) amended in 2019. The Project is categorised as a medium risk that requires submission of a Project Report to NEMA.
- Stakeholder Engagement with the neighbours and community is not just to seek approvals but also to inform them of any upcoming activities.
- There are shared facilities within the Project area such as electricity, water, sewer lines etc. It is best practice to inform the neighbours of any planned activities or disruptions that may take place. This will also help in good management and harmonised planning and development.
- Stakeholder engagements with the neighbouring communities not only helps in building positive future relationships with the community but also gives the developer a 'Social Licence to Operate.'
- A site visit has so far been conducted with the area chief and village elders during the investigation of the Mugumo Tree.

4. Way forward/ Conclusion/ General feedback from stakeholder consulted

- Arch recommended that Feven Tesfaye (Arch) will be the main point of contact and lead the stakeholder engagement process.
- Arch recommended that the BID to have the contact details for CCSEAL
- ERM pointed out that the next step will be to undertake further stakeholder consultations. A draft list has been developed and it can be shared with Tatu City.
- It was recommended that ERM to liaise with Arch in case they need any information regarding Tatu City.
- Tatu City will take over the handling of the Mugumo Tree and have a liaison officer who will manage the process. Tatu will work closely with Arch and ERM to ensure the process is well documented.

5. Closure

There being no other business, the meeting ended at 11:10 AM

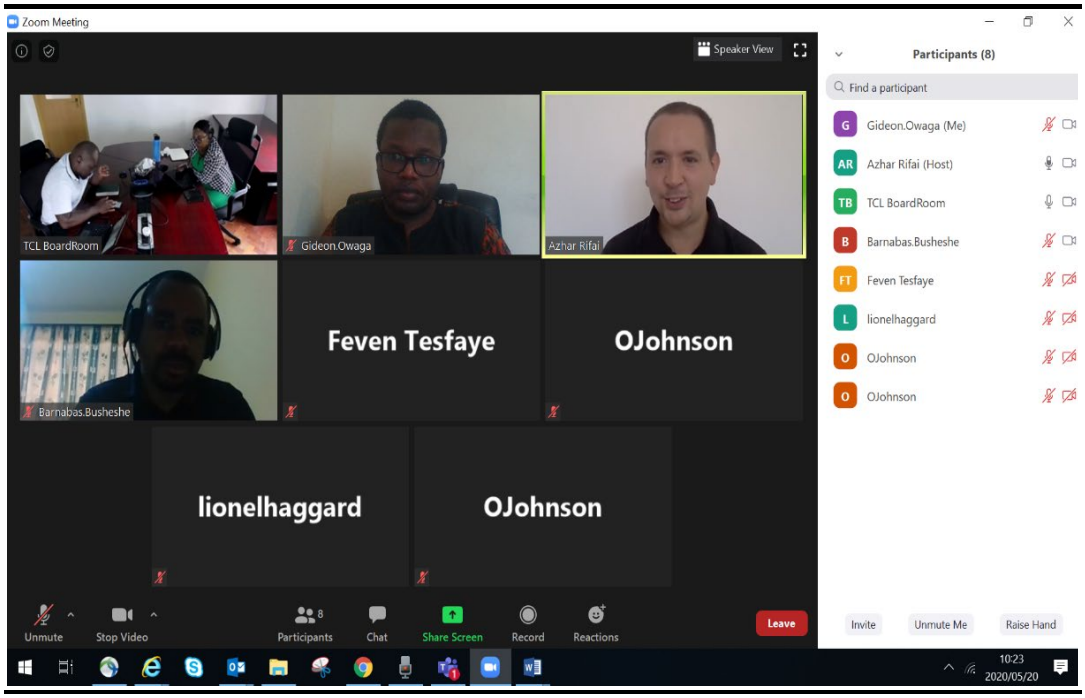
ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

6. Attendance Register



03 June 2020

Engagement with Tatu City Training Academy

Stakeholder engagement plan discussion:

National Regulatory Bodies Government Agencies

- We have agreed not to contact any of the Minster offices at the national level, but we will be contacting the Deputy County Commissioner and NEMA
- Justus has also recommended reaching out to the Deputy County Commissioner to help us get a no objection that will be posted in the notice board for public notification

Kiambu County Government

- Justus suggested contacting all the county level representatives independently might lead to conflicting information. He recommended sending one letter for the County Administrative Secretary (CAS) and CAS will coordinate all the relevant organisations – he also mentioned to include all the county departments we want to be included into the letter and CSA will help us secure/organise the meetings
- We have agreed to send individual letters to this organisation and if possible, we will try and hold a meeting with these organisation representatives. However, considering the COVID-19 it could be hard to hold meetings with more than 4 people, but Justus/Tito has suggested requesting a formal no objection letter from the organisations
- There are several additional organisations suggested by Justus – these organisations are all part of Tatu City or working in the Tatu City SEZ
    - Tatu City Water and Sewerage Company – county regulatory body
    - RUIRU Juja Water and Sewerage Company – county regulatory body
    - STECOL – road constructors
    - Unity Homes
    - Tatu City Training Academy – already engaged with County Liaison Officer
    - HUNKAR Gas
    - TING Long
- Political stakeholders – Clerk of Kiambu County Assembly and other stakeholders

Tatu City Development Control Committee (DCC)

- Tito has agreed to send us a formal no objection letter – we don't need to schedule a meeting with DCC, this will also be posted in Tatu City notice board for public notification

Traditional Authorities

- Justus has mentioned that it's not mandatory to consult traditional authorities for this project - during Strategic and Environment assessments, Tatu City has engaged all the community Elders and Area Chiefs and Tatu City have a license for the whole area. Hence, it will not be necessary to engage them again.

Neighbours:

- We have agreed to send individual letters to ALP and other neighbouring companies through Tatu City

General note: For all the organisation that needs to be consulted, Tito and Justus have recommended requesting a no objection letter and public notification (basically means posting the no objection letter on the organisation notice board) - if securing meetings with these organisations is difficult. Considering the COVID-19, this will be acceptable for NEMA.

Mugumo Tree

- Tito mentioned that Tatu City has a long-standing relationship with community elders and Area Chiefs. Hence, Tatu City will help us coordinate the Mugumo Tree cutting ceremony once the Legal and commercial sales agreement are finalised – we have agreed to follow up with Tito on this

Coffee plantation resettlements

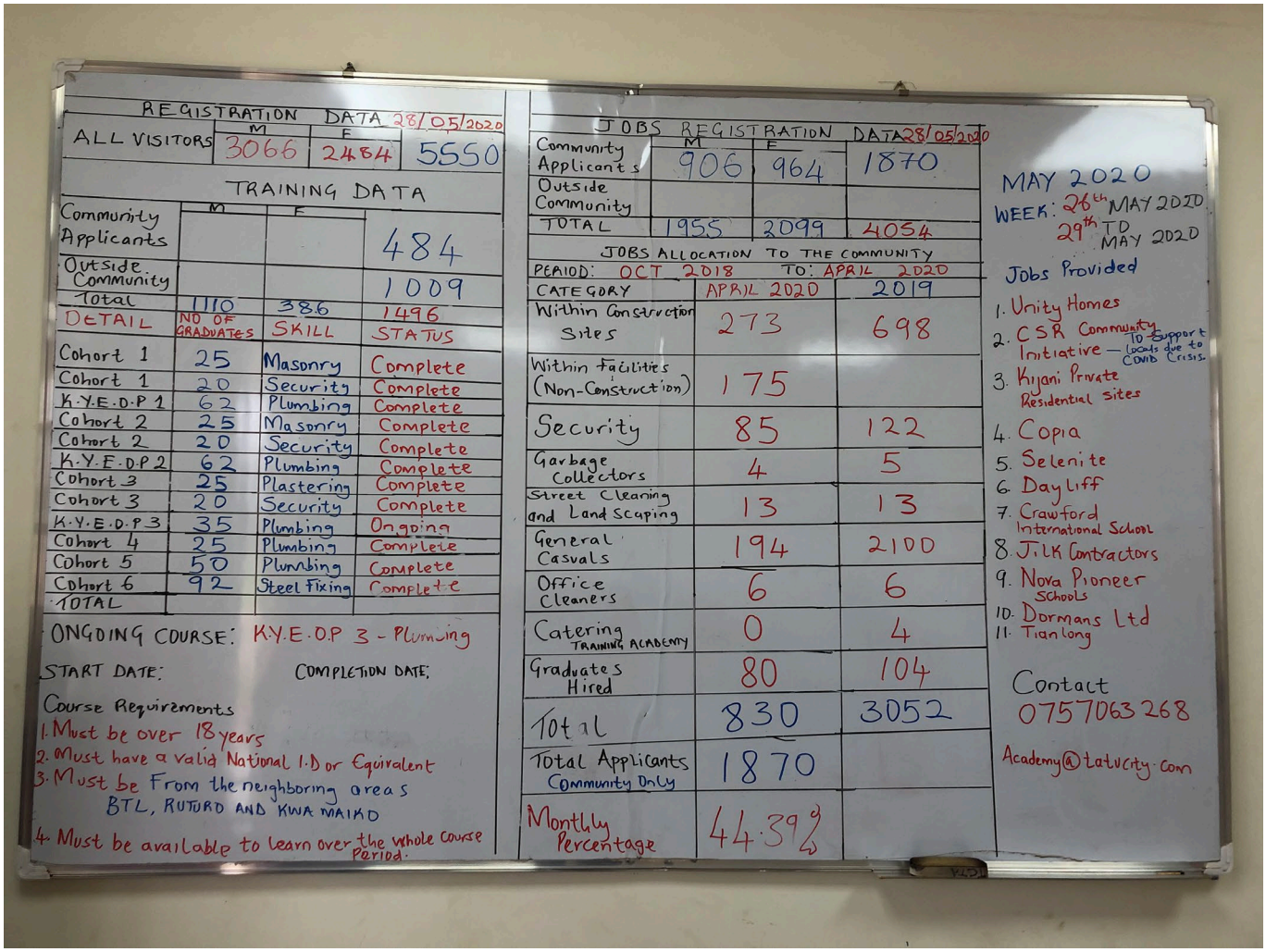
- During the development of Tatu City, there was only economical displacement (displacement of the coffee plantation) however, there were no communities that get displaced as a result of the economic zone development

- According to the Community Liaison Officer – there are ~100 people that were affected by this economical displacement and Tatu City has provided for these people and their subordinate an exclusive free training and job opportunities
- Majority of this displaced people are currently working in Tatu City construction projects and in Tatu City's coffee plantation (~5000 ha coffee farm)
- Tatu City is providing better compensation for its employees - currently, the minimum wage in Tatu City is 500 KSH/day…people working on the coffee plantation were paid 30 KSH/16 kg of coffee picked

Tatu City Training Academy:

- The training academy, in partnership with Arc Skills, teaches skills relevant to the construction industry, such as masonry, plasterwork, electrical, plumbing, painting, tiling, and carpentry. On completion of each six-week course, graduates are placed in construction jobs provided by contractors at Tatu City and the burgeoning development surrounding the project.
- All the training provided by Tatu City Training Academy is provided exclusively for communities in nearby areas to create an impact for the community.
- All contractors working at the project are required to hire from the local community. At present, around 3100 workers are currently on-site.
- Currently, Tatu City has a COVID-19 impact reduction initiative for the community – contract-based employment for people who lost their job due to the crisis

Tatu City Training Academy: Training (exclusive to the community members) / employment data as of April 5, 2020



Next Steps

- We have agreed to share a draft letter to Tito and Justus for feedback and input
- Justus has agreed to help us distribute the letters with the relevant organisation
- Tito has agreed to follow up on the Mugumo Tree cutting celebration and will keep us on the loop – after finalising the sale agreement

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

MEETING MINUTES

Stakeholder Consulted	Village Headmen– Ruiru
Subject/Project	Cold Solutions East Africa Limited ("CCSEAL") is committed to developing and operating best-in-class cold storage and logistics operations in its target countries in East Africa. Accordingly, our investment approach incorporates environmental and social considerations throughout the full investment cycle, from initial investment decision through to exit. CCSEAL aims to contribute to sustainable development in East Africa and is committed to act in an environmentally sustainable, socially responsible, and ethical manner. There is a severe shortage of cold storage chain solutions across East Africa resulting in large post-harvest food losses and a seasonally affected supply chains causing volatility in market pricing. The cold storage facilities and logistics operations developed by CCSEAL will result in positive development outcomes both directly, by reducing food losses and flattening market pricing, and also indirectly through businesses that will develop within the value chain. Food loss is a significant contributor to Green House Gases (methane) in Africa, therefore a reduction in food losses will also contribute to a reduction in Green House Gases. As such, from the offset CCSEAL's activities are geared towards positive environmental and social impacts. CSSEAL deals with a large network of suppliers and other third parties. Their suppliers play an important role as enablers of their sustainable growth and overall success. CSSEAL has set forth principles that are key for economic, social and environmental sustainability in order to ensure long-time success of CSSEAL and its stakeholders.
Project Number	0552902
Venue	Area Chief's Office
Date of Meeting	29th June 2020.
Participants/ Attendance	Refer to the Attendance Register attached.
Minutes by	Gideon Owaga.
Distribution	To be included in the ESIA Project Report

1. Introduction

The meeting began at 11:20 AM. The Area Chief welcomed the Project team from Environmental Resources Management (ERM), CSSEAL and Tatu City CLO.

In his introductory remarks, Gideon stated that ERM is a leading global provider of environmental, health, safety, risk, social consulting services and sustainability related services with more than 5,500 employees in over 40 countries and territories working out of

more than 160 offices. He further stated that ERM has been appointed by ARCH's Cold Chain Solutions East Africa Fund (CCSEAF), to undertake the Environmental and Social Impact assessment for the proposed project.

2. Project Description – (ARCH)

The TIP (in which the Project site is located) is a considered a mixed-use special economic zone (SEZ). TIP is located approximately 10 km northeast of Nairobi off the C63 national road. The Project will be developed on a 6-acre plot (ref L3-45b) within the NEMA permitted precinct of Tatu City 3BA. Precinct 3BA infrastructure, including roads and utilities, have been completed with over 80% of the plots sold and under development.

The Project entails the construction and operation of up to 12,000 m^2 cold storage facility with end-to-end logistics capable of storing 15,000-20,000 pallets. Key components of the project include:

- Warehouse facility with different refrigeration temperature zones. Refrigeration technology maybe ammonia, Glycol or Carbon dioxide CO_2 based.
- Supporting facilities including pump room, chiller area, power system (roof-top solar), guardhouse;
- 20-30 loading and unloading bays;
- Small Wastewater treatment Plant (WWTP) to treat cooling water effluent to national discharge standards and recycle 60% back into the cooling system.

Environmental and Social Impact Assessment (ESIA) Process- (ERM)

The Project requires Environmental Authorisation (EA) from the National Environment Management Authority (NEMA), through an Environmental and Social Impact Assessment (ESIA) process. NEMA is the competent authority under these regulations and has authority to approve the development or refuse it.

The ESIA process is guided by Environmental Management and Coordination Act (EMCA) of 1999 (reviewed in 2019), and the 2015 amendments and the associated Environmental (Impact Assessment and Audit) Regulations of 2003 (and the amendments of 2016). Reference is also made to Good International Industry Practice (GIIP) guidelines and the lender requirements, particularly, the IFC Performance Standards on environmental and social sustainability. As part of the ESIA process, stakeholder engagement and consultation is a paramount step to:

- Inform the stakeholders of the proposed project, associated impacts and identified measures to manage their significance to acceptable levels;
- Obtain stakeholders' views on the proposed project to inform its design and implementation, and gain stakeholder support/ social license to operate; and
- Open communication channels for use through the lifecycle of the project.

3. Key Discussion Points (Area Chief and Village Elder)

- The village headmen requested that any casual labour for the project should be locally sourced to the largest extent possible. In the past it has been observed that people are ferried from Nairobi to undertake jobs at Tatu City yet they have youths who are able to undertake those jobs. CSKL's representative, Feven, pointed out that they will be working closely with Tatu Training Academy and the local administration to ensure that the community is informed in advance about the available jobs and postings.
- The elders raised concern about the Mugumo Tree and the process by which it was going to be cut down. They pointed out that they are yet to receive any feedback on the ceremony and how it will be undertaken. ERM pointed out that they are working closely with Tatu City who will spearhead the process. They will ensure the process is in line with the cultural requirements and international best practice. The process will also be well documented.
- One of the village headmen pointed out that it will be very important that the Mugumo tree is not touched before the appropriate ceremony is conducted.
- One of the village headmen expressed appreciation on how Tatu City has continued working closely with the community specifically the Community Liaison Officer (CLO).
- One of the village headmen raised concerns about the drainage system. There have been concerns especially when it rains a lot of storm water damages the roads and property. There had been requests by the community to establish a bridge near the OJ-Kogeria Road or a bigger culvert to manage the water. Initially the area was an agricultural land where the coffee trees helped to absorb the water. It is anticipated that the problem may escalate in future and Tatu City need to take action as soon as possible. Because of the heavy stormwater, the road is often washed off and damaged.
- One of the Village headmen pointed out that they will require adequate time and notice to undertake the Mugumo Tree ceremony. There will be need to make preparations and activities such as fasting will be undertaken in advance. It is therefore important that the elders are informed in advance and given ample time and facilitation to prepare in advance. ERM pointed out that there have been several discussions with the village headmen regarding the requirements.

4. Way forward/ Conclusion/ General feedback from stakeholder consulted

- The village headmen were in full support of the project and have a good working relationship with Tatu City.
- As part of CSR, Tatu City should consider construction of a bridge and culvert to OJ-Kogeria Road to help manage the drainage/run-off water especially during heavy storms.
- Tatu City CLO assured the village headmen that their concerns were captured and the issue of the drainage and bridge will be followed up.
- The Area Chief proposed the construction of a bridge/culvert as part of the CSR activities which will play a role in fostering positive relationships with the communities.
- The Project Team will reach out to the Village headmen regarding the Mugumo Tree ceremony.

5. Closure

There being no other business, the meeting ended at 12:10 PM

6. Attendance Register

ERM

ERM East Africa (Pty) Ltd
Landmark Office Suites | 4th Floor | Laiboni Centre Lenana Road | Kilimani
PO Box 100798-00101 | Nairobi | Kenya
T + 254 20 49 38 113/4 | www.erm.com

The world's leading sustainability consultancy

PUBLIC MEETING REGISTER

CLIENT	VILLAGE HEADMEN
PROJECT	TATU CITY COLD STORAGE FACILITY
DATE	29TH JUNE 2020
VENUE	AREA CHIEFS OFFICE
TIME STARTED	11:20 AM
TIME ENDED	12:10 PM

Name	Sex (M/F)	Location	Telephone No.	ID No	Signature
Feven Tesfaye	F	Riiiind	+254-719-167-962	-	[illegible]
Gioruk Mwaura	M	CHIEF-RUIRU	0722426387		[illegible]
James Ndungu	M	ASST. CHIEF Gitothua	0725858320		[illegible]
W. GIKONYO KAMAU	M.	ELDER	0720215244		[illegible]
G. N. Kibutu	M.	Treasurer-Elder	0724904916		[illegible]
GITHAE GITHINJI	M	Org. Secr.-Elders (Ruiru)	0721921654		[illegible]
MARTIN KIARIE	M	C.L.D TATU CITY	0748254407	22272967	[illegible]
GIDEON OWAGA	M		0721922109	23026740	[illegible]

ERM

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

Telephone: +254 740 861 650/1
Fax: +254 71 265 0516

www.erm.com

7. Photos

 Village Headmen and Area Chief listen along during the Stakeholder engagement meeting held at the Chief's Office	 Tatu CLO Martin Kiarie and Feven Tesfaye from Arch present during the meeting.

THE PRESIDENCY
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

Telegrams" DISTRICTER" RUIRU Telephone: 0722429010 Email: dcc.ruiru@interior.go.ke. When replying please quote **REF:CON/M5/VOL.1/3**	DEPUTY COUNTY COMMISSIONER RUIRU SUB-COUNTY P.O. BOX 140-00232 **RUIRU** **DATE:1ST JULY, 2020**

THE DIRECTOR
COLD SOLUTION KENYA

RE: **ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT FOR THE PROPOSED TATU CITY TEMPERATURE CONTROLLED STORAGE FACILITY PROJECT: REQUEST FOR CONSULTATION MEETING.**

I wish to refer to your letter dated 12th June, 2020 and your emails of 22nd June, 2020 on the above subject.

This is to appreciate your invitation to participate in the on –going Environmental and Social Impact Assessment(ESIA) and E.I.A process for the proposed Tatu City Temperature Controlled storage facility Project (TCSF).

We also take note of the project background information report that was shared both in hard copy and virtual presentation via zoom .This office is cognizant of anticipated positive and negative impact of the project during construction , operation ,replenishment and renewal phases.

As I indicated during the virtual meeting the Government appreciates the anticipated Social Economic Impacts of the Project and is also satisfied with the proposed Mitigation measures proposed to deal with anticipated negative impact, Specifically we will support the project throughout the three phases and especially during cheering of the site that will require cultural rites before removal of Sacred Mugumo tree from the site.

Attached please find a summary of our feedback and concerns we have on the project.

Regards

DEPUTY COUNTY COMMISSIONER
RUIRU SUB-COUNTY
P. O. BOX 140, RUIRU

GEOFFREY KITHINJI ITHAI
DEPUTY COUNTY COMMISSIONER
RUIRU SUB-COUNTY

PRIMARY COMMENTS AND CONCERNS ABOUT THE PROJECT

1) **Positive impacts expected to emanate from the development of the proposed project.**

- Achievement of a cold storage facility.
- Price stability for agricultural products, (meat, horticulture products etc.)
- Food security.
- Jobs for the locals.
- Achievement of agricultural best practices.

2) **Negative Socio-Economic Impacts anticipated from the development.**

- Pollution during construction (dust and smoke emissions).
- Increased drainage discharge.

3) **Negative environmental impacts anticipated from the development of the proposed project.**

- Expansion of waste water and storm water discharge.
- Pollution(dust and greenhouse gas effects)
- Drainage blockages

4) **Proposed mitigation measures the developer needs to put in place during and after the development of the proposed project.**

- Expansion of drainage draining system.
- More research on greenhouse gases emission from the project.
- Expansion of roads within Tatu Industrial zone.

5) **Do you support the development of the proposed project?**

Yes we do

6) **Other comments**

- To recommend engagement with Sub-County Security Committee from the onset to be able to address issues as they emerge.

DEPUTY COUNTY COMMISSIONER
RUIRU SUB-COUNTY
P. O. BOX 140, RUIRU

GEOFFREY K. ITHAI
DEPUTY COUNTY COMMISSIONER
RUIRU SUB-COUNTY

Comments Form (please feel free to use an extra form if you have more comments)

What are the primary comments / questions / concerns that you or your organisation have about this Project?

What positive impacts do you expect to emanate from the development of the proposed Project?

- Will enhance cold storage and reduce shortfall in cold warehousing
- There will be enhanced trade w.r.t. fresh products
- Employment creation.
- Fulfilment of partial goal of Tatu being a hub for such infrastructure.

What negative socio-economic impacts do you anticipate from the development of the proposed Project?

- Risk of asphyxiation arising from potential ammonia leakage during operation period.
- Waste management problems arising from potential organic waste.
- Increased strain/pressure on infrastructure and utilities of Tatu City.

What negative environmental impacts do you anticipate from the development of the proposed Project?

- Deterioration of air quality arising from smell of organic waste during operational phase.
- Construction environmental impacts like noise, vibrations and dust emmission during the construction phase.
- Disposal of effluent to existing drainage considering agricultural neighborhood

Kindly propose mitigation measures the Developer needs to put in place during and after the development of the proposed Project

- Collection and disposal of generated waste to be done by licenced experts.
- Adherence to the conditions provided on the nema EIA license.
- Ensuring protection of workers from noise, dusts and vibratio

Do you support the development of the proposed Project?

- We support the development of the proposed project and urge that suggested measures be adhered to.

Other Comments

The proponent and even the Contractor to demonstrate that environmental provisions as per EMCA Cap 387 and Occupational Safety and Health Act 2007 will be in place during the entire phases of the project.

KATRINA MANAGEMENT CONSULTANTS LTD. P.O. Box 67688 - 00200, NAIROBI 13 JUN 2023

For Tatu City Ltd.

S. Nyakego.

How to Submit Comments

Should you have any queries, comments or suggestions regarding the proposed project, please note them below.

Please provide your contact details.

Name and Title: HUNKAR TRADING CO. LTD.	**Affiliation/Organisation:**
Phone: 0721702984	**Email:** finance@hunkargas.co.ke.
Address: 64445 Nairobi	

Cold Solutions Kenya Limited

Tel : +254 20 389 2512

Email : info@coldsolutionseastafrica.com

Address: ICEA Lion Centre, Riverside Park, Chiromo Road, Nairobi

Project Website: https://www.coldsolutionseastafrica.com/

Public Participation in the ESIA

The stakeholder engagement process is designed to conform to the NEMA Regulations and global best practice. Key objectives for stakeholder engagement for this Project are:

- Share information about the Project and gather local knowledge to improve understanding of the environmental and social context and understand locally important issues;
- Enable stakeholders to raise concerns/questions about the Project and incorporate stakeholder views into the design and management measures;
- Respond to concerns and questions and report back on the findings of the ESIA and proposed management measures;
- Lay foundation for future stakeholder engagement.

Any party that is interested or potentially affected by the Project is invited to participate in the ESIA process. Please make use of the following opportunities to be involved in the stakeholder engagement process:

- Study the information in the BID.
- Contact the Project Team for further information or raise issues and concerns.
- Complete the Comment Sheet (attached) and return by hand, mail, fax or e-mail;
- Attend planned stakeholder meetings. More information about the meetings will be circulated through letters, community leaders, and through the Project website.

Comments Form (please feel free to use an extra form if you have more comments)

What are the primary comments / questions / concerns that you or your organisation have about this Project?

What positive impacts do you expect to emanate from the development of the proposed Project?

The first priority will be awarded to the large community eradicate Joblessness amongst the youths.

What negative socio-economic impacts do you anticipate from the development of the proposed Project?

Disregard towards key issues from the community participation. e.g. employment.

What negative environmental impacts do you anticipate from the development of the proposed Project?

For that I have never been in touch with such a processing/ Cooling Plant, I hope it will not cause any enviromental degradation.

Kindly propose mitigation measures the Developer needs to put in place during and after the development of the proposed Project

Proper control of Company's by product either by combustion or disposal.

Do you support the development of the proposed Project?

Absolutely yes, for it will bring economic impact as well as to bring fortune to the Community and society at large.

Other Comments

How to Submit Comments

Should you have any queries, comments or suggestions regarding the proposed project, please note them below.

Please provide your contact details.

Name and Title: MARTIN KIARIE - COMMUNITY LIAISON	**Affiliation/Organisation:** TATU CITY
Phone: 0748254407 / 0711284247	**Email:** Academy@tatucity.com
Address: TATU CITY LTD - TRAINING ACADEMY	

Cold Solutions Kenya Limited

Tel : +254 20 389 2512

Email : info@coldsolutionseastafrica.com

Address: ICEA Lion Centre, Riverside Park, Chiromo Road, Nairobi

Project Website: https://www.coldsolutionseastafrica.com/

Public Participation in the ESIA

The stakeholder engagement process is designed to conform to the NEMA Regulations and global best practice. Key objectives for stakeholder engagement for this Project are:

- Share information about the Project and gather local knowledge to improve understanding of the environmental and social context and understand locally important issues;
- Enable stakeholders to raise concerns/questions about the Project and incorporate stakeholder views into the design and management measures;
- Respond to concerns and questions and report back on the findings of the ESIA and proposed management measures;
- Lay foundation for future stakeholder engagement.

Any party that is interested or potentially affected by the Project is invited to participate in the ESIA process. Please make use of the following opportunities to be involved in the stakeholder engagement process:

- Study the information in the BID.
- Contact the Project Team for further information or raise issues and concerns.
- Complete the Comment Sheet (attached) and return by hand, mail, fax or e-mail;
- Attend planned stakeholder meetings. More information about the meetings will be circulated through letters, community leaders, and through the Project website.

Comments Form (please feel free to use an extra form if you have more comments)

What are the primary comments / questions / concerns that you or your organisation have about this Project?

What positive impacts do you expect to emanate from the development of the proposed Project?

- Creation of More Jobs
- Growth of local farming as provision of Post-Harvest Service will improve farming.

What negative socio-economic impacts do you anticipate from the development of the proposed Project?

- Destruction of the Mugumo Tree which has been serving as a great Land Mark.
- ill health from the those working in the Cold Storage facility for a layer duration.

What negative environmental impacts do you anticipate from the development of the proposed Project?

Increase in Storm Water Collected by the facility

Kindly propose mitigation measures the Developer needs to put in place during and after the development of the proposed Project

- Proper management of Storm Water.
- Proper Management and Control of Dust pollution.

Do you support the development of the proposed Project?

Yes I do.

Other Comments

The facility should provide jobs to the Members of the local community. This can be made easier by working Close together with Tatu City Trainy Academy.

ERM has over 160 offices across the following countries and territories worldwide

Argentina
Australia
Belgium
Brazil
Canada
Chile
China
Colombia
France
Germany
Guyana
Hong Kong
India
Indonesia
Ireland
Italy
Japan
Kazakhstan
Kenya
Malaysia
Mexico
Mozambique
Myanmar
The Netherlands
New Zealand
Norway
Panama
Peru
Poland
Portugal
Puerto Rico
Romania
Russia
Singapore
South Africa
South Korea
Spain
Sweden
Switzerland
Taiwan
Tanzania
Thailand
UK
US
Vietnam

ERM's Nairobi Office

Senteu Plaza
1st Floor, Cnr of Lenana and Galana Roads, Kilimani
Nairobi, Kenya

T: +254 740 861 650/1
F: 254 71 265 0516

www.erm.com

The business of sustainability

ERM