

**ENVIRONMENTAL AND SOCIAL IMPACT STATEMENT FOR THE PROPOSED
ESTABLISHMENT OF FEMALE HOSTEL LOCATED ON PLOT NO. 1881 BLOCK "B", PPF
MTAA, KISEKE WARD, IN ILEMELA MUNICIPALITY, MWANZA REGION, TANZANIA.**



PROPONENT

Institute of Finance Management (IFM)

P.O. Box 3918

Dar es Salaam, Tanzania.



MARCH 2024

EXECUTIVE SUMMARY

INTRODUCTION

The Government of the United Republic of Tanzania through the Ministry of Education, Science and Technology (MoEST) has received funds from the World Bank under Higher Education for Economic Transformation (HEET) project. HEET is a 5-year project that aims to promote higher education as a catalytic force in the new Tanzanian economy. The project is designed to revitalize and expand the capacity of 22 institutions to contribute to key areas for innovation, economic development, and labour market relevance. The project invests in the necessary infrastructure for modern and effective teaching and research, while also providing training for Institute's staff to help them reach their full potential. The Institute of Finance Management (IFM) in Mwanza is one among the institutions benefited from the Higher Education for Economic Transformation (HEET) project.

The IFM Mwanza is currently using rented facilities for hostel hence is intending to use the HEET funds to construct a female Student Hostel. The hostel to be built will be a five-storey building capable of accommodating 280 female students only. This development aims to provide modern and affordable hostel to the enrolled students which will also be near the learning facilities. The proximity of the facilities to the campus will reduce travel time and thus, increase the students' performance academically.

However, the construction of buildings and associated activities is expected to have adverse environmental, social and economic impacts. These impacts need to be identified, predicted and evaluated so that positive impacts are enhanced while mitigation measures are developed for negative impacts. In this regard, the project developer required to carry out an Environmental and Social Impact Assessment (ESIA) prior to project implementation as prescribed by Tanzanian Environmental Management Act of 2004 and Third Schedule to Environmental Management Act, Cap 191 and First Schedule to Environmental Impact Assessment and Audit (Amendment) Regulations, 2018 and the World Bank provides Environmental and Social Framework (ESF), Environmental and Social Safeguarding Policies (ESSP) and relevant Environmental and Social Standards (ESSs).

PROJECT DESCRIPTION

The proposed project site is located on plot no. 1881, Block B, PPF Mtaa, Kiseke Ward, Ilemela Municipality, Mwanza Region. The proposed project site can be accessed by Airport Road from the city centre and then cross right to Saba-saba Buswelu Road. The proposed project land for the student's hostel covers a total area of 14,943 SQM. The total built-up area for the hostel is 3001.35 SQM with plot coverage of 4.5% and a plot ratio of 0.2.

The proposed project will include the construction of five storey single hostel building for female students. The proposed female Student Hostel will have a capacity of accommodating 280 students in total. The proposed project Area covers 530 sqm on each floor, a total of 2650 sqm. Each floor will comprise of: 14 rooms each with 4 students, Entrance veranda, Office, Common area, Laundry area with 3 dhobi sinks and Toilets and bathrooms. Upon completion, the proposed female hostel will accommodate a total number of 280 students and about 20 staff members including administration and supporting staffs.

EXISTING ENVIRONMENT AND SURROUNDING

The project is at the design stage. Activities at this stage include obtaining different permits and approvals; conducting perimeter and topographic surveys; conducting feasibility studies, detailed engineering designs and environmental and social impact assessment studies. The project area is covered with trees, shrubs and grasses and is boarded with residential houses on both sides. When the project implementation kicks off some vegetation in the project site are going to be modified. However, after the construction phase of the project is over, some of the open spaces will be re-planted with grasses, trees and flowers.

PROJECT ACTIVITIES

The development of the proposed project will involve various phases, including the design (planning) phase, construction phase, operation phase and decommissioning phase. The planning phase will involve surveying the proposed sites for construction of the facilities at Kiseke Ward in Ilemela Municipality in Mwanza Region. A survey, in this case, refers to land investigations, drilling, measurements and pre-works examination of the site. The 20 months of the actual construction phase of the project will involve standard construction activities such as construction management, site preparation and leveling, excavation, compaction, setting the foundation, installation of electrical, water and wastewater infrastructure, erection of superstructures, etc. During operational phase the project will involve running of the hostel. During decommissioning phase the activities to be involved will be shutting down of the hostel facility and/or removing it from operation followed by re-commissioning, repurposing or demolition.

POLICY, ADMINISTRATIVE AND LEGAL FRAMEWORK

Some of the National laws, policies, plans, strategies and legislation relevant to this project have been discussed in this report. Furthermore, this ESIA study has also complied with the following tools: World Bank's new Environmental and Social Framework (ESF) and The World Bank Environmental and Social Safeguarding Policy for Investment and Social Standards (ESSs).

BASELINE INFORMATION

The project site is composed of high diversity of plant species of different life forms including herbs, grass, shrubs and trees. The study area is devoid of visible free-ranging fauna. The animals observed during assessment are not included on either the CITES or the IUCN red list. Most of the animals discovered at the site are domestic animals from nearby community or surrounding residential areas. However, there is a variety of bird species and reptiles such as lizards, snakes and a significant number of rats, bugs and flies. Also, Domestic animals are such as livestock; goats, cows and sheep. Also, there are numerous stray dogs, cats and chickens.

STAKEHOLDERS ENGAGEMENT AND PUBLIC CONSULTATIONS

Stakeholders' identification and engagement process was conducted based on EIA and Audit Regulations, 2005 and its amendment of 2018 and World Bank Environmental and Social Standards (ESS10) and Stakeholders Engagement Plan (SEP). The SEP covers both national and sub-national engagement; however, a greater focus was placed on sub-national stakeholders. The SEP provides details on the engagement needed associated with project activities. The stakeholder consultation involved face to face interviews with representatives of relevant Government Institutions, Agencies and Local Government Authorities. The identification of stakeholders was based on how they are related to the project, how the project is going to affect them and why should they be consulted. The identified stakeholders can be categorized into Developers; Decision makers; Interested parties; and Affected parties positively or negatively and directly or indirectly. In addition, a mechanism was put in place to address grievances; Gender based Violence (GBV), Sexual Exploitation and Abuse (SEA) and Sexual Harassment (SH).

PROJECT ALTERNATIVES

Several project alternatives were considered for this project based on the techno-economic, environmental and social criteria.

- i. "No Project Alternative"; VS "Project Alternative"-The Project Alternative was selected in favor of the: No Project Alternative" due to its long-term social and economic benefits.
- ii. Alternative Source of water: Borehole and rain water harvesting were preferred since the village area depends on water from the boreholes and rain.
- iii. Alternative Source of Energy: National grid electricity is the preferred option and this can be supplemented by solar power and/or standby generator.
- iv. Solid Waste Management Alternatives: By adopting the principles of reduce, reuse, recycle and recover resources, integrated solid waste management system offers significant environmental and financial benefits compared to landfilling and open waste burning.

- v. Liquid Waste Management Alternatives: Given the space limitations, high water table and regular emptying, Anaerobic waste water treatment plant is recommended as the most feasible and sustainable liquid waste management alternative for the proposed project.

ASSESSMENT OF ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS

- a) The assessed environmental risks and impacts were based on:
 - i. World Bank Environmental Health and Safety Guidelines (EHSGs);
 - ii. Effects related to climate change;
 - iii. Effects of any material threat to the protection, conservation, maintenance and restoration of natural habitats and biodiversity;
 - iv. Effects related to ecosystem services and the use of living natural resources; and those related to the design of the physical facilities.
- b) The assessed socio-economic risks and impacts were based on:
 - i. Threats to human security through crime or violence; and
 - ii. Risks that project impacts fall disproportionately on individuals and groups who because of their particular circumstances, may be disadvantaged or vulnerable.

All positive and negative impacts on environment, social, economic and their respective mitigation measurements were made exhaustively as detailed in the main report.

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The options to minimize or prevent the identified adverse social and environmental impacts as well as a monitoring plan have been suggested in this report and are contained in the project's ESMP in which the majority of them are based on good engineering practices. The Environmental and Social Management Plan (ESMP) presents the implementation schedule for the proposed mitigation measures to both environmental and social impacts as well as planning for long-term monitoring activities. The project's ESMP also includes the associated environmental costs needed to implement the recommended mitigation measures. The engineering designs shall include the mitigation measures recommended in this report.

ENVIRONMENTAL AND SOCIAL MONITORING PLAN

The EIS presents an outline of the Environmental and Social Monitoring Plan (ESMoP) to record parameters to be monitored and frequency of monitoring.

COST-BENEFIT ANALYSIS OF THE PROJECT

The EIS presents an assessment of the project, in terms of negative impacts, compared to the socio-economic benefits that will not happen if the project is not implemented. Environmental cost benefit

analysis has been assessed in terms of the negative versus positive impacts. The potential benefits of the project, in terms of financial and social benefit are substantial. Similarly, the environmental impacts can be reasonably mitigated and the financial resources needed to mitigate negative impacts, when compared to the required investment, are relatively small.

DECOMMISSIONING

A preliminary decommissioning plan has been developed. Should the decommissioning become inevitable the plan provides a general description of decommissioning methods considered feasible for the proposed project. The description is intended to demonstrate that the methods considered are practical and that they protect the health and safety of the public and decommissioning personnel. Project decommissioning has five phases: (1) pre-removal monitoring; (2) permitting; (3) interim protective measures; (4) Project removal and associated protective actions; and (5) post-removal activities, including monitoring of environment and socio-economic activities. However, the proposed project will have a long-life span of more than fifty years.

SUMMARY AND CONCLUSION OF THE ESIA STUDY

The ESIA study has been undertaken at all levels by following guidelines, laws and regulation related with environmental and social issues at a high level of care and due diligence. The environmental and social implications of the proposed Construction of IFM – 5 storey female Hostel Building at PPF Mtaa, Kiseke Ward in Ilemela Municipal Council, Mwanza Region, Tanzania was conducted in compliance with the Environmental Management Act (2004) and was done in accordance with the EIA and Audit (amendment) Regulations, 2018 as well as World Bank Environment and Social Framework (ESF) and the project’s Environmental and Social Management Framework (ESMF) respectively. Stakeholder consultations were conducted during the study to encompass central and local government authorities, communities in the project neighborhoods and interested parties. Standard methodology for impact identification was used including checklist, matrix and professional judgment.

Based on the findings, it is evident that development of the proposed IFM – 5 storey female hostel building will greatly contribute towards provision of modern and affordable housing to students for country socio-economic development. The Environmental and Social Impact Assessment study for the proposed project indicates that, the potential negative impacts can be easily mitigated without any major effect to the environment. However, some important resources/receptors may be affected negatively such as flora, fauna, the soil and water resources and air as well as local community. The impacts associated with these mostly vary from low to moderate significance and can be mitigated as shown in the Environmental and Social Management plan.

ACKNOWLEDGEMENT

This report has been prepared by ARMS on Environment Limited of Dar es Salaam on behalf of the Institute of Finance Management (IFM). The Proponent wishes to thank all stakeholders and the Regulatory institution i.e. National Environment Management Council (NEMC) and individuals who have contributed views and ideas that form part of this report.

In particular, we wish to thank Ilemela Municipal Council Officers, Occupational Health and Safety Authority (OSHA), Leaders at the Local Community Level (Ward and Mtaa), and all other stakeholders for their valuable views and comments.

LIST OF ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immuno- Deficiency Syndrome
AADTN	Annual Average Daily Traffic Number
CITES	Convention on International Trade an Endangered Species
CRB	Contractors Registration Board
CNG	Compressed natural gas
dB	Decibel
DOE	Division of Environment
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
EIS	Environmental Impact Statement
ERB	Engineers Registration Board
GHGs	Green House Gases
GOT	Government of Tanzania
HEET	Higher Education for Economic Transformation (HEET)
HIV	Human Immune Virus
IFM	Institute of Finance Management
IUCN	International Union for Conservation of Nature
LGA	Local Government Authority
LULUCF	Land Use Land use –change and Forestry
NACP	National HIV/AIDS Control Programme
NACTVET	National Council for Technical and Vocational and Training
NAFORMA	National Forest Resources Monitoring And. Assessment
MWAUWASA	Mwanza Urban Water Supply and Sanitation Authority
NEMC	National Environment Management Council
NEP	National Environment Policy
NGOs	Non-Governmental Organizations
NCCSR	National Climate Change Statistics Report
OSHA	Occupational Safety and Health Authority
PLHAS	People Living with HIV/AIDS
PPE	Personal Protective Equipment

RHA	Risk Hazard Assessment
STD	Sexually Transmitted Diseases
TANESCO	Tanzania Electricity Supply Company
TBS	Tanzania Bureau of Standards
TIN	Taxpayer Identification Number
TOR	Terms of Reference
TRA	Tanzania Revenue Authority
URT	United Republic of Tanzania
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax
WHO-GPA	World Health Organization Global Programme on AIDS

STUDY TEAM

This Environmental and Social Impact Statement has been prepared by the team of experts as tabulated in Table 1 below.

Table 1; ESIA Team information






SN	NAME	TITLE	SIGNATURE
1	Dr. Abubakar Salum Rajabu	Team Leader Environmental Scientist	
2	Dr Joseph Mango	GIS Specialist	
3	Miss. Paulina Simon	Environmental Scientist	
4	Miss. Mary Ngajilo	Sociologist	
5	Miss Vicky Moshi	GBV Expert	

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	i
ACKNOWLEDGEMENT	vi
LIST OF ACRONYMS AND ABBREVIATIONS	vii
STUDY TEAM.....	ix
TABLE OF CONTENTS	x
LIST OF TABLES.....	xx
LIST OF FIGURES	xxi
LIST OF APPENDIXES	xxi
CHAPTER ONE.....	1
INTRODUCTION.....	1
1.1 Project Background	1
1.2 Project Rationale.....	2
1.3 Objective of HEET Project.....	3
1.3.1 Main Objectives of the HEET Project	3
1.3.2 Specific Objectives IFM HEET Project	4
1.4 Objective of Environmental and Social Impact Assessment (ESIA) Study	4
1.5 Scope of Work	5
1.6 Approach and Methodology of the ESIA Study.....	5
1.6.1 Approach.....	5
1.6.2 Methodology.....	6
1.7 Report Structure.....	7
CHAPTER TWO.....	9
PROJECT DESCRIPTION	9
2.1 Introduction.....	9
2.2 Project Location, Accessibility and Size	9

2.3	Land Tenure, Use, Ownership and Management	9
2.4	Status of Cadastral Surveying.....	9
2.5	Existing Environment and Surrounding	12
2.6	Project Components.....	12
2.7	Project Design.....	14
2.7.1	Climate Change Risks Mitigation and Adaptation in the Project Design	14
2.7.2	Disaster Risk Management.....	15
2.7.3	Gender Inclusivity	15
2.7.4	Occupational Health and Safety (OHS).....	15
2.8	Project Phases / Activities	18
2.8.1	Pre-construction Phase.....	18
2.8.2	Construction Phase	19
2.8.3	Operational Phase	23
2.8.4	Decommissioning Phase.....	25
2.9	Project Boundaries.....	25
2.9.1	Institutional Boundaries.....	26
2.9.2	Temporal Boundaries.....	26
2.9.3	Spatial Boundaries	26
CHAPTER THREE		28
POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK.....		28
3.1	Introduction.....	28
3.2	Relevant Policies	28
3.2.1	National Environment Policy NEP (2021).....	28
3.2.2	The Energy Policy, 2015	29
3.2.3	National Land Policy (2019)	29
3.2.4	The National Construction Policy (2003).....	29
3.2.5	The National Water Policy (2002).....	30

3.2.6	National Gender Policy (2002).....	30
3.2.7	National Health Policy (2008).....	30
3.2.8	The Urban Planning Regulations (Space Standards), 2018.....	31
3.2.9	The Tanzania Education Training Policy (2014).....	31
3.2.10	National Policy on HIV/AIDS (2003).....	31
3.2.11	The National Occupational Health and Safety Policy (2010)	32
3.3	Relevant Legal Framework.....	32
3.3.1	The Environmental Management Act, Cap 191	32
3.3.2	The Land Act Cap 113 R. E. 2019.....	33
3.3.3	The Roads Act No. 13 of 2007	33
3.3.4	Standard Act of 2009	33
3.3.5	The Urban Planning Act (2007)	35
3.3.6	The Architects and Quantity Surveyors Act (1997)	36
3.3.7	Fire and Rescue Act (2007)	36
3.3.8	Water Resource Management Act 2009	36
3.3.9	The Public Health Act 2009	37
3.3.10	Workers Compensation Act Cap 263 R. E 2015	37
3.3.11	HIV and AIDS (Prevention and Control) Act No. 28 of 2008	37
3.3.12	The Engineers Registration Act and its Amendments 1997 and 2007	37
3.3.13	The Contractors Registration Act, 1997	38
3.3.14	Employment and Labour Relations Act (No.6), 2004.....	38
3.3.15	The Child Act, 2010	38
3.3.16	The Local Government Law (Miscellaneous Amendment) Act, 2006.....	39
3.3.17	The Persons with Disability Act, 2010	39
3.3.18	Occupational Health and Safety Act No. 5 of 2003	39
3.4	Relevant National Plans and Strategies	40
3.4.1	The Tanzania Development Vision (2025).....	40

3.4.2	The Third National Five-Year Development Plan (FYDP III; 2021/22 – 2025/26)	40
3.4.3	The National Plan of Action to End Violence against Women and Children (NPA-VAWC) 2017/18-2021/22	41
3.5	Relevant Regulations and Guidelines	41
3.5.1	Environmental Impact Assessment and Audit Regulations (2005 amended in 2018)	41
3.5.2	The Environmental Management (Fee and charges) (Amendment) Regulations, 2021)	41
3.5.3	The Environmental (Solid Waste Management) Regulations. 2009 as amended in 2016 ..	42
3.5.4	The Environmental Management (Standards for the Control of Noise and Vibrations Pollution) Regulations, 2015	42
3.5.5	The Environment (Registration of Environment Experts) Regulations 2005	42
3.5.6	Environmental Management (Air Quality Standards) Regulation, 2007	43
3.5.7	The Fire and Rescue Force (Fire Precautions in Building) Regulations, 2015	43
3.5.8	Environmental Management (Soil Quality Standards) Regulation, 2007	44
3.5.9	Environmental Management (Water Quality Standard) Regulation, 2007	44
3.5.10	Urban Planning (Zoning of Land Uses) Regulations, 2018	45
3.5.11	The Urban Planning (Application for Planning Consent) Regulations, 2018	46
3.5.12	Environmental Management (Control of Ozone Depleting Substances and Hydrofluorocarbons) Regulations, 2022.....	46
3.6	Institutional Framework for the Management of Environment.....	47
3.6.1	Overall Management Responsibility	47
3.7	IFM Project Implementation Unit	49
3.8	Key players in implementing the ESMP	52
3.8.1	Funding Institutions	53
3.8.2	The Institute of Finance Management - UPIU	53
3.8.3	NEMC.....	53
3.8.4	The Contractor	53
3.9	Relevant World Bank Environmental and Social Frameworks.....	54
3.9.1	Objective of the Environmental and Social Framework.....	55

3.9.2	World Bank Environmental and Social Standards	55
CHAPTER FOUR	58
ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS	58
4.1	Introduction.....	58
4.2	Geographical Location.....	58
4.3	Physical Characteristics	58
4.3.1	Climate.....	58
4.3.2	Existing Land Use.....	60
4.3.3	Existing Land Cover	60
4.3.4	Topography.....	61
4.3.5	Soil.....	61
4.3.6	Geology.....	61
4.3.7	Air Quality, Noise level and Vibration Measurements	62
4.3.8	Natural Disasters Risks.....	62
4.4	Biological Environment.....	63
4.4.1	Type of Habitat	63
4.4.2	Flora.....	63
4.4.3	List of IUCN Threatened Plant Species Categories and CITES identified in the area.....	63
4.4.3	Fauna.....	63
4.4.4	Ecosystem and Ecosystem Services	64
4.5	Socio-Economic and Cultural Conditions	67
4.5.1	Demography	67
4.5.2	Education	68
4.5.3	Health.....	68
4.5.4	Water Supply	68
4.5.5	Waste Management	69
4.5.6	Gender Inclusivity	69

4.5.7	Religious Facilities	69
4.5.8	Energy and Power Supply	69
4.5.9	Telecommunication	69
4.6	Economic Context and Analysis of Economic Activities in the Project Area	70
4.6.1	Economic Activities.....	70
CHAPTER FIVE		71
STAKEHOLDER ENGAGEMENT AND GRIEVANCES REDRESS MECHANISMS		71
5.1	Introduction.....	71
5.2	Objectives of the Consultation Process	71
5.3	Identification of Stakeholders.....	72
5.4	Engagement Approach during Preparation Phase	73
5.5	Identification of Issues and Problems.....	73
5.6	Stakeholders' Views and Concerns.....	74
5.7	Stakeholders Engagement during Implementation.....	83
5.8	Stakeholders Engagement during Implementation:.....	87
5.9	Stakeholders' Engagement Plan (SEP).....	90
5.10	Grievance Redress Mechanisms	96
5.10.1	Levels of Grievances Handling at IFM Institution	96
5.10.2	Grievance Procedure for Construction and Operational of the Proposed Project	97
CHAPTER SIX.....		102
ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES		102
6.1	Introduction.....	102
6.2	Impact Identification.....	102
6.3	Impact Evaluation and Scoring Matrix.....	103
6.3.1	Magnitude	103
6.3.2	Significance	103
6.3.3	Probability of Occurrence.....	103

6.3.4	Duration	103
6.4	Impact Rating Criteria	108
6.4.1	Spatial Scale.....	108
6.4.2	Temporal Scale	108
6.4.3	Phase	108
6.4.4	Reversibility of the Impact	109
6.4.6	Cumulative Impacts.....	109
6.4.7	Residual Impacts.....	109
6.5	Description of Environmental / Social Impacts.....	109
6.5.1	Positive Social Impacts during Mobilization Phase	109
6.5.2	Negative Social Impact during Mobilization Phase	110
6.5.3	Negative Environmental Impacts during Mobilization Phase	111
6.5.4	Positive Social Impacts from the Construction Phase	111
6.5.5	Negative social Impacts from the Construction Phase	112
6.5.6	Negative Environmental Impacts from the Construction Phase.....	115
6.5.7	Positive Social Impacts from Operation Phase.....	120
6.5.8	Negative Social Impacts from Operation Phase	121
6.5.9	Negative Impacts on Physical Environment from Operation Phase.....	122
6.5.10	Positive Social Impact from Decommissioning Phase	123
6.5.11	Negative Social impacts from Decommissioning Phase	123
6.5.12	Positive Environmental Impact from Decommissioning Phase	124
6.5.13	Negative Environmental Impacts from Decommissioning Phase	124
6.6	Cumulative Impacts	125
6.6.1	Increase in Volume of Traffic.....	125
6.6.2	Socioeconomic Issues	125
6.7	Consideration of Project Alternatives.....	125
6.7.1	No project Alternative	125

6.7.2	Develop the Project Alternative.....	126
6.7.3	Alternative Source of Water	126
6.7.4	Alternative Energy Sources	127
6.7.5	Solid Waste Management Alternatives	128
6.7.6	Liquid Waste Management Alternatives	128
CHAPTER SEVEN		131
IMPACT MITIGATION/ ENHANCEMENT MEASURES		131
7.1	Introduction.....	131
CHAPTER EIGHT		147
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN.....		147
8.1	Introduction.....	147
8.2	Institutional Roles and Responsibilities.....	147
8.2.1	Financing Agency.....	147
8.2.2	Implementing Agency	147
8.2.3	Supervision Consultant.....	147
8.2.4	Contractor	148
8.2.5	Local Government Authorities and Local NGOs / CBOs	148
8.2.6	Local Communities.....	148
8.3	Environmental and Social Cost	148
8.4	Disaster Risk Management Plan.....	165
8.4.1	Disaster Risks at the Proposed Project and Level of Management	165
8.4.2	Disaster Risk Management Plan.....	165
8.4.3	Assumption Made in the Plan.....	166
8.5	Traffic Management Plan	166
8.6	Health and Safety Management Plan.....	167
8.6.1	Responsibilities.....	167
8.6.2	General Safety Facility Operation	167

8.7	Health and Safety Measures	171
CHAPTER NINE.....		175
ENVIRONMENTAL AND SOCIAL MONITORING PLAN		175
9.1	Introduction.....	175
9.2	Environmental and Social Monitoring Plan	175
CHAPTER TEN		200
COST BENEFIT ANALYSIS.....		200
10.1	Introduction.....	200
10.2.	Benefits Related to the Project	200
10.2.1	Benefits to IFM.....	201
10.2.2	Benefit to the Neighbourhood	202
10.2.3	Benefit to the Government.....	202
10.3	Costs Related to the Project.....	203
10.3.1	Costs to the Community	203
10.3.2	Costs to Government	203
10.3.3	Environmental Cost	203
10.4	Project Cost-Benefit Analysis.....	204
CHAPTER ELEVEN.....		205
DECOMMISSIONING AND CLOSURE		205
11.1	Introduction.....	205
11.2	Aim of the Preliminary Plan	205
11.3	Content of the Preliminary.....	206
11.4	Project Decommissioning Methodology and Schedule.....	206
CHAPTER TWELVE.....		209
SUMMARY AND CONCLUSION		209
12.1	Introduction.....	209
12.2.	Summary	209

12.3	Conclusion	209
	REFERENCES	211
	LIST OF APPENDIXES	213

LIST OF TABLES

Table 1; ESIA Team information	ix
Table 2; GPS Coordinates of the proposed project site	10
Table 3: Raw materials, Source and Quantity	20
Table 4: Types, amounts and treatment/disposal of wastes during the construction phase.....	22
Table 5: Lists of key Institutions relevant to the ESIA Process	47
Table 6: Institutional Responsibilities at Project Level	50
Table 7: Applicable World Bank Environmental and Social Standards.....	56
Table 13; Types of vegetation identified in the proposed construction areas.....	63
Table 14:Main Ecosystem types and their services	65
Table 15: Categories of issues and problems.....	74
Table 16:Detailed Stakeholders Concerns	75
Table 17:Summary of the stakeholder’s engagement during implementation	84
Table 18:Summary of Stakeholders Communication Strategy that reflect the characteristics and corresponding specific needs	88
Table 19: Stakeholders’ Engagement Plan	90
Table 20; Levels of grievance redress mechanisms.....	96
Table 21: Grievance Procedure	97
Table 22: Impact scoring matrix with a significant level	105
Table 23:Spatial Rating.....	108
Table 24:Temporal Rating	108
Table 25:Sources of the harmful effects on health and community safety.....	115
Table 26:Project activities and Impacts	116
Table 27:Emission of construction equipment and vehicles.....	119
Table 28; Impacts mitigation / enhancement measures	131
Table 29:Environmental and Social Management Plan.....	149
Table 30: Disaster Risks and management level	165
Table 31:Environmental and Social Monitoring Plan	176

LIST OF FIGURES

Figure 1; proposed project locations..... 11
Figure 2; Site layout plan for proposed hostel facility..... 13

LIST OF APPENDIXES

Appendix 1;Certificate of Occupancy 213
Appendix 2; Site layout plan..... 217

CHAPTER ONE

INTRODUCTION

1.1 Project Background

The Government of the United Republic of Tanzania through the Ministry of Education, Science and Technology (MoEST) has received funds from the World Bank under Higher Education for Economic Transformation (HEET) project. HEET is a 5-year project that aims to promote higher education as a catalytic force in the new Tanzanian economy. The project is designed to revitalize and expand the capacity of 22 institutions to contribute to key areas for innovation, economic development, and labour market relevance. The project invests in the necessary infrastructure for modern and effective teaching and research, while also providing training for Institute's staff to help them reach their full potential. The Institute of Finance Management (IFM) in Mwanza is one among the institutions benefited from the Higher Education for Economic Transformation (HEET) project.

The IFM Mwanza is currently using rented facilities for hostel hence is intending to use the HEET funds to construct a female Student Hostel. The hostel to be built will be a five-storey building capable of accommodating 280 female students only. This development aims to provide modern and affordable hostel to the enrolled students which will also be near the learning facilities. The proximity of the facilities to the campus will reduce travel time and thus, increase the students' performance academically.

However, the construction of buildings and associated activities is expected to have adverse environmental, social and economic impacts. These impacts need to be identified, predicted and evaluated so that positive impacts are enhanced while mitigation measures are developed for negative impacts. IFM has therefore contracted ARMS on Environment Limited to undertake an Environmental and Social Impact Assessment (ESIA) prior to project implementation as prescribed by Tanzanian Environmental Management Act of 2004 and Third Schedule to Environmental Management Act, Cap 191 and First Schedule to Environmental Impact Assessment and Audit (Amendment) Regulations, 2018.

Similarly, the World Bank provides Environmental and Social Framework (ESF), Environmental and Social Safeguarding Policies (ESSP) and relevant Environmental and Social Standards (ESSs), which aim to offset the anticipated social and environmental risks and impacts. The ESS1 for example, sets out the requirements for Borrowers relating to the identification and assessment of environmental and social risks and impacts and development of mitigation measures.

Therefore, Environmental Management Act, Cap 191, the Environmental Impact Assessment and Audit (Amendment) Regulations, 2018, World Bank Environment and Social Framework (ESF), Environmental

and Social Standards as well as the HEET Project's Environmental and Social Management Framework (ESMF) were observed in the study.

1.2 Project Rationale

According to the Environmental and Social Management Framework (ESMF, 2021), Tanzania has made commendable gains in basic education in recent years. For example, enrolment at the primary level has shown an increase of 24.5% from 8,116,488 in 2015 to 10,111,671 pupils in 2018 (10,601,616 in 2019). Similarly, the enrolment trend in secondary education in the year 2013/14 showed a positive increase in the number of students transitioning to post-primary education. Student demand for higher education is expected to surge by 2030, so the tertiary Education system (public and private) must expand and be of better quality to accommodate these additional students (PAD, 2021).

While the country has recorded expansion in basic education, there is widespread acknowledgement among policy makers that the overall outcome of the successful performance in basic education is the demand for subsequent levels of education and especially higher education. In this regard, the main challenge is inability of the system to absorb the expanding number of graduates in basic education inspired and capable of joining the higher education subsector. Of immediate need is the expansion of investment in infrastructure, facilities and quality assurance system in Engineering (agro-processing, mechanized agriculture, railway, hydropower, aeronautic etc.), Medical Science and Technology, Agriculture and Allied Sciences, Energy and Minerals, Forestry and Natural Resource Management. Another concern is on the gender issues.

HEET Project Appraisal Document of 2021, points out a number of challenges in the current higher education system. These include:

- i. Gender inequality in lower levels of education (especially upper secondary) that persists up to the institute level, although the gender parity index in higher education has improved from 56.5 percent in 2013 to 67.4 percent in 2018;
- ii. The institute graduates struggle to find jobs, at least in part due to skills mismatches;
- iii. Demand-side considerations underscore the need for greater numbers of students in disciplines and programs sought after by employers, such as engineering, agribusiness, tourism, and climate change. The overall quality of post-secondary academic programs is low and does not prepare institute graduates adequately for current and future formal jobs or self-employment;
- iv. Shortage of well-trained lecturers and the majority of academic staff use traditional teaching methodologies;

- v. Most of higher education institutions are not currently able to access or use modern technologies to deliver training; and
- vi. The global pandemic has reinforced the need for higher education institutions to develop thoughtful resiliency plans.

A more strategic mix of education, skills and technology will help Tanzania develop its productive sectors and create jobs for the growing number of youths entering the labour market (PAD, 2021).

The Higher Education for Economic Transformation (HEET) Project will finance the development of infrastructure, faculties, and quality assurance systems in higher education to facilitate rapid economic transformation in the country. Through HEET project, the Government of the United Republic of Tanzania seeks to build requisite operational capacity for public universities to empower them to be dependable drivers for economic transformation by building on their respective institutional visions, missions, objectives and core values.

In line with this and since the establishment of IFM and the successive institutional transformations that have culminated to the establishment of IFM, there has been a need to increase the human resource in the fields of engineering and science as recommended in various stakeholders' meetings during review and development of curriculums for the institute's programmes. IFM Mwanza Campus is an institute with the objective of assisting the government in providing affordable female student housing. Such service requires facilities such as the hostel building.

1.3 Objective of HEET Project

1.3.1 Main Objectives of the HEET Project

According to the HEET Project Appraisal Document (PAD) of 2021, the main objective of the project is to strengthen the learning environment and labour market alignment of priority programs at beneficiary higher education institutions and improve the management of the higher education system. The stipulated objective is in line with IFM. Strategic Plan which focuses on expanding infrastructures to match with increase in the student's enrolment. The strategic plan of the IFM Mwanza is to move from rented facilities and construct a five (5) storey female Students Hostel, with capacity to accommodate a total of 280 students.

Prior to the construction of the proposed project, Environmental and Social Impact Assessment is required by World Bank and Tanzanian laws and governing in order to protect the environment and lives of people. The ESIA study shall be conducted in accordance with World Bank Environmental and Social

Framework as well as Tanzania's National Environmental Management Act, Cap 191 and its subsequent Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulation of 2018. In complying with World Bank's ESF (ESMF, ESCF, RPF, SEP, LMP) and Standards as well as the provisions of the Environment Impact Assessment and Audit Regulations, (GN) No.474 of 2018, the project beneficiary IFM has prepared this ESIA report which address: the nature of the project; its location; main processes; materials use, by products and their disposal; environmental impacts; and their mitigation measures. It also analyses the economical and socio-cultural impact of the project to the local community and the nation at large.

1.3.2 Specific Objectives IFM HEET Project

In addressing the overall objective of the project, IFM who is also the beneficiary of the HEET project had the following specific objectives:

- i. To construct a five-storey female Students Hostel to the enrolled students which will be near the learning facilities.
- ii. To increase in the performance of students academically. The travel time will be used for learning and reading.

1.4 Objective of Environmental and Social Impact Assessment (ESIA) Study

The overall objective of carrying out this ESIA was to identify, predict and assess both positive and negative environmental and social impacts associated with the project and propose mitigation measures to minimize the negative impacts and enhance the positive ones. The assessment used data and information on the physical, biological, and socio-economic environment to predict both negative and positive impacts of the project. The Environmental Management (EIA and Audit) (Amendment) Regulations of 2018 and World Bank Environmental and Social Standards (ESS1) provides the general objectives for carrying ESIA, among others a list comprises the following; -

- a. To ensure that environmental considerations are explicitly addressed and incorporated into the development decision making process;
- b. To anticipate and avoid, minimize or offset the adverse significant biophysical, social and relevant effects of developmental proposal;
- c. To protect the productivity and capacity of natural systems and ecological processes which maintain their functions;
- d. To promote development that is sustainable and optimizes resources use and management opportunities;
- e. To establish and assess impacts that are likely to affect the environment before a decision is made to authorize the project;

- f. Propose mitigation and socio-management procedures aimed at managing the proposed mitigation of the identified impacts and that will form part of the overall ESMP and ESMoP for the project operations; and
- g. To enable information exchange, notification and consultations between stakeholders.

1.5 Scope of Work

This study entailed the following: -

- i. To describe the relevant parts of the project including project location, design, components and activities;
- ii. To review policies, legislation, standards and regulations governing the Environment at the International, Regional and Local levels;
- iii. To assemble, evaluate, and present baseline data on the relevant environmental and social characteristics of the project area;
- iv. To make a consultation with Government agencies, local communities and the private sector operating near the project area;
- v. To assess and quantify the environmental impacts resulting from the building development, especially within the zone of influence of the project;
- vi. Describe alternatives that were examined in the course of developing the proposed project and identify other alternatives, which would achieve the same objectives;
- vii. To develop an Environmental Management Plan (EMP) detailing actions and responsibilities for impact mitigation and monitoring.

1.6 Approach and Methodology of the ESIA Study

1.6.1 Approach

Several approaches and study methods are to be used in carrying out this assignment with the view of obtaining quantitative and qualitative data (baseline data) to prepare the report. The main approaches used were;

- i. Follow the Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulation of 2018.)
- ii. Follow broad ecological examinations such as transect walks and detailed analysis of the project area.
- iii. The scoping is being undertaken as initial stakeholder identification through the identification of issues, problems and concerns, a summary of results and ToR for EIA.

1.6.2 Methodology

The ESIA study for the project was carried out following the approved Terms of Reference as provided in Appendix 2. The study was undertaken in May 2023 and included the following methodology:

- i. Meeting and Interview;
- ii. Review of Documents;
- iii. Transect Walk
- iv. Site visits;
- v. Measurement of environmental parameters

Meeting and Interview

Key stakeholders were identified and specific meetings and interviews schedules to gather their views and perceptions on the project. Some of the key Stakeholders consulted in this process include the following; Ilemela Municipal Council- Municipal Environment Management Officer (MEMO), Architect, Forest Officer, Solid waste and sanitation officer, Land officer, OSHA- Occupation Health Inspector, Ward- WEO Kiseke and Mtaa- MEO PPF, TCU, Tanzania Bankers Association (TBA), Tanzania Building Agency, National Council for Technical and Vocational and Training (NACTVET), TARURA, Lake Victoria Basin Water Board Office, Fire and Rescue Force, Ministry of Education Science and Technology (MoEST). Specific results of the interview and meeting is presented in subsequent chapters in this report.

Review of Documents

Reviews involved the acquisition and review of project documents, reports, maps and drawings relevant to the project. Other documents reviewed included different pieces of national legislation, policies, guidelines and regulations as well as international policies and guidelines and procedures.

Site visits

The objectives of site visits were to observe and capture baseline data on the existing biophysical and socio-economic environment of the project area. In addition, the visits provided an opportunity to consult stakeholders and senior government officials on their views regarding the project and its impacts.

Transect Walk

The EIA team undertook a transect walk around the project site. This exercise was carried out to observe physical features existing in the project site to establish relationships with the project building that pose environmental and social issues worth noting for studies and identify the major environmental and socially sensitive receptors. The transect walk was undertaken in sub-wards in the vicinity of the project to consult members living near the project site.

Measurement of environmental parameters

The ESIA team collected and analyzed baseline air quality, noise levels and vibrations at the proposed project site and adjacent areas. Four (4) sampling locations were selected based on relative distance to the proposed project sites and existing multiple sources of air pollution. The ESIA team considered the four corners of the project site and the standby generator to be the main sources of air pollution in the area.

The measurements were done to establish baseline on air quality, noise and vibrations.

(i) Measurement of ambient dust levels (PM2.5 and PM10)

Dust in terms of [articulate matter as PM10 and PM2.5 was measured using Dust Monitor. During the measurements, the dust monitor was fixed at a breathing height of approximately 1.5 meters above the ground. The recorded PM10 and PM2.5 values were then compared with their respective TBS and WHO Guidelines to check the level of compliance.

(ii) Ambient Pollutant Gases Assessment

The ambient pollutant gases were measured using the Portable Multi Gas Analyser capable of measuring Carbon monoxide (CO) [mg/m³], Nitrogen dioxide (NO₂) [mg/m³], Sulphur dioxide (SO₂) [mg/m³], and Hydrogen sulphide (H₂S) [%]. During measurement, the equipment was mounted 1.5m above the ground. Three readings were collected at each sampling point, and the mean value was used as a representative value of that particular point. Results were compared with local and international standards.

(iii) Ambient Noise Levels and vibrations

Noise levels assessment was carried out using a Digital Sound Level Meter at a range of 30dB – 180dB (A). On taking measurements, the meter was set to the “A” weighed measurement scale, which enables the meter to respond in the same manner as the human ear. The “A” scale is applicable for workplace compliance testing, environmental measurement, and workplace design and law enforcement. The meter was held approximately 1.5 m above the floor and at least 0.5 m away from hard reflecting surfaces such as walls. Ground vibration level was measured by using Vibration meter. Both local standards and international guidelines were referenced in the assessment.

1.7 Report Structure

The ESIA study was prepared as per the guidelines provided under the Environmental Management Act No. 20 of 2004 (Cap 191) (Amendment 2018) and its subsequent EIA and Audits Regulations GN 349 of 2005. Thus, EIS is comprised of the following;

- a) Executive Summary
- b) Table of Contents
- c) Acknowledgement
- d) List of Acronyms

- e) Chapters one to thirteen as indicated here
 - 1. Introduction
 - 2. Project description
 - 3. Policy, administrative and legal framework
 - 4. Environmental and Social Baseline/ Existing conditions
 - 5. Stakeholders Analysis
 - 6. Assessment of Impacts
 - 7. Identification of Alternatives
 - 8. Environmental and Social Mitigation Measures
 - 9. Environmental and Social Management Plan
 - 10. Environmental and Social Monitoring Plan
 - 11. Cost Benefit Analysis
 - 12. Decommissioning
 - 13. Summary and Conclusion
- (f) References
- (g) Appendices

CHAPTER TWO

PROJECT DESCRIPTION

2.1 Introduction

In this chapter, an attempt has been made to describe the nature of the project, location and accessibility of the project site, project boundaries, existing situation, project components, project utilities, and project activities to be undertaken.

2.2 Project Location, Accessibility and Size

The proposed project site is located on plot no. 1881, Block B, PPF Mtaa, Kiseke Ward, Ilemela Municipality, Mwanza Region. The proposed project site can be accessed by Airport Road from the city centre and then cross right to Sabasaba Buswelu Road. The proposed project land for the student's hostel covers a total area of 14943 SQM. The total built-up area for the hostel is 3001.35 SQM with plot coverage of 4.5% and a plot ratio of 0.2.

2.3 Land Tenure, Use, Ownership and Management

The parcel of land on which the subject development of the student's hostel is proposed is legally owned by IFM with the certificate of Occupancy No.100455. The land and the buildings erected thereon shall be maintained and the same shall be used for Institute's Hostel purposes only; Use Group 'C' Use Classes (a) as defined in the Urban Planning Act No. 8 of 2007, (Use Classes) Regulation of 2018.

2.4 Status of Cadastral Surveying

Cadastral Surveying is the discipline of land surveying that relates to the laws of land ownership and the definition of property boundaries. It involves interpreting and advising on boundary locations, the status of land ownership and the rights, restrictions and interests in property, as well as the recording of such information for use on plans, maps, etc. It also involves the physical delineation of property boundaries and the determination of dimensions, areas and certain rights associated with properties. The environment team inspected the project sites and identified their existing cadastral with boundary coordinates indicated in Table 2. The plot is registered in 2022 as plot number 1881 from survey plans no 127941 of Block B.

Table 2; GPS Coordinates of the proposed project site

SN	Latitude	Longitude	Description
1	-2.481844°	32.938293°	Corner point 1
2	-2.481482°	32.939024°	Corner point 2
3	-2.482136°	32.939640°	Corner point 3
4	-2.482670°	32.939796°	Corner point 4
5	-2.482673°	32.938949°	Corner point 5

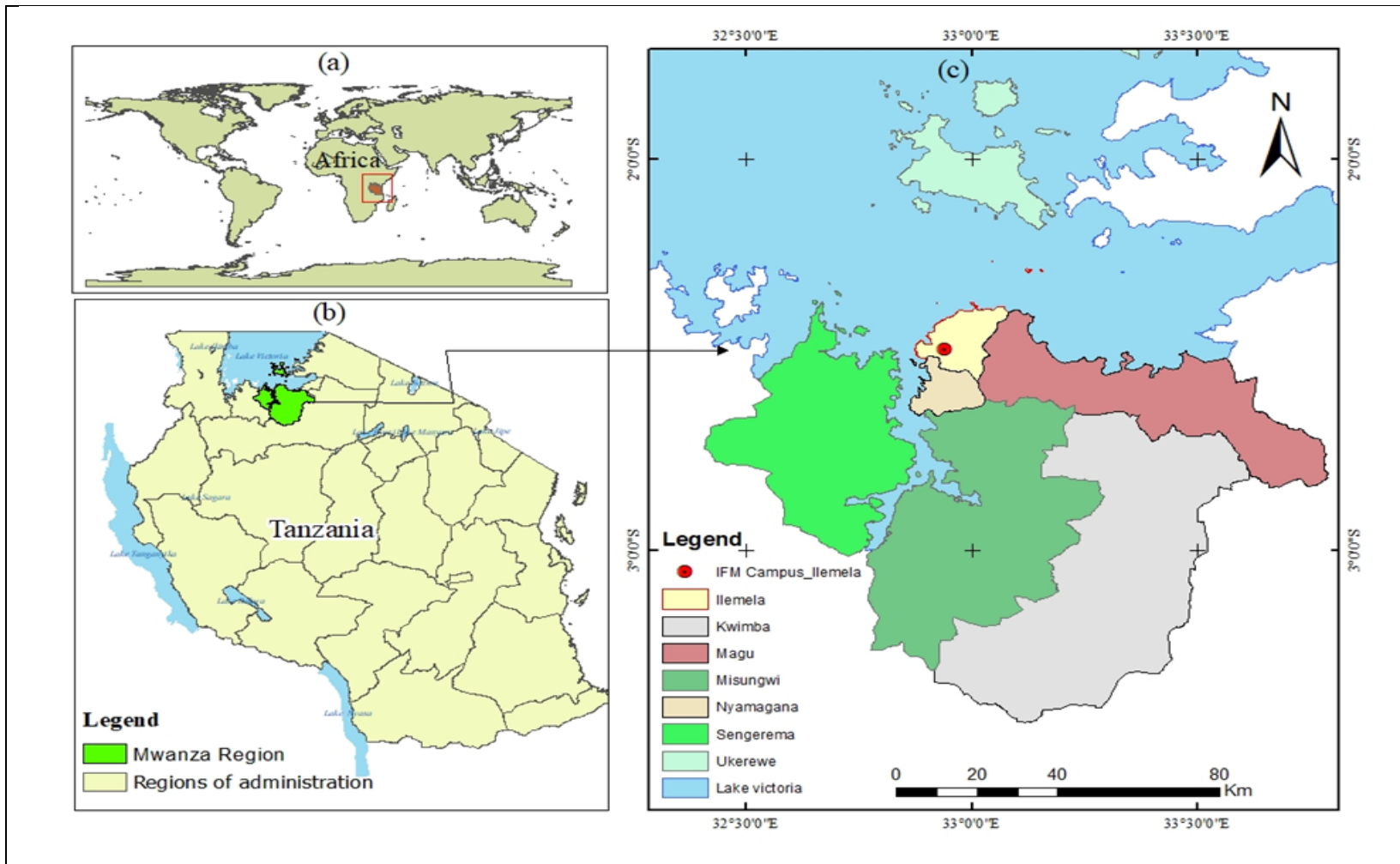


Figure 1; proposed project locations

Source; ESIA Team on December 2023

2.5 Existing Environment and Surrounding

The project is at the design stage. Activities at this stage include obtaining different permits and approvals; conducting perimeter and topographic surveys; conducting feasibility studies, detailed engineering designs and environmental and social impact assessment studies. Therefore, no wastes are generated at this particular time. The proposed project area is covered with trees, shrubs and grasses and is boarded with residential houses on both sides. When the project implementation kicks off some vegetation in the project site are going to be modified. However, after the construction phase of the project is over, some of the open spaces will be re-planted with grasses, trees and flowers.

2.6 Project Components

The proposed project will include the construction of five storey female hostel building. The proposed female Student Hostel will have a capacity of accommodating 280 students in total. The proposed project Area covers 530 sqm on each floor, a total of 2650 sqm. Each floor will comprise of 14 rooms each with 4 students, entrance veranda, and office common area, laundry area with 3 dhobi sinks and toilets and bathrooms.

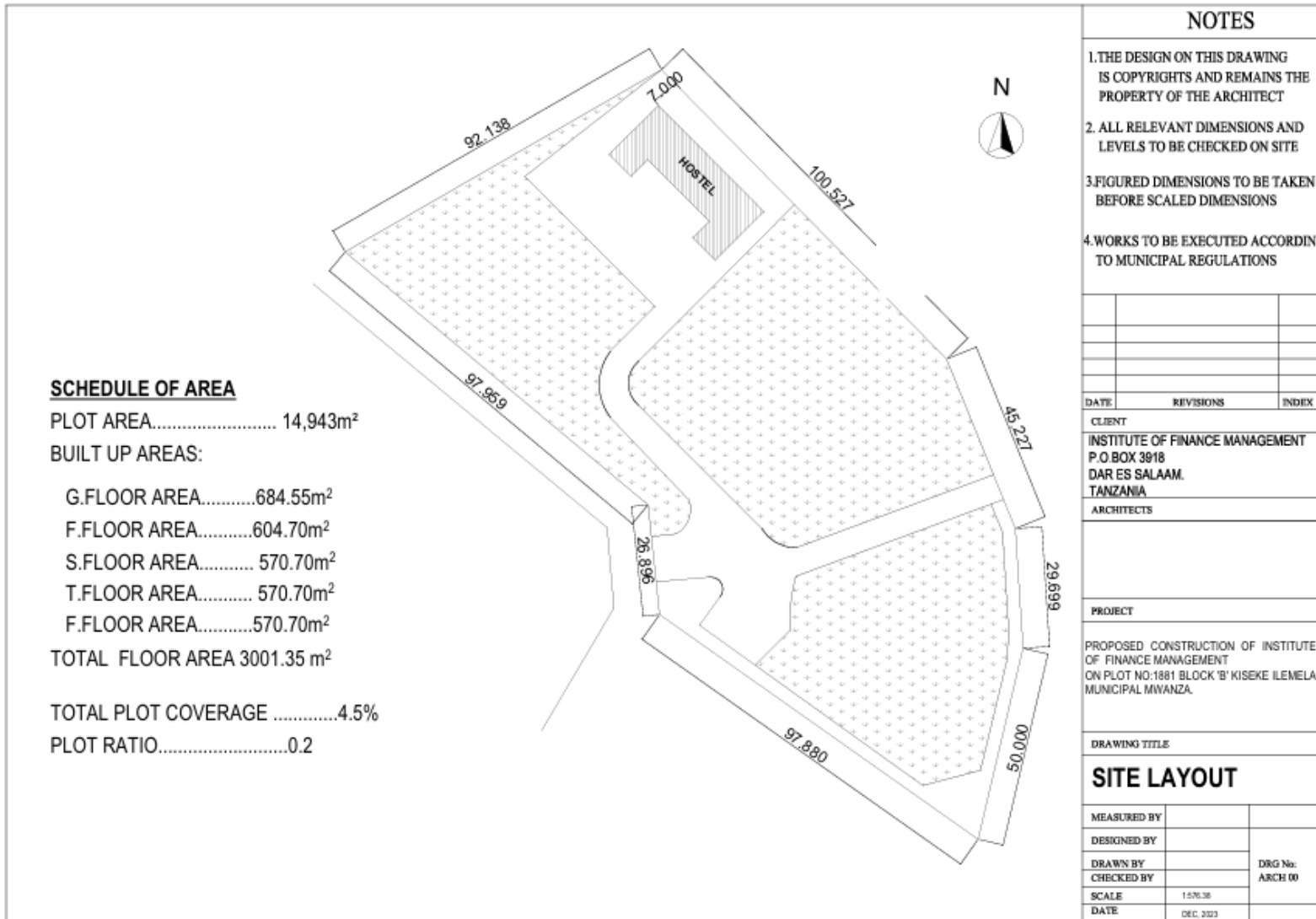


Figure 2; Site layout plan for proposed hostel facility

Source; Proponent, 2023

2.7 Project Design

The buildings will utilize sustainable materials to minimize the ecological footprint. Buildings will be climate smart and friendly to gender including considerations to persons with special needs (e.g., physical, learning impairment, emotional and behavioral). The design will ensure low energy use and integration of solar power supply; low footprint to increase green spaces; and accommodation of rainwater harvesting, storm water and waste management systems. The following are the design criteria that have been followed during the design of the buildings.

- Site orientation
- Sun shading
- Natural ventilation
- Wall materials and construction
- Roof design
- Water and energy efficiency

2.7.1 Climate Change Risks Mitigation and Adaptation in the Project Design

In order to mitigate and adapt the climate change risks (e.g. heat, drought, floods, water scarcity, etc), the design of the hostel shall accommodate the infrastructures to enhance low energy use, rainwater harvesting, storm water management systems, adequate natural ventilation and lighting, and maintaining a significant green space, as described hereunder;

(i) Park and Open Space

A park and public open spaces are planned to maximize the tree canopy cover and shade provided by trees in the area and more provision of ecosystem services. In the open spaces, native plants have been recommended to add the benefit of being useful for storm water treatment and infiltration in the valley.

(ii) Greenery Walkways

The design maximizes pedestrian movement and minimizes motorized transport within the site in order to reduce air emissions (greenhouse gasses (GHGs)) and maximizing Carbon sequestration. Walkways are provided to restrict free movement that causes vegetation destruction in the site, and reducing land cover important for carbon sequestration. Trees are proposed to be planted along the vehicular access road and footpaths to improve landscape and reduce effects of sun radiation during the day.

(iii) Green Areas

Green areas are distributed in every zone/ block to allow cross fresh air into the buildings. Due to the topographical nature and natural vegetation cover, green belt and conservation zone intend to

preserve the ecosystem and control land degradation. Vegetation including artificial forests will reduce soil erosion in sloping plains and all areas prone to soil erosion.

(iv) The building with Low Energy Use

Provisions for adequate openings for cross ventilation, that will ensure easy flow of clean air and reduce energy use (thus reducing emissions); provisions for motion sensors in public areas, to enable auto switch ON/OFF of lights; installation of presence sensors in offices, class rooms, laboratories and workshop areas; proper orientation to reduce indoor discomfort and capture natural air as much as possible and minimization of the sun effects (installation of fins; and provisions for solar lights along the pathways for sun shading); maximizing the potential of utilization of renewable energy options such as solar and wind; Utilization of biogas from the wastewater treatment plant for cooking; buildings to be oriented and constructed to take advantage of natural lighting and cross ventilation as a means of minimizing energy consumption during operation;

2.7.2 Disaster Risk Management

The proposed project shall have provisions for fire prevention and fire fighting facilities. Also, the building shall have provisions for solid waste and liquid waste management for diseases prevention. In addition, two possible access roads shall be used to ensure easy walkability and vehicular access to and from the building to avoid car accidents. The roads shall be safely connected to the parking area huge enough to accommodate cars. The buildings shall have an emergency management plan that assigns the responsibilities for various emergency tasks, specifically to WHO does, WHAT, WHEN AND HOW.

2.7.3 Gender Inclusivity

The buildings shall be developed to be smart and friendly to gender; including considerations of persons with special needs (e.g. physical, learning impairment, emotional and behavioural).These include provisions of lamps, toilets, etc.

2.7.4 Occupational Health and Safety (OHS)

IFM will protect workers throughout the project lifetime as per Environmental and Social Standards, ESS2 (Labor Working Conditions) and ESS4 (Community Health and Safety).

a) OHS During Pre-construction Phase

The structural elements of a project will be designed and constructed by competent professionals, and certified or approved by competent authorities or professionals. Where the project includes new buildings and structures that will be accessed by members of the public, IFM will consider the incremental risks of the public's potential exposure to operational accidents or natural hazards,

including extreme weather events. Where technically and financially feasible, IFM will also apply the concept of universal access to the design and construction of such new buildings and structures.

b) OHS During Construction Phase

IFM with support from the supervision consultant will ensure regular training to permanent and temporary workers (including community workers) on occupational health and safety to workers and information relevant to health risk including, HIV/AIDS, COVID-19, and impacts of dust to workers health will be provided to workers. Occupational health and safety in construction involves the identification, assessment, and control of hazards to minimize the risk of injury and illness to workers. It is essential to ensure that all workers have the necessary training, knowledge, and equipment to work safely.

Before the work starts, competent Environment Health and Safety personnel should:

- i. Identify and devise risks and their management strategy
- ii. Ensure training – site specific and job-specific
- iii. See that the workforce has access to PPEs and know how to use them
- iv. Observe, inspect and report that agreed safe work methods are implemented, site-wide

Upon arrival at the site, employees, contractors and visitors should receive information about the site hazards and steps taken to control those risks. Also, briefing them about the hazards, PPEs, welfare facilities and site rules can ensure that the work in progress is smooth and efficient.

Moreover, it is important to promote a safety culture in the construction industry, where workers are encouraged to report hazards and near-misses, and where safety is given priority over productivity.

Preventive measures

Much of the construction works include scaffolds, and collective fall prevention becomes a necessity. They must be equipped with guardrails, toe boards and brick guards. Personal prevention such as podium steps, can be used to prevent falls while working at height. If the weather seems inappropriate, emergency and rescue procedures should be well-defined in advance to avoid adverse effect on workers. All working platforms must be checked for safe conditions and should be inspected for slip and trip hazards.

Other preventive measures that make safe conditions certain are:

- i. Regular inspections of the site and the machineries to detect hazards in the first place
- ii. Selection of the right PPE (respirators, helmets) to avoid inhalation of asbestos, dust and fibre with provision for appropriate trainings.
- iii. Avoid repetitive motions and use long-handled tools to reduce the need of bending down.
- iv. Make sure that workers are protected from wet concrete (provide PPE and proper washing facilities)

- v. Site traffic (for vehicles or moving equipment) should be planned and managed to avoid fatalities onsite
- vi. Forklifts should be used carefully in material handling
- vii. Pneumatic silencers should be used to reduce noise; electrical hazards (faulty wiring) must be checked and firefighting equipment should be in place

c) OHS During Operation Phase

To comply with safety standards, the project will be operated following all procedures provided by OSHA. Here are different OHS procedures;

i. Risk Assessment

This is a systematic process of evaluating hazards before they can cause harm. Once these risks are clearly understood, appropriate measures are taken to mitigate (reduce the impact or likelihood) or eliminate the risks. For some hazards, elimination might be possible, like replacing a toxic substance with a non-toxic one. For others, mitigation measures might be more appropriate, like using protective gear or improving ventilation.

ii. Emergency Response Planning

Essential components of this plan include marked evacuation routes, designated assembly points outside the danger zone, and a list of emergency contact numbers, including local authorities and medical facilities. Regular drills are pivotal in familiarizing all employees/students with the plan, ensuring that panic doesn't set in in the face of a real emergency and everyone knows their roles and responsibilities.

iii. First Aid

The immediate care given to an injured person before professional medical care is available. A crucial element of first aid preparedness is having a kit with essentials like bandages, antiseptics, and pain relievers, which can address minor injuries or stabilize more severe ones. But merely having a kit is not enough. Workers/students should have basic knowledge of first aid practices.

iv. Housekeeping

A clean and organized workplace is not just aesthetically pleasing but also critical for safety. Regular cleaning ensures that hazards, like spills that can cause slips, are immediately addressed. Organized walkways without obstructions can prevent tripping hazards and are especially vital during emergencies for swift evacuations.

v. Fire Safety

Fires are among the most common and destructive hazards. Preparedness for such an eventuality begins with having fire extinguishers readily available. But it's equally important for employees to know how to use them. Different fires (electrical, chemical, or paper-based) require specific types of extinguishers, and using the wrong one can exacerbate the situation. Modern buildings also use smoke detectors and sprinkler systems as early warning and response systems. These devices need regular

testing to ensure they are always functional. The objective is to detect a fire early, suppress it if possible, and allow safe evacuation.

vi. Training and Education

Specific training sessions should be conducted whenever new students or staffs are introduced. This holistic approach to training ensures that the entire workforce is prepared, aware, and actively participating in maintaining a safe work environment.

d) OHS During Decommissioning Phase

If decommissioning has to happen, it is anticipated that the project will have hazards resulting from noise and vibration that may be caused by the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people. According to the Guidelines specifically the general Environmental Health and Safety guidelines, slips and falls on higher elevation associated with poor housekeeping, such as excessive waste debris, loose decommissioning materials, liquid spills, and uncontrolled use of electrical cords and ropes on the ground, are also among the most frequent cause of lost time accidents at decommissioning site. To control these challenges during decommissioning phase, the contractor shall be required to have a clear understanding on the historical use of the land with regard to the potential presence of hazardous materials or oil prior to initiation of decommissioning activities, preparing plans and procedures to respond to the discovery of contaminated media to minimize or reduce the risk to health, safety, and the environment but equally important to provide adequate and the right PPEs for the anticipated hazards during decommissioning.

2.8 Project Phases / Activities

The proposed project will include several phases: pre-construction phase, construction phase, operation phase and decommissioning phase. Each specific phase has its activities which are well elaborated as follows:

2.8.1 Pre-construction Phase

The implementation of the project's design and construction phase will start with a thorough investigation of the site's biological and physical resources to minimize any unforeseen adverse impacts during the project cycle. This includes;

- i. Topographical survey to establish the boundaries and the ground levels;
- ii. Geotechnical investigations to study the soil profile of the underlying geological formations
- iii. Architectural, Engineering and Services Designs to provide drawings which fit the proposed plan;
- iv. Environmental Impact Assessment has been conducted by following the EIA and Audit (Amendment) regulations of 2018;

- v. Acquisition of various permits/certificates (i.e., Building permits)

2.8.2 Construction Phase

The following are the activities to be executed on the site during the construction phase;

i. Site Preparation

Activities under site preparation will include land clearing, grading and excavation, and construction of auxiliary structures where necessary such as access roads etc., leveling and earth marking.

ii. Construction of Temporary Facilities

This includes the construction of temporary structures such as a reception room, power room, toilets (male and female), changing rooms, engineers conference hall, engineer office, store and canteen.

iii. Construction Workers

A construction labour force of both skilled and non-skilled workers will be employed. About 100 workers are expected to be employed. The contractor will also add other workers depending on the construction activity. Gender will be considered during employment. For the semiskilled and unskilled workers, the Contractor will employ people from the communities which live around the project area as a way of making sure that the project benefits the people community members in the project area.

iv. Construction Equipment

Different machinery will be used to construct the project facilities. These will include:

- a) Bull Dozers for clearing the site, removal of topsoil and vegetation materials, and pushing out stumps;
- b) Graders for grading and leveling land for buildings and access road formation;
- c) Tippers/lorries for transporting construction materials and workers;
- d) Light machinery like pedestrian rollers for access road compaction;
- e) Heavy rollers for access roads compaction;
- f) Front-end loader for loading materials onto tippers and lorries;
- g) equipment like wheel burrows, shovels, picks;
- h) Concrete mixers;
- i) Earthmover;
- j) Compactor;
- k) Wheelbarrow; and
- l) Hammers and bolt and nut fasteners, hand saw, electric and gas welders, electric saws and grinders, load roller, trucks, hand drills and drill bits, wire cutters, concrete mixer trucks, wheel loader, forklift, excavator etc.

v. Sourcing and Transportation of Building Materials

Building materials will be transported to the project site from their extraction, manufacture, or storage sites using transport trucks. Materials such as sand, gravel and quarry stone will be obtained from

approved sources in the surrounding areas. Quarry stone will be obtained from Simba Kokoto Quarry. Sand will be obtained from Kisesa while water for construction activities will be obtained from Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA) and Two (2) water storage tanks with a capacity of 5,000l will be used to store water during construction. The sites where quarry stone, gravel and sand will be collected are approved sites.

Concrete blocks will be used for construction. The use of concrete blocks is more environmentally friendly than the use of burnt bricks, which contribute to deforestation. The concrete blocks are stronger and long-lasting, do not lead to deforestation as burnt bricks do and the procurement of large quantities of cement for making the concrete blocks will contribute to increased growth of the local economy.

Other materials such as cement, paints, timber, roofing materials, windows, doors and other joinery, tilt and roller doors, wallboard and plasterboard, light fittings, fuel and oil, electricity, water, ceramic tiles, polyethene, steel, steel pipes, PVC pipes, adhesives, copper wires, gas (acetylene and oxygen), the cardboard will also be sourced for the project. Construction materials will be sourced depending on the construction stage. The table below shows raw materials, source and quantity.

Table 3: Raw materials, Source and Quantity

Requirements	Type	Source	Quantity (Estimates)	Mode of transport
Raw materials	Aggregates	Mwanza	1,700-2,000	Trucks
	Cement	Dar es salaam	2,500-3,000	Trucks
	Reinforcement bars	Dar es salaam / Mwanza	1500 - 2000	Trucks
	Sand	Mwanza	5,000 -10,000	Trucks
	Water	Mwanza	200 m ³	Trucks
Man power	Skilled	Contractor	25	Communal buses
	Unskilled	Community around	75	Communal buses
Equipment	Excavator	Contractor	1	Trucks
	Bulldozer	Contractor	1	Trucks
	Motor grader	Contractor	1	Trucks
	Plate compactor	Contractor	1	Trucks
	Trucks	Contractor	5	
	Construction Crane	Contractor	2	Trucks

vi. Storage of Materials

Building materials will be stored on site. Bulky materials such as rough stones, ballast, sand and steel will be carefully piled on site. To avoid piling large quantities of materials on site, the proponent will order bulky materials such as sand, gravel and stones in bits. Materials such as cement, paints and glasses among others will be stored in temporary storage structures, which will be constructed within the project site for this purpose.

vii. Structural Steel Works

The building will be reinforced with structural steel for stability. Structural steelworks will involve steel cutting, welding and erection.

viii. Electrical Work

The construction phase will involve the use of electricity for welding, and metal cutting etc., Electricity will be supplied by TANESCO and there will be a standby generator with a capacity of 50KVA to be used when power is cut off. Electrical works such as installation of electrical gadgets, devices and appliances including electrical cables, lighting apparatus, sockets etc. will be carried out by a licensed electrician to the satisfaction of the TANESCO.

ix. Mechanical Works

The mechanical works will be done by qualified technicians under the supervision of the Project Mechanical Engineer and will follow the set standards. The works will include the following:

- Plumbing and drainage
- Service ducts accessible from all floor levels
- Soil vent pipes (SVP) provided on doors and windows
- Storm drains pipes
- Inspection chamber covers and framing
- Underground foul and waste drain pipes

x. Landscaping

To improve the aesthetic value or visual quality of the site once construction ceases, the proponent will carry out landscaping. This will include the establishment of a theme garden and lush grass lawns where applicable and will involve replenishment of the topsoil. It is noteworthy that the proponent will use plant species that are available locally preferably indigenous ones for landscaping.

xi. Construction Wastes

It is anticipated that the project will generate a variety of wastes during its construction phase. The characteristics of the wastes are discussed in this section.

- a) **Soil:** The soil generated during excavation will be stockpiled along the foundation trenches and used for re-establishment of the site at the end of the project.
- b) **Pieces of timber/wood, empty cement bags and pieces of iron steel:** Large pieces of timber/wood generated during the construction phase will be transported back to the

contractor's yard for reuse in future while the small pieces of timber/wood will be disposed-off for use as fuel for cooking and heating. Empty cement bags will be collected and disposed to the dumpsite/ sold to local vendors.

- c) **Empty paint buckets:** These will be reused elsewhere in the project. The damaged ones will be disposed-off to registered plastic waste dealers
- d) **Excess sand and stockpiles:** These can be used for future construction activities e.g., renovations. Upon completion of the project, these will be moved by the contractor to a suitable yard.
- e) **Domestic wastes such as Food remains plastic bottles etc.:** The proponent will provide dust bins for temporary storage of waste within the premises before final disposal to the designated dumping site at Buhongwa dumpsite.

Table 4: Types, amounts and treatment/disposal of wastes during the construction phase

Waste	Types	Amount	Treatment/disposal
Solid Waste (Degradable)	Garbage: Food remains, papers	40kg/day (based on a generation rate of 0.4kg/day/ person and 100 workers)	To be collected in the large skip bucket at the site. Taken to the Authorized dumpsite Shall be sold to recyclers
Solid waste (non-Degradable)	Remains of timber cuts, Glass, packaging materials i.e., empty cement bags	50kg	-These can be used for future construction activities
	Excess sand and stockpiles	1000 m ³ . The estimate is based on the area to be excavated	This soil shall be stockpiled along the foundation trenches. The soils shall be used to reinstate the site at the end of construction activities
Liquid waste	Sewage	3200 litres/day (Based on 100 people, 40l/per capita/day water consumption and 80% becomes wastewater)	To be directed to the Septic Tank-Soak away System that is present at the site

Hazardous waste	Oils and greases	None	Car maintenance will be done at designated garages
	Scrap plastic containers empty paint buckets	50kg	Reused elsewhere in the project for storing water, damaged will be disposed of by registered plastic waste dealers

Source: Consultant's analysis, 2023.

2.8.3 Operational Phase

The duration of this phase will be more than fifty (50) years. The activities that are expected to be executed during operational phase include: Tenancy occupancy, OHS, good housekeeping and project maintenance.

Types, Amounts and Sources of Project Requirements

- Water Supply

The project will be supplied with water from the Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA). Estimated number of occupants for the building is 300, (280 Students and 20 staff).

$300 \times 60\text{l/c/d} \times 70\% = 12,600 \text{ m}^3/\text{day}$, assuming that 70% of the population will use the structure full time.

- Electricity Supply

The project will be supplied with electricity from TANESCO. There will also be a standby generator with a capacity of 220KVA to serve during power cuts. About 1050kwhr are used per day.

- Waste Management

(i) Solid Waste Management

A significant amount of solid waste will be generated during the operation of the proposed project. Waste to be generated includes papers, food remains, plastic bottles and e-waste. To ensure effective management of solid waste generated the management shall emphasise a proper waste management system that will start with a collection of wastes by sorting to the designated and labelled dustbins. The collected wastes will be taken by a contracted waste collector operating in the area to the final disposal site at Buhongwa dumpsite.

At the hostel, it is estimated **120kg of solid waste per day** will be generated per day. NB: Assuming that one (1) person produces 0.4kg/day of solid waste and there will be about 280 students and about 20 supporting staff at the hostel.

(ii) Liquid waste Management

Waste water will be generated from bathrooms and toilets. Waste water generated will be managed through a combination of Septic Tanks soak away pits and Anaerobic waste water treatment plant. Firstly, the hostel will use the septic soak away pit until the anaerobic waste water treatment plant is

in place. It will also be important to ensure that sewage pipes are not blocked or damaged since such blockages or damages have to be fixed expeditiously. It is estimated that **9,600 litres of liquid waste** will be generated per day. NB: Assuming that one (1) person consumes 40 litres of water per day and discharges 80% of it and there will be about 280 students and about 20 supporting staff at the hostel. The table below shows the type of waste generated, amount and disposal method.

Table 5: Waste generated, amount and disposal method

Waste	Types	Amount	Treatment/ Disposal
Solid Waste (Degradable)	Food remains, paper, boxes	120Kg/day (based on a generation rate of 0.4kg/day/ person for 300 people)	-All wastes shall be collected to the designated dustbins and designated dustbins. The collected wastes will be taken by a contracted waste collector operating in the area to the disposal site.
Solid Waste (Non-Degradable)	Scrap metals, Tins, glasses, cement bags	50Kg/day	Sold to recyclers
Liquid wastes	Sewage	9,600 L/day (Based on 300 people, 40 l/capita/day water consumption and 80% becomes wastewater)	Directed to the septic waste to be constructed onsite.
Hazardous wastes	Sanitary pads		Reusable menstrual hygiene products and Incineration were considered to be favorable methods for the management of sanitary pads.
	Cleaning detergents		These will be stored separately in a specific chamber before being transported to the designated dumpsite

Source: Consultant analysis 2023.

- Storm Water Management

At the proposed site and marginal zone areas, there is a natural storm water drainage system. However, water management structures (open channels, culverts) will be constructed to maintain storm water following the natural topography of the area.

- **Cleaning**

The management will be responsible for regular cleaning of the surrounding area. Student tenants will be responsible for washing and cleaning their premises/rooms. Cleaning operations will involve the use of substantial amounts of water, disinfectants and detergents.

- **General Repairs and Maintenance**

The project facilities will be repaired and maintained regularly during the operational phase of the project. Such activities will include the repair of building walls and floors, repairs and maintenance of electrical gadgets and equipment, repairs of refrigeration equipment, repairs of leaking water pipes, painting, maintenance of flower gardens and grass lawns, and replacement of worn-out materials among others.

2.8.4 Decommissioning Phase

(i) Demolition Works

Upon decommissioning, the project components including building structures, pavements, drainage systems, and perimeter fence will generate a lot of solid waste. Some of the waste will be reused for other construction works or if not reusable, disposed of appropriately by a licensed waste disposal company.

(ii) Dismantling of Equipment and Fixtures

All equipment's including electrical installations, and finishing fixtures partitions, among others will be dismantled and removed from the site in decommissioning of the project. Priority will be given to reuse this equipment in other projects. This will be achieved through resale of the equipment to other building owners or contractors.

(iii) Site Restoration

Once all the waste resulting from demolition and dismantling works is removed from the site, the site will be restored through replenishment of the topsoil and re-vegetation using indigenous plant species. The decommissioning plan will be implemented based on protection healthy and safety, compliance with statutes, contractual and regulatory requirements, environmental and ecology, and human capital management.

2.9 Project Boundaries

Identification of boundaries within the EIA process was undertaken as an important component of the scoping exercise. This exercise focused and encircled the project within an area where impacts both positive and negative would be felt on the environment, to the economy and to the local community.

Three types of boundaries were considered in the scoping and the EIA study that included: institutional; temporal; and spatial boundaries.

2.9.1 Institutional Boundaries

Institutional boundaries refer to those institutions and sectoral boundaries in which the project lies or interacts. These can be determined from political boundaries, Acts, regulations and institutional mandates and administrative structures. This proposed development touches the interest of a number of people and administrative units in relation to several policies, laws and plans, and the overall land and settlements acts. The institutional framework includes; Minister responsible for environment in the Vice President's office, Division of Environment NEMC, District Council and Ward and sub-ward (with committees for environment). These institutions will be consulted in this EIA process, as they are key stakeholders with vested interest in the development at IFM for environment and economic prosperity of the local people and Tanzanians in general.

2.9.2 Temporal Boundaries

Temporal boundaries refer to the lifespan and reversibility of impacts. The impact of the proposed project will have implications that stretch very far into the future until when decommissioning is undertaken. Also, consideration needs to be given to what happens when the project ends, where there is need for site restoration and decommissioning of the project. Therefore, some of the impacts that may occur during construction e.g. noise caused by construction activities will disappear as soon as construction is finished while during operation period there will be regular checking of the noise levels to make sure that they are within standards prescribed by the laws. Increased wastes generation and increased pressure on social services and utilities will be controlled. Health and safety risks due to fire hazards may arise as problems during operation phase unless measures are taken to ensure relevant Health and Safety Acts and Regulations are strictly adhered to.

2.9.3 Spatial Boundaries

Spatial boundaries are crucial to decide on whether impacts are likely to occur at Local, Regional, National or International Level. The proposed project will have wide ranging implications that could be felt Locally, Regionally, Nationally and probably outside the country thus, causing impacts as far as those areas. In this study, spatial impacts will be determined from the Core project area (the area within the proposed project development), the Area of Impact and the Area of Influence.

a) Core Project Area

In determining the spatial dimension of the project, it is important to consider impact in a contour layout, starting with the Core Project Area (CPA). This is the area where the project is located and, which will bear most impacts than the rest. In this case PPF Mtaa, Kiseke Ward is the Core Project Area (CPA) and is in the social, direct, indirect and cumulative impact areas due to their close proximity to project area.

b) Area of Impact (AoI)

This is the area which surrounds the Core Project Area (CPA). This area plays an important role and bears some positive or negative impacts. The area of Impact in the case of the proposed project would include Buswelu, Nyasaka, Bugongwa, Kirumba, Nyakato, Nyamhongolo, Kawekamo, Buzuruga and Nyabusaru. These areas will be linked with the proposed development through road transport, supply of services and goods as well as labor force.

c) Area of Influence (AoI)

The area beyond the area of impact is further away from the proposed project. It consists of the centers of decision making that can influence the development of the project. This center of decision making includes National Environment Management Council and the Ministry responsible for Environment. The proposed project may attract contractors and consultants beyond Tanzania.

CHAPTER THREE

POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

3.1 Introduction

In Tanzania there are several policies, legal and administrative structures that govern execution of environmental and social impact assessment (ESIAs). The administrative aspects require that all the new projects that are likely to affect the environment should have an environmental impact assessment done and submitted to the National Environment Management Council (NEMC). The objective being to evaluate the environmental and social impacts and risks of the proposed development on the environment and to provide appropriate mitigation measures.

In constructing the proposed project in the area, various environmental and social issues may arise at any phase of the project development i.e. from site selection, mobilization to decommissioning phases. These issues need to be addressed so that the envisaged operations do not impair the integrity of the environment and ensure that they are in line with policies and legal regime operating in Tanzania as well as World Bank safeguards policies. This chapter lists down relevant policies and legislations pertaining to the planning and implementation of the proposed project.

3.2 Relevant Policies

Relevant policies and legislation about groundwater and surface water pollution, pollution of soil, land and land use, air pollution health and safety were examined, among others to ensure that the proposed establishment of the proposed project meets and abides by the existing regulations. These are described below.

3.2.1 National Environment Policy NEP (2021)

The National Environmental Policy 2021 comes into force following the review of 1997. There are emerging environmental challenges that were not explicitly addressed in the previous policy. These include climate change; invasive species; electrical and electronic equipment wastes (e-wastes); Genetically Modified Organisms (GMOs); management of oil and gas; and sound management of chemicals. Some of these issues aggravated further the deteriorating state of the environment in the country because of inadequate interventions to address these challenges. Under these circumstances, climate change contributed further to land degradation due to frequent and prolonged droughts. The proliferation of Invasive Species also had impacts on the accelerated loss of wildlife habitat and biodiversity. The increase in the use of electrical and electronic equipment has led to an increased accumulation of e-waste with toxic substances further polluting the land and ground water all of which pose challenges to human health and the environment. These emerging environmental

challenges require concerted attention that includes the provision of specific and clear policy guidance to effectively address them.

Compliance: The policy requires EIA to be mandatory for all development projects likely to have significant environmental impacts. The establishment of the proposed project will take on board all relevant measures to ensure that the projects is implemented in an economically sustainable manner whilst safeguarding environmental and social issues for the benefit of the present and future generations.

3.2.2 The Energy Policy, 2015

The policy among others focuses on the utilization of energy resources in a suitable and environmentally friendly manner. The policy recognizes that; energy is a prerequisite for the proper function of all subsectors of the economy. It is an essential service whose availability, quantity and quality determine the success or failures of development endeavours. The policy stresses the use of renewable and alternative energy sources such as wind, solar, hydro, liquefied petroleum gas (LPG) and natural gas. The policy promotes energy efficiency and conservation as a means towards cleaner production and pollution control measures.

Compliance; The proposed project will use electricity from TANESCO also energy efficiency bulbs and appliances which are energy savers. Also, there will be a backup diesel generator of 200KVA.

3.2.3 National Land Policy (2019)

The National Land Policy states that, “the overall aim of a National Land Policy is to promote and ensure a secure land tenure system, to encourage the optimal use of land resources, and to facilitate broad - based social and economic development without upsetting or endangering the ecological balance of the environment”. The project will be required to ensure protection of existing cultural heritage and conservation of ecological and socially sensitive areas. The proposed building project is located within the area planned for Institute’s Hostel purposes and as such it is compatible with the land use in the project area as required by the National Land Policy.

Compliance: In the context of this project, IFM in collaboration with the financier (World Bank and the Ministry of Education, Science and Technology will ensure proper disposal of wastes, especially within the project sites. Implementation of the project will ensure that provisions of the Policy are adhered to.

3.2.4 The National Construction Policy (2003)

This policy promotes among other things, application of cost effective and innovative technologies and practices to support socio-economic development including utilities and ensure application of practices, technologies and products which are not harmful to both the environment and human health.

Compliance: This study is undertaken to ensure that the proponent uses technologies and products not harmful to both the environmental and human health by providing feasible alternatives and appropriate mitigation measures.

3.2.5 The National Water Policy (2002)

NAWAPO's objective is to develop a comprehensive framework for sustainable management of the national water resources. In this case, the policy recognizes the need to protect water sources against pollution and environmental degradation. The Water Policy reflects the shift in approach towards comprehensiveness and economics. In addition, the Policy aims at ensuring that beneficiaries participate fully in all states of water resource developments and recognizes the fundamental but intricate linkages between water and socio-economic development, including environmental requirements. The Policy expounds on the importance of water for domestic use, agriculture, livestock keeping, mining energy, fisheries, environment, human health, wildlife and tourism, forestry, navigation and trans boundary requirements. The policy states that "a holistic water (river) basin approach, integrating multi-sector and multi-objective planning and management, should be taken to ensure sustainability and protection of the resource."

Compliance; The proposed project could result in pollution for ground and surface water in the area. In this case, project designs will ensure water sources (including streams which ultimately flow into the water sources) are suitably protected to minimize impacts during the construction and operational phases of the project.

3.2.6 National Gender Policy (2002)

The main objective of this policy is to provide guidelines to ensure gender-sensitive plans, programs and strategies in all sectors and institutions. The policy emphasizes gender equality with its aim at establishing strategies for poverty eradication by ensuring that both women and men get access to existing resources for their development. It values the role played by women in bringing about development in society. The construction sector is also committed to ensuring gender mainstreaming at all levels, through the provision of equal opportunities to both men and women in road works and related activities.

Compliance: The policy requires the project management to ensure that gender issues are given emphasis. It also requires that women and men are given equal employment opportunities in the project, whenever possible. Therefore, this project will ensure that women will be adequately involved at all levels of the project planning to implementation.

3.2.7 National Health Policy (2008)

One of the main objectives of this policy is to ensure that health services are available and accessible to all people wherever they are in the country, whether in urban and rural areas. The policy encourages safe basic hygienic practices in workplaces, promote sound use of water, promotes

construction of latrines and their use, encourage maintenance of clean environment; working environment which are conducive to satisfactory work performance.

Compliance; The proponent shall observe this policy during the project implementation.

3.2.8 The Urban Planning Regulations (Space Standards), 2018

The Urban Planning Space Standards guides and guides space utilization to achieve harmony and sustainable development. In the construction of buildings, this document informed the design of the buildings and the selection of construction sites. Space standards provide suitable heights for buildings according to their use, guide space to be reserved between one building and another (setbacks), plot coverage and plot ratio. It also guides the provision of space to accommodate both motorized and non-motorized transport systems such as roads, parking and footpaths/pedestrian walkways.

Compliance; The project has taken into consideration the requirements of urban planning space standards in the inception and design of buildings to be constructed, and will continue taking proper utilization of the project area during its implementation.

3.2.9 The Tanzania Education Training Policy (2014)

Tanzania aims at improving the quality of education. This is through the collaboration with all education stakeholders to modernize the curricula at all levels and make sure that it meets requirements.

Compliance; This project is in-line with this policy as will modernize education training and put in place the state-of-the-art equipment for training. In addition, the fees/costs for the institute hostel will be affordable to all people.

3.2.10 National Policy on HIV/AIDS (2003)

The policy provides a framework, direction and general principles in the national response to interventions in the prevention, care and support of the infected and affected by the HIV/AIDS epidemics and mitigation of its impacts. Tanzania is facing major threats to the survival of its people and the development chances of the nation from a concentrated and generalized HIV /AIDS epidemic. The National Multi-Sectoral Strategic Framework (NMSF) on HIV / AIDS will translate the National Policy of HIV/AIDS by providing strategic guidance to the planning of programmes, projects and interventions by various stakeholders in the fight against HIV/AIDS. To make sure that NMSF meets its objectives, the following goals were set

GOAL 1: Reduce the spread of HIV in the country.

GOAL 2: Reduce HIV transmission to infants.

GOAL 3: Political and government leaders consistently give high visibility to HIV /AIDS in their proceedings and public appearances.

GOAL 4: Political leaders, public and private programmes, projects and interventions address stigma and discrimination and take the Human Rights of persons living with HIV /AIDS into account.

GOAL 5: HIV /AIDS concerns are fully integrated and prioritized in the National Poverty Reduction Strategy and Tanzania Assistance Strategy.

GOAL 6: Reduce the prevalence of STIs in the population.

GOAL 7: Increase the knowledge of HIV transmission in the population.

GOAL 8: Increase the number of Persons living with HIV /AIDS who have access to a continuum of Care and Support from Home / Community to Hospital levels.

GOAL 9: Reduce the adverse effects of HIV /AIDS on orphans

Compliance: The establishment of the project will increase business opportunities for the community; hence the Management and the District Council are required to make sure that there is no discrimination and stigma and also take the Human rights of a person living with HIV/AIDS into account.

3.2.11 The National Occupational Health and Safety Policy (2010)

The National health and safety promote safe and health working conditions and safeguarding physical, mental and social wellbeing of workers and employees across all sectors and work places.

Compliance: The proponent will comply with this policy by ensuring that occupation and health procedures are being adhered in every stage of project cycle legally.

3.3 Relevant Legal Framework

This section addresses the legal (Laws, Regulations and Guidelines) and regulatory framework, which are relevant to the proposed project. The legal and regulatory framework provides the various legal aspects that must be adhered to as the project is designed, implemented and later when it is decommissioned.

3.3.1 The Environmental Management Act, Cap 191

The Environmental Management Act, Cap 191 seeks to provide for a legal and institutional framework for sustainable management of the environment in the implementation of the National Environmental Policy. The Environmental Management Act provides for the continued existence of the National Environmental Management Council (NEMC). Under this Act, NEMC is mandated to undertake enforcement, compliance, review and monitoring of environmental impact assessment and has a role of facilitating public participation in environmental decision-making, exercising general supervision and coordinating over all matters relating to the environment. The Act also requires the Council to determine whether the proposed project should be subjected to an EIA, approves consultants to undertake the EIA study, invites public comments and also has the statutory authority to review EIS and recommend to the Minister for approval and issuance of EIA certificate. The Act

imposes an obligation on the proponent to conduct an EIA before the commencement of the project to determine whether the project may/or is likely to have, or will have a significant impact on the environment. Article 82 makes EIA mandatory for all projects that fall under the EIA mandatory list (third Schedule).

Compliance: The proponent has complied with relevant provisions of the Act by carrying out this EIA Study.

3.3.2 The Land Act Cap 113 R. E. 2019

The Land Act seeks to control land use and clarify issues about ownership of land and land-based resources, transactions on land and land administration. This Act identifies three categories of land – village, public and general, and distinguishes protected or restricted land (e.g. National parks, forest reserves, etc.) and ensures that tenure and rights of legitimate land users are considered and respected. Land sensitivity and the environmental impact of the proposed establishment shall be considered to ensure that the land is not polluted and to allow for natural and rapid restoration of cleared vegetation or disturbed land.

Compliance: The design and implementation of this EIA process is consistent with this legislation. The proposed project will be carried out within the limits of the site earmarked for the activity.

3.3.3 The Roads Act No. 13 of 2007

The Roads Act governs the deviation, widening, construction or realignment of a road or access road, as well as describing the compensation details for people that need to be resettled. Section 35 describes owner to be given power concerning the decision of creating an access road in line with laid conditions. Section 39 and regulation 42 detail the prohibition of certain classes of traffic, and sets out maximum weight, speed and dimensions of vehicles. Section 40 provides the chance for appeal to the proponent if not given consent for the proposed access road construction. Furthermore, the Act provides for road safety through creating road signs and bumps to avoid any occurrence of accidents, and the authority that has jurisdiction for carrying out road undertakings.

Compliance: The proposed project shall utilize the current public roads and therefore obliged to observe the requirement of this Act.

3.3.4 Standard Act of 2009

This Act aims at the promotion of specifications of commodities and services, re-establish the Tanzania Bureau of Standards (TBS), the designated national standards authority established under the TBS Act 1975 and repealed by this act. TBS is responsible for developing all kinds of national standards, including environmental standards.

The Standards Act has established National Environmental Standards Compendium (NESC) which is a collection of various standards prepared at different times and recognized by EMA 2004. NESC is divided into three parts. Part 1 comprises of standards that require compulsory compliance.

Compulsory standards are categorized as generic or specific. Specific standards cover those industries with peculiar effects to the environment while other industries without a specific standard for Tolerance Limits of Emissions discharge including water quality, discharge of effluent into water, air quality, control of noise and vibration pollution, sub-sonic vibrations, soil quality, control of noxious smells, light pollution, and electromagnetic waves and microwaves.

Part 2 of NESCA contains those standards that may be implemented on voluntary basis. These include guideline standards, codes of practice, and other such standards that may not necessarily be directly enforced, but whose results are implied in some legal requirements. One of such standards include the Environmental Management Systems (EMS) standards, like TZS 701/ISO 14001 whose compliance specifications include the relevant legal requirements. Part 2 thus has important requirements for companies and developers who wish to demonstrate their commitment to sustainable development by way of self-regulation mechanism. On the other hand, some companies or developers may be compelled to follow these standards because of requirements from mother companies and for other various reasons like certification requirements by environment friendly Banks or tenders. Part 2 also includes standards used in evaluating environmental performance.

Part 3 has the requisite test methods that should be followed when testing for compliance. The test methods included are referred to in at least one of the specification standards appearing under Part 1. Although it is not stated in the Act, in the absence of national standards, project proponents are encouraged to use international standards such as those of the World Health Organisation (WHO), World Bank, British Standards (BS), European Union (EU), American Public Health Association (APHA), United States Environmental Protection Agency (US EPA) etc. Standards set by the relevant sectors, which also make use of the international standards, are also applicable. Such standards include the environmental standards set under the Mining (Environmental Management and Control) Regulations, 1999. Relevant national environmental standards include:

- TZS 860: 2005 Municipal and Industrial Wastewaters – General Tolerance Limits for Municipal and Industrial Wastewaters: This standard provides permissible limits of important environmental parameters such as BOD, COD, pH, color, temperature range, total suspended solids and turbidity. It also gives permissible limits of a range of inorganic and organic components. All effluents discharged from the project activities during all phases shall comply with these specifications. Special attention will be paid to treatment of effluents from laboratories as some are hazardous in nature.
- TZS 845:2005 Air Quality – Specification: This standard gives permissible emission limits of sulphur oxides, carbon monoxide, hydrocarbons (as total organic carbon), dust, nitrogen oxides and lead. The emissions from earth moving equipment, power generation plant and other will include SO₂, CO, dust and NO_x; as such the project will have to observe these limits.

- TZS 983:2007 Air Quality - Vehicular Exhaust Emissions Limits: This standard is mainly derived from EU Directives 96/69/EC, 91/542/EEC and 97/24/EC. This Tanzania Standard gives permissible limits of some common substances found in exhaust emissions of motor vehicles, namely carbon monoxides, suspended particulate matter (PM), oxides of nitrogen, and hydrocarbons. The standard covers all types of vehicles namely, passenger cars, light commercial vehicles, heavy-duty vehicles, and two and four strokes motorcycles and scooters. In order to carry out quarrying activities and processing operations, the project will operate a fleet of heavy duty and light vehicles in addition to hiring other vehicular equipment. As such, the project will need to observe the provisions of these standards.
- TZS 932:2006: Acoustics - General Tolerance Limits for Environmental Noise: This standard focuses on urban environmental noise, and does not cover occupation environment. In the absence of other standards, it may be used to give indication of permissible noise levels in factory/workshop environment.
- TZS 789:2003 - Drinking (potable) water – Specification: This standard prescribes the quality requirements for drinking water other than packaged drinking water. It does not cover the requirements for natural mineral water. It prescribes the quality requirements for drinking water distributed in the food industry, domestic and catering purposes. It applies to bacteriological, biological, virological, physical, chemical and radiological quality criteria. It is intended also to community piped water supplies i.e. those water systems serving cities, municipalities and townships, community standpipes and wells and drinking water distributed by tankers. For protecting the health of consumers, portable water during all the project phases shall comply with these standards.
- TZS 931:2006 Protection against ionising radiation - Limits for occupational exposure: This standard aims at protecting workers, whose practices expose them to ionising radiation, namely; gamma- and X-rays, alpha, beta and other particles that can induce ionisation. The Standard does not apply to non-ionising radiation such as microwave, ultraviolet, visible light and infrared radiation. It applies to all workplaces in which employees are occupationally exposed or in which there is a potential for occupational exposure to ionising radiation, unless exempted by the Regulatory Authority.

Compliance: The proposed IFM project will be adhered to this Act requirement, during the Project implementation.

3.3.5 The Urban Planning Act (2007)

The law provides for the orderly and sustainable development of land in urban areas, to preserve and improve amenities; to provide for the grant of consent to develop land and powers of control over the use of land and to provide for other related matters.

Compliance: The project will seek planning consent and building permits from relevant authorities.

3.3.6 The Architects and Quantity Surveyors Act (1997)

Similarly require architects and quantity surveyors (QS) are to be registered with the Board before practising.

Compliance: Only registered architects and quantity surveyors shall be involved in the implementation of the proposed project.

3.3.7 Fire and Rescue Act (2007)

The Act obliges the owners and managers of the structures to set aside places with free means of escape and install fire alarm and detection systems, or other escape and rescue modalities in the event of fire.

Compliance: The design and construction of all buildings shall take into strict consideration the requirements specified in this Act.

3.3.8 Water Resource Management Act 2009

The water resources management Act of 2009 principally seeks to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways that consider ten (10) fundamental principles including:

- i. Protecting biological diversity, especially the aquatic ecosystems;
- ii. Promoting the efficient, sustainable and beneficial use of water in the public interest;
- iii. Providing systems for managing the growing demand for water use through integrated planning and management of surface and groundwater resources, in ways that incorporate economic, environmental and social dimensions in the planning process;
- iv. Proving implementation of international obligations stipulated under international legal instruments to which Tanzania is party and
- v. Facilitating social economic development.

Apart from incorporating sustainable water use principles and having pollution prevention conditionality in the water permits, the Act goes a step further by putting in place a regime for water resource protection, abstraction (surface and groundwater) and use. Under Section 33(1) of the Act, for the whole or part of a water source, a determination of the ecological reserve shall ensure that adequate allowance is made for each aspect of a reserve.

Compliance: This EIA study will ensure that all relevant impacts from the proposed establishment are properly mitigated to avoid any social and environmental problems. The discharge of wastewater will be restricted as stated in the law, that wastewater should be treated before being discharged into the environment. Construction of the project will ensure sustainable and efficient use of water.

3.3.9 The Public Health Act 2009

Part IV of the Act provides for the need to maintain cleanness and hygiene and prevent nuisance during construction works. It calls for effective management of solid, liquid, gaseous, and hazardous wastes. Section 76 of the Act specifically requires every authority to undertake periodic studies to determine the type of solid and liquid wastes generated from markets, institutions and industries; and determine appropriate methods for sorting and storage of the wastes.

Compliance: This project will involve a level of waste generation, the proponent and contractor will ensure that all solid wastes generated during the renovation, operation and decommissioning of the project on-site are to be collected separately and disposed of to the designated district dumpsite.

3.3.10 Workers Compensation Act Cap 263 R. E 2015

An Act to provide for compensation to employees for disablement or death caused by or resulting from injuries or diseases sustained or contracted in the course of employment; to establish the Fund for administration and regulation of workers' compensation and to provide for related matters.

Compliance: This Act is very relevant to this project as workers will be exposed to various hazards during the construction of the project. The developer and the contractor will ensure the safety and health of workers at all stages of the project by providing adequate PPEs to all the staff depending on their line of duty and also by providing compensation due to the occurrence of accidents or injuries or death.

3.3.11 HIV and AIDS (Prevention and Control) Act No. 28 of 2008

The Act provides for the prevention, treatment, care, support and control of HIV and AIDS, for the promotion of public health concerning HIV and AIDS. HIV and AIDS education in the workplace, the Act requires that every employer in consultation with the ministry shall establish and coordinate a workplace programme on HIV and AIDS for employees under his control and such a program shall include the provision of gender response HIV and AIDS education, distribution of condoms and support to people living with HIV and AIDS.

Compliance: The project Proponent will highly observe the requirement of this Act during project implementation by promoting awareness and education concerning the prevention and control of the spread of the disease.

3.3.12 The Engineers Registration Act and its Amendments 1997 and 2007

There is hereby an established Board known as the Engineers Registration Board which has the responsibility of regulating the activities and conduct of engineers and engineering consulting firms under the functions and powers conferred upon it by this Act. Qualification for registration of Engineers as stated in part iii section 10(1) of this act that “subject to the provisions of this Act, a person shall be entitled, on making an application to the Board in the prescribed manner and on

payment to the Board of the prescribed fee, to be registered under this Act and to have his name entered in the register as a registered engineer”.

Compliance: This project has engineering work which involves various designs for the construction of the project. Example; design for Building, Installation facilities such electricity, sewerage systems, and waste management (wastewater treatment plant, solid waste management system). All required engineering parts will be done by a registered engineer to ensure compliance with the Act.

3.3.13 The Contractors Registration Act, 1997

There is hereby established Board known as the Contractors Registration Board. The purpose of the contractor’s registration Board is stated under this act in part ii section 3(2a-d). As explained in this act a contractor is “any person who himself as a developer or investor, undertakes the construction, erection, installation or alteration of any structure, for public use or otherwise, situate below, on or above the ground or other work connected therewith or the execution of any alteration or otherwise to any structure, for public use or otherwise, or other work connected therewith, where such person undertaking to do any such work.”

Part iii section 7(1) of this act states the registration of the contractors. “The Registrar shall keep and maintain registers of contractors of different types, categories and classes, in which the name of every person entitled to have his name in them as a registered contractor, shall be entered as soon as it is practicable after being accepted by the Board for registration”.

Compliance: The contractors to be involved will be registered members of the board as already explained in part iii section 7(1) of the Contractor’s registration Act of 1997.

3.3.14 Employment and Labour Relations Act (No.6), 2004

The Act prohibits forced labour and discrimination of any kind in the workplace. It provides employment standards such as contracts with employees, hours of work, remuneration, leave, unfair termination of employment and other incidents of termination. The Act makes provision for core labour rights, to establish basic employment standards, a framework for collective bargaining, prevention and settlement of disputes and other related matters. The Act strictly prohibits child labour and discrimination.

Compliance: IFM will ensure that it operates within the requirements of this legislation and will comply with stipulated conditions of the Employment and Labour Relations Act, 2004.

3.3.15 The Child Act, 2010

The Act sets the minimum age for admission of a child to employment at 14 (Sec. 77.2). The Act prohibits the engagement of children below 18 in hazardous work, posing a danger to health, safety or morals and in “night work” taking place between 8 pm and 6 am (Sec. 82.2). The Law of the Child (Child Employment) Regulations (G.N. No. 196, 2012), which is used to implement the Law of the Child Act (Act No. 21, 2009), contains list of all hazardous activities in which a child shall not be

allowed to work, even on a voluntary basis. Section 82 of the Act also protects children from sexual exploitation. A child shall be protected from sexual exploitation and use in prostitution, inducement or coercion to engage in sexual activity and exposure to obscene materials.

Compliance: The project proponent shall ensure adherence of the Act.

3.3.16 The Local Government Law (Miscellaneous Amendment) Act, 2006

The Act established the local governments and urban authorities with mandates to spearhead developments in districts and urban centres (for cities and municipalities) respectively. By this law, the authorities have mandates to formulate bylaws to enhance environmental management within their district/urban authorities.

Compliance: Thus, the proponent shall observe the bylaws set by Ilemela Municipal Council

3.3.17 The Persons with Disability Act, 2010

The basic principles of this Act are to respect for human dignity, individual's freedom to make their own choices and independence of persons with disabilities, non-discrimination, full and effective participation and inclusion of persons with disabilities in all aspects of society, equality of opportunity, accessibility, equality between men and women with disabilities and recognition of their rights and needs, and provide a basic standard of living and social protection.

Compliance: The project proponent shall fulfill this legal requirement in all project phases, from design, construction and operation.

3.3.18 Occupational Health and Safety Act No. 5 of 2003

Part IV of this Act makes provisions for safety, health and welfare for persons at work in factories and other places of work; to provide for the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with activities for persons at work. The proposed modern market will entail the employment of both skilled and unskilled labourers, and as such will comply with this Act. Part 111 of the Act calls for the registration of the market or workplaces to obtain compliance certificates as well as submission of drawings in blueprints which depict vital sections to the OSHA's Chief Inspector for approval. Occupational health and safety are key aspects of the operations. First aid equipment, sanitary facilities and effective Personal Protective gear will be provided to employees and maintained by the contractor during the period of construction.

Compliance: The proponent shall observe the provision of this Act during all stages of the project development and operation.

3.4 Relevant National Plans and Strategies

To guide national development more effectively and systematically, Tanzania has prepared many strategies aiming at operationalizing the various policies in key sectors. Some of the strategies that have a bearing on the proposed project are:

3.4.1 The Tanzania Development Vision (2025)

Composite Development Goal for the Tanzania Development Vision 2025 (URT, 2000) foresees the alleviation of poverty through improved socio-economic opportunities, good governance, transparency and improved public sector performance. These objectives not only deal with economic issues but also include social challenges such as education, health, the environment and increasing involvement of the people in working for their development. The thrust of these objectives is to attain sustainable development of the people. Vision 2025 seeks to mobilize the people, the private sector and public resources towards achieving shared goals and achieving a sustainable semi-industrialized middle market economy by the year 2025.

Compliance: Therefore, the implementation of this project is yet another milestone to enable Tanzania realizes its Development Vision objectives notably eradicating poverty. IFM project will contribute to the attainment of the 2025 Vision through provision of adequate skilled labor force for implementing various development plans.

3.4.2 The Third National Five-Year Development Plan (FYDP III; 2021/22 – 2025/26)

The Plan is a continuation of Government's efforts in achieving the goals set in the National Development Vision 2025 enduring exertion to further improve the standard of living for all Tanzanians. The main objective of the Third Plan is to contribute to realization of the National Development Vision 2025 goals. These goals include Tanzania becoming a middle income country status and continue with transformation of becoming an industrial country with a high human development or a high standard of living. Upon reaching its vision, which have the following attributes: peace, stability and unity; good governance; an educated and learning society; and a strong economy that can withstand competition and benefit many people. The FYDP III, therefore, will seek to enable the country to more effectively use her geographical opportunities and resources for production and economic growth, while, ensuring that the outcomes benefit all citizens in line with the Vision's goals of a high quality of life. FYDP III will continue to implement the projects and programmes aimed at opening up economic opportunities, build an industrial economy, strengthen competitiveness in domestic, regional and global markets as well as strengthen human development including the education sector.

Compliance: The proposed project supports this development plan by increasing academic, research and innovation opportunities in various geographical areas of Tanzania including Mwanza region where the proposed project will be constructed.

3.4.3 The National Plan of Action to End Violence against Women and Children (NPA-VAWC) 2017/18-2021/22

From a situation analysis of this plan, violence is a daily reality for large numbers of women and children in Tanzania. The NPA-VAWC recognizes that reducing violence has positive implications for inclusive growth and has ambitious targets that could positively impact the agency of women and girls. The plan aims to dramatically lower rates of teenage pregnancy, reduce the practice of female genital mutilation/cutting (FGM/C), and drastically reduce child marriage throughout the country. The plan incorporates strategies to help local authorities and police, service providers, and communities better provide prevention and response services that have the greatest potential for reducing violence against women and children.

Compliance: To put the plan in action, IFM should with relevant government officials, social welfare officers, religious leaders, and police officers during implementation of the proposed project to end existing Violence against Women and Children.

3.5 Relevant Regulations and Guidelines

3.5.1 Environmental Impact Assessment and Audit Regulations (2005 amended in 2018)

The EIA and Audit Regulations were made under the Environmental Management Act No. 20 of 2004. The regulations form the basis upon which EIAs and Environmental Audits for various types of development projects with significant environmental impacts are undertaken. The regulations outline the EIA process from project registration to the issuance of the EIA certificate.

Compliance: The proposed project fall under type B1 projects in which EIA is mandatory. The proponent registers the project to National Environment Management Council and conducts this EIA study.

3.5.2 The Environmental Management (Fee and charges) (Amendment) Regulations, 2021)

The principal Regulations prescribe fees concerning environmental impact assessment; environmental compliance monitoring and audit; registration of environmental experts; environmental quality standards; ozone-depleting substances, management of wastes, biosafety, noise and vibrations, and other activities related to the environment.

Compliance: The proponent complies with the requirements of this Act by engaging a registered Firm that complies with the regulation. The firm has paid all the fees required and has all the permits to undertake Environmental Impact Assessment and Environmental Audit study.

3.5.3 The Environmental (Solid Waste Management) Regulations. 2009 as amended in 2016

The regulation has been made under sections 114, 115, 116,117, 118, 119, 120,121, 122 and 230 of the Environmental Management Act, 2004. These regulations apply to all matters about solid waste management. They aimed among other things at setting the standard for a permit to operate solid waste disposal sites, permit to transport solid waste, permit to dispose of solid waste and license to own or operate solid waste disposal sites.

Compliance; The solid wastes generated during all the project phases shall be separated at the point of generation and stored in the dustbins and collected by special vehicles to the designated dump site.

3.5.4 The Environmental Management (Standards for the Control of Noise and Vibrations Pollution) Regulations, 2015

These Regulations shall apply to the control of noise and environmental vibrations in Mainland Tanzania. The objectives of these Regulations shall be to (a) ensure the maintenance of a healthy environment for all the people in Mainland Tanzania, the tranquility of their surroundings and their psychological well-being by regulating noise and vibration levels; (b) prescribe the maximum permissible noise and vibration levels from a facility or activity to which a person may be exposed; (c) provide for the control of noise and vibration and mitigating measures for the reduction of noise and vibration; (d) set baseline parameters on noise and vibration permissible levels based on several practical considerations and acceptable limits; (e) enforce minimum noise and vibration limits prescribed by the National Environmental Standards Committee; (f) help developers such as industrialists to keep abreast with environmentally friendly technologies; and (g) ensure the protection of human health and the environment from various sources of noise and vibration pollution.

Compliance: The proponent shall abide by these regulations and shall not 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; also, the workers shall be provided by noise protection gears during all phases of the project.

3.5.5 The Environment (Registration of Environment Experts) Regulations 2005

These Regulations make provisions concerning Environmental Experts and establish the Environmental Expert Committee. The Regulations provide for the certification and registration of Environmental Experts and contain rules relative to the practice and discipline of Environmental Experts and define functions, powers and internal organization of the Committee.

Compliance; The proponent complies with the requirements of this Act as it has engaged a registered and experienced Firm to conduct the Environmental Impact Assessment for the proposed project.

3.5.6 Environmental Management (Air Quality Standards) Regulation, 2007

The object of these regulations is to set baseline parameters on air quality and emissions and enforce minimum air quality standards. They are also meant to help developers including industrialists to keep abreast with environmentally friendly technologies and ensure that public health as well as the environment is protected from various air pollution emissions sources. These Regulations stipulate the role and powers of the National Environmental Standards Committee. According to the regulations, the approval of a permit for the emission of air pollutants shall be guided by ambient, receptor, emission and specification standards approved by the Minister. Offences and penalties for contraveners are also provided for in the regulations. Emission and emission limits of sulphur and nitrogen dioxides, carbon monoxide, lead, ozone, black smoke and suspended particulate matter together with their test methods are specified. Tolerance limits and test methods for dust, sulphur dioxide and nitrogen oxides from cement factories into the air as well as from motor vehicles are also given. These pollutants are not expected to be generated from the project activities in significant amounts since special measures will be implemented to avoid emissions during operation.

Compliance: The proponent and contractor will ensure that mitigation measures on dust and gaseous emission are enforced on the implementation of the project throughout the life cycle.

3.5.7 The Fire and Rescue Force (Fire Precautions in Building) Regulations, 2015

3.-(1) The provisions of this Part shall apply in determining the design, construction, protection, location, arrangement and maintenance of exit facilities to provide safe means of escape for occupants from all buildings hereafter erected, altered or changed in occupancy.

4.-(1) The areas which are designated as means of escape shall include- (a) exit staircase; (b) firefighting lobby; (c) smoke stop lobby; (d) exit passageway; and (e) escape corridors. (2) The areas which are designated as means of escape shall not be turned into other usages. The determination of exit requirements for a building shall be based upon the type of use or occupancy of the building, the occupant load, the floor area, the travel distance to an exit and the capacity of exits as provided in Table 6 of the First Schedule. Every storey of a building shall be provided with exit facilities for its occupant load. The capacity of exits, exit staircases, exit passageways, corridors, exit doors and other exit facilities shall be measured in units of width of half a metre. Subject to regulation 9, where a room or space is required to be provided with two exits, each exit shall be of sufficient width to accommodate not less than half the total occupant load.

Compliance: The proponent abides by this regulation by including Smoke detectors and heat detectors in the Architectural drawings. Also, there will be a Fire control panel, Fire repeater control panel, Manual call point, exit luminaire (ceiling mount, double site), Exit luminaire (wall mount) Fire cable, Fire escape routes and Fire extinguisher. Also, the proponent will employ skilled and knowledgeable personnel to use the equipment.

3.5.8 Environmental Management (Soil Quality Standards) Regulation, 2007

These regulations set limits for soil contaminants in agriculture and habitat, enforce minimum soil quality standards, prescribe measures designated to maintain, restore and enhance the sustainable productivity of the soil and prescribe minimum soil quality standards for sustaining ecological integrity and productivity of the soil. According to the regulations, among others, the National Environmental Standards Committee has the powers to set pollutant limits and specify procedures for the determination of the quality of soil for protection of the soil from degradation as a result of anthropogenic activities such as agricultural and mining activities and waste disposal. Owners and operators of a main polluting activity are required to voluntarily register with NEMC and obtain a soil pollutants discharge permit. Obligations of polluters are also given. According to the regulations, the NEMC plays a crucial role in soil quality compliance and enforcement. Recording and reporting requirements, Offences and penalties for non-compliance as well as how appeals against aggrieved decisions should be handled are stipulated. Contaminant limits for selected soil pollutants mainly halogenated hydrocarbons (for example, trichloroethylene, dichloromethane, tetrachloroethylene, carbon tetrachloride, etc.), fuel hydrocarbons (benzene, ethylbenzene, total xylenes, toluene, etc.), organic and inorganic pesticides (lindane, Atrazine, DDT, sulphur, Hexachlorobenzene, Aldrin, etc.) and their respective test methods are specified.

The Regulations also cover contaminant limits for some heavy metals (e.g. arsenic, cadmium, nickel, copper, zinc, etc.) together with their test methods. Most of the pollutants covered in these regulations will not be produced from the project activities in appreciable concentrations. However, there is a potential for soil pollution from petroleum hydrocarbons due to the use of fossil fuels for running y machinery, plants and vehicles during the construction phase. Fossil fuels will be applied rationally to minimize residues and consequently soil and water pollution.

Compliance: The proponent will manage well all solid and liquid wastes to be generated and oil spills at each project phase to void the soil contamination.

3.5.9 Environmental Management (Water Quality Standard) Regulation, 2007

Among others, the object of the regulations is to enforce minimum water quality standards prescribed by the National Environmental Standards Committee, enable the National Environmental Standards Committee to determine water usage for purposes of establishing environmental quality standards and values for each usage and ensure all discharges of pollutants take into considerations the ability of the receiving water to accommodate contaminants for protection of human health and conservation of marine and aquatic environments. The Regulations elucidate the role of the National Environmental Standards Committee of Tanzania Bureau of Standards in setting minimum quality standards for water, sewerage, etc. They also give prohibitions and prescribed minimum water quality standards. The applicant of the water right is obliged to indicate the likely impact on the environment and

comply with prescribed effluent or receiving water standards, which are not below the standards specified in these regulations if the water right or permit is granted. The regulations give NEMC the power to designate main water polluting activities for which a prior grant of the permit must be obtained from the Council. It can be observed from the regulations that, the NEMC plays a crucial role in water quality compliance and enforcement. Recording and reporting requirements, Offences and penalties for non-compliance as well as how appeals against aggrieved decisions should be handled are stipulated.

The Regulations specify permissible limits for selected physical, inorganic, organic and microbiological components of Municipal and industrial effluents and the respective test methods of the pollutants. Specific tolerances and methods of testing for effluents of chrome and vegetable tanning industries and fertilizer industries are given. Regarding drinking water, the regulations specify microbiological requirements and classification of non-chlorinated piped water sources, chemical and physical limits as well as radioactive materials limits for quality of drinking water supplies. Also specified in the regulations are minimum distances from sources of water contamination and sampling frequency for water quality monitoring of various sources.

Compliance: The developer will minimize the impacts of the project activities on groundwater and nearby surface water sources.

3.5.10 Urban Planning (Zoning of Land Uses) Regulations, 2018

For the purposes of these Regulations, uses of land that are permitted and those that may be permitted under special circumstances by the planning authority in different zones of the local planning area shall be as follows: (i) Residential (ii) Commercial (Retail and Wholesale) (iii) Industrial (Light, Medium, Heavy & Service) (iv) Institutional (v) Public Utilities (vi) Beach, Open Spaces and Recreational (vii) Transportation, Communication and Microwave towers (viii) Agricultural (ix) Water bodies (x) Conservation (xi) Economic Development.

Uses permitted: For all central and local government offices, agencies and centre offices, educational, college campus including hostel facilities for students, cultural and religious institutions such as church, temple and other places of worship, educational, medical/engineering/ technical and research institutions, (on the sites having minimum 2 hectares with a minimum of 12 metre wide approach road), including libraries, reading rooms and clubs, medical and health institutions, recreational areas, and public toilets. Furthermore, it includes parking and cafeteria, cultural institutions like community halls, opera houses, clubs, predominantly noncommercial in nature, utilities and services, water supply installations including disposal works, electric power plants, high tension and low-tension transmission lines, sub stations, gas installation and gas works, firefighting stations, Banks, and quarters for essential staff and all uses permitted under parks and playgrounds.

Compliance: The proposed project site is within the Institutional Zone. Therefore, IFM complied with the regulation.

3.5.11 The Urban Planning (Application for Planning Consent) Regulations, 2018

The act restricts development within the Planning Area without a planning consent granted by the Planning Authority under section 32 of the Act and the Regulation. Also, Changes of use of public open spaces is not allowed. However, any person who desires to obtain planning consent subject to subsequent approval of the particulars of the proposed development shall give sufficient details on the appropriate form and plans to enable a decision to be made.

Compliance: The act is not relevant to the project since the site is used as planned and there was no need for land use change.

3.5.12 Environmental Management (Control of Ozone Depleting Substances and Hydrofluorocarbons) Regulations, 2022

The Regulations shall apply to- (a) all persons who handle or use controlled chemical substances or products that contain, are made with or are dependent on, or designed to contain controlled chemical substances that have: (i) the potential to destroy ozone molecules in the stratosphere and includes the products listed in the First Schedule; or (ii) high Global Warming Potential listed in the Second Schedule; (b) any manufacturer, importer, exporter or distributor of ozone depleting substances or HFCs with high global warming potential;(c) any manufacturer, exporter and importer of technology which uses ozone depleting or HFCs with high global warming potential; (d) any company and individual who services refrigerators, air conditioners including mobile and other technologies using ozone depleting substances or HFCs with high global warming potential; and (e) any company or individual who uses or services fire extinguishers using ozone depleting substances or HFCs with high global warming potential.

Compliance: The project shall abide to this Regulation by:

- i. Buy air-conditioning and refrigeration equipment that do not use HCFCs as refrigerant;
- ii. Buy aerosol products that do not use HCFCs or CFCs as propellants;
- iii. Conduct regular inspection and maintenance of air-conditioning and refrigeration appliances to prevent and minimize refrigerant leakage;
- iv. For existing air-conditioning and refrigeration appliances that operate on HCFCs or CFCs, the refrigerant should be recovered or recycled whenever an overhaul of equipment is to be carried out. Replacing or retrofitting such equipment to operate on non-HCFCs refrigerant should also be considered; and
- v. When motor vehicle air-conditioners need servicing, make sure that the refrigerants are properly recovered and recycled instead of being vented to the atmosphere.

3.6 Institutional Framework for the Management of Environment

3.6.1 Overall Management Responsibility

The institutional arrangement for environmental management in Tanzania is well spelt out in the EMA (2004). There are seven (7) institutions mentioned by the Act, of which the Minister Responsible for the Environment is the overall in-charge for administration of all matters relating to the environment.

Part III, Section 13(1) of EMA (2004) states that the Minister responsible for environment shall be in overall in-charge of all matters relating to the environment and shall in that respect be responsible for articulation of policy guidelines necessary for the promotion, protection and sustainable management of environment in Tanzania.

The legal institutions for environmental management in the country include;

- i. National Environmental Advisory Committee;
- ii. Minister responsible for Environment;
- iii. Director of Environment;
- iv. National Environmental Management Council (NEMC);
- v. Sector Ministries;
- vi. Local Government Authorities (City, Municipal, District, Township, Ward, Village, sub-village “Mtaa and Hamlet”)

The Environment management Act cap 191 and Environmental Impact Assessment and Audit regulations of 2005 both emphasizes on administrative framework and institutional arrangement for management of environmental issues in Tanzania and thus outlines responsibilities of different relevant institutions in projects. In this regard, construction of the proposed project will involve both the central government and government agencies (such as the Vice President’s Office particularly the Directorate of Environment, National Environment Management Council, Occupation Safety and Health Authority (OSHA) and Local Government Authorities (Mwanza Region, Ilemela Municipal Council, and lastly Kiseke ward). Table 5 below outlines institutions and their respective responsibilities regarding this study. Table 6 outlines the key players in proposed project implementation.

Table 5: Lists of key Institutions relevant to the ESIA Process

Level	Institution	Roles
National Level	The Vice President’s Office (Division of Environment, NEMC)	<ul style="list-style-type: none"> - Co-ordinate Environmental Management Policy, Environmental Management Act and EIA guidelines - Approval of ToR, Review of EIA - Issuing an Environmental Certificate - Environmental Monitoring and Compliance

		<p>Auditing</p> <ul style="list-style-type: none"> - Advise the Government on all environmental matters
	Ministry of Land, Housing and Human Settlements Development	<ul style="list-style-type: none"> - Land use planning, - Issuing of Right of Occupancy, - Valuation and compensation.
	The Ministry of Education, Science and Technology	<ul style="list-style-type: none"> - Promoting and developing policies related to science and technology - Supporting research and development - Fostering innovation and entrepreneurship
	Tanzania commission for Universities (TCU)	<ul style="list-style-type: none"> - Mandate to recognise, approve, register and accredit Universities - Conduct regular and impromptu periodic evaluations of universities, their systems and programmes - Advise the government and the general public on matters related to higher education in Tanzania as well as international issues about higher education, including advice on program and policy formulation and other best practices. - Providing support to universities in terms of coordinating the admission of students, offering training and other sensitisation interventions in key areas like quality assurance, Institution leadership and management, fundraising and resources mobilisation, entrepreneurial skills and gender mainstreaming.
Regional level	Mwanza Regional Commissioner's Office	<ul style="list-style-type: none"> - Oversee and advise on the implementation of national policies at the regional level - Oversee enforcement of laws & regulations - Advice on the implementation of development projects and activities at the regional level
District level	Ilemela District Commissioner's	<ul style="list-style-type: none"> - Oversee and advise on the implementation of national policies at the District level

	Office	<ul style="list-style-type: none"> - Oversee enforcement of laws & regulations - Advice on the implementation of development projects and activities at the District level
	Ilemela Municipal Council (Municipal Executive Director Office)	<ul style="list-style-type: none"> - Overseeing all development activities in the Municipality
Ward level	Ward Development Committees (Ward Executive Officer, Ward Extension officers), Ward Environment Committee	<ul style="list-style-type: none"> - Oversee general development plans for the Ward - Provide information on local situations and Extension services - Technical support & advice - Project Monitoring
Community level	Councils (Chairman/MEO, Environment Committee): and other leaders	<ul style="list-style-type: none"> - View on the socio-economic and cultural value of the sites and project operations. - Rendering assistance and advice on the implementation of the project - Project Monitoring (watchdog for the environment, ensuring wellbeing of residents and participating in project activities)
Proponent	IFM	<ul style="list-style-type: none"> - Project design and planning and facilities construction - EIA study - Project implementation (operation) - Project monitoring and internal auditing - Project decommissioning

3.7 IFM Project Implementation Unit

The IFM responsibility is to ensure that the implementation process of the ESMP and Mitigation measures are in line with the relevant national policies and legislations and World Bank Environmental and Social Standard 1. The IFM has the Project implementation Unit (PIU) with 18 people responsible for supervision and monitoring the implementation of the project construction activities.

The management of all project activities during operation is under the PIU, in collaboration with other departments and units depending on the nature of the activity. In general, the PIU falls under the management of the IFM executing day-to-day activities in the project. The PIU is guided by management meetings that are chaired by the Vice Chancellor.

The management meetings provide support, guidance and oversight of the progress of the PIU. Further, among the PIU staffs, 3 are working as Environmental and Social Safeguard Specialists (i.e Environmental Specialist, Health and safety specialist and Social/ Gender Specialist) who will monitor the environmental and social activities of the project during all project phases. The Environment specialist holds a Masters in Geography and Environment, Social Specialist holds PhD in Sociology and Gender specialist holds a PhD in Sociology and is a focal gender person of the IFM. Further the IFM shall commission the consulting engineer to supervisor the contractor during construction among others on Environmental and Social Issues. The roles and responsibility on environmental and social issues is covered on table 6 below; -

Table 6: Institutional Responsibilities at Project Level

Institution	Roles and Responsibilities
World Bank	<ul style="list-style-type: none"> • Project financing • Ensures that the project is carried IFM to the highest environmental standards strictly in accordance with the ESMF and ESIA project report and the mitigation measures set IFM therein. • Also requires that environmental and social impacts are managed in accordance with the World Bank ESF and its ESS. • Provide second line of monitoring compliance and commitments made in the ESMPs through supervision.
PS-MoEST	<ul style="list-style-type: none"> • E&S monitoring and surveillance of all project components investments that will be undertaken by project. • The ministry will report results of this monitoring to the World Bank.
NPIU Environmental and Social Team	<ul style="list-style-type: none"> • Coordinate different activities to ensure that, the project meets the country legal and World Bank requirements with regard to Environment and Social Framework
Implementing institutions (IFM - PIU) Environmental and Social Team	<ul style="list-style-type: none"> • Maintaining the PIU chaired by the Deputy Vice Chancellor and assisted by qualified and experienced staffs in adequate numbers and under terms of reference as outlined in the Project Operational Manual (POM). • The PIU is vested with the responsibility of the day-to-day implementation of the project activities including financial

	<p>management, procurement, environmental and social risk management, governance and anti-corruption, monitoring and evaluation, and reporting;</p> <ul style="list-style-type: none"> • Coordinate specialist/consultants for any support missions or attend different meetings and provide any guidance in the bid to ascertain that the different challenges identified for each sub-project/activity are duly covered from risk. • Support the procurement officer at IFM in making sure that the bidding documents clearly cover the health, safety and environmental component with appropriate provisions of the same for the contractors to bid. • Coordinate preparation of ESIA and environmental and social management plans (ESMPs) done by consultant and site-specific ESMPs (SSESMP). • Ensure that contractors have an Environmental Health and Safety Officers (EHS), who are familiar with the compliance requirements, including WB EHS guidelines
<p>Contractors (Environmental and Social Team)</p>	<ul style="list-style-type: none"> • Compliance with relevant environmental and social legislative requirements (project-specific, district- and national level), including allocating adequate budget for implementation of these requirements; • Work within the scope of contractual requirements and other tender conditions; • Prepare C- ESMPs based on the ESMP in the bidding documents and contracts; • Train workers about EHS (including relevant WBG EHS Guidelines) and the site specific environmental and social measures to be followed; • The EHS officer of the contractor will participate in the joint site inspections with the UPIU and Environmental Supervision Engineer/consultant; • Immediate notification of the NPIU and supervision engineer of any significant social or environmental health and safety incident linked with the project, and indication about the measures taken or that are planned to be taken to address the incident as well as propose any measures to prevent its recurrence. • Carry IFM any corrective actions instructed by the Supervision Engineer/consultant;

	<ul style="list-style-type: none"> • In case of non-compliances/discrepancies, carry IFM investigation and submit proposals on mitigation measures, and implement remedial measures to reduce environmental impact; • Propose and carry IFM corrective actions in order to minimize the environmental impacts; • Send weekly reports of non-compliance to the Supervision Engineer/consultant; • Send monthly progress reports to the Supervision Engineer/consultant
<p>Consultant (Environmental and Social Team)</p>	<ul style="list-style-type: none"> • Work with the NPIU//UPIU to understand the requirements of the environmental and social assessment; • Conduct initial site visits with the UPIU to understand the sub-project setting and site-specific requirements; • Prepare the ESIA and ESMPs based on the procedures described in the ESMF including carrying IFM an alignment walk, alternatives analysis and baselines studies, identifying the E&S risks and impacts, developing mitigation measures and monitoring plans incorporating EHS requirements; • The E&S shall be responsible for monitoring the compliance of the contractor in implementing the ESMP and that the E&S shall be responsible for regular reporting of the progress. • Cost all the mitigation and management measures proposed in the ESMPs and SSEMPs • Propose a capacity building plan for the implementation of the sub-projects (where necessary) • Carry IFM public consultations; • Assist the UPIU in preparing documentation to obtain certification from NEMC for the ESIA and ESMPs.

3.8 Key players in implementing the ESMP

To ensure the sound development and effective implementation of the ESMP, it will be necessary to identify and define the responsibilities and authority of the various persons and organizations that will be involved in the project. The following entities will be involved in the implementation of this ESMP:

- i) Funding Institutions
- ii) The Institute of Finance Management
- iii) National Environmental Management Council (NEMC)

iv) Contractor;

3.8.1 Funding Institutions

The funding organization will have an overarching responsibility to ensure that the project is carried IFM to the highest environmental standards strictly in accordance with the ESMF and ESIA project report and the mitigation measures set IFM therein. Additionally, the funding Institution requires that environmental and social impacts are managed in accordance with the World Bank ESF and its ESS.

3.8.2 The Institute of Finance Management - UPIU

The proponent responsibility is to ensure that the implementation process of the ESMP and Mitigation measures are line with the relevant national policies and legislations and World Bank Environmental and Social Standard 1. The IFM has the Project implementation unit (PIU) responsible for supervision and monitoring the implementation of the project construction activities. The management of all project activities during operation is under the PIU, in collaboration with other departments and units depending on the nature of the activity. In general, the PIU falls under the management of the IFM executing day-to-day activities in the project. The PIU is guided by management meetings that are chaired by the Deputy Vice Chancellor. The management meetings provide support, guidance and oversight of the progress of the PIU. Further, the PIU will designate among PIU staffs an Environmental and Social Safeguard Specialist(s) who will monitor the implementation during the construction and operation phases of the project. The PIU team has enough staffs with capacity to undertake the required monitoring and supervision roles to include Environmental and Social specialists.

3.8.3 NEMC

NEMC is charged with the overall role of providing oversight regarding monitoring for all project activities that have potential impacts on the environment. NEMC will undertake periodic monitoring of the project during the mobilization; construction and operational phases to ensure that the mitigation measures set IFM in chapter 8 of ESMP are fully implemented. In respect to this project, NEMC has a specific role of monitoring and ensuring that the mitigation measures are fully implemented as per certificate conditions (to be issued). It will ensure that its Zonal staff are fully trained and equipped to perform its monitoring role. It will review the results of any monitoring and Audit reports generated as part of the project implementation phase and will issue directives based on the monitoring activities to ensure full compliance with the mitigation measures required and address any issues that may arise.

3.8.4 The Contractor

The project will be implemented by a Contractor and will be responsible to IFM for constructing the proposed project in accordance with the Technical Specifications required. The Contractor shall

implement the project entirely in accordance with the ESIA mitigation measures detailed the ESMP. It is recommended that before commencement of actual construction, the Contractor should submit a work site plan that complies with the national environmental guidelines and an ESMP for the different phases of the work. The environmental plan shall specify the location of sources of materials and disposal area of construction debris as well as other related matters. The plan shall take into consideration the mitigation measures proposed in this ESIA project report. The Contractor shall nominate a Project Environmental Site Officer (ESO) and Project Social Site Officer (SSO) who will be the Contractor's focal point for all environmental and social matters. The ESO and SSO will be routinely on-site for the duration of the construction works. Both officers will have minimum of Bachelor Degree in their respective specialization. The officers among others will be responsible for the following tasks:

- i) Drafting environmental and social aspects during project implementation;
- ii) Managing environmental, social, health and safety aspects at the worksites;
- iii) Participating in the definition of the no working-areas;
- iv) Recommending solutions for specific environmental and social problems;
- v) Facilitating the creation of a liaison group with the stakeholders at the project site and shall monitor the compliance of ESMP;
- vi) Organizing consultations at critical stages of the project with the stakeholders and interested parties;
- vii) He / She will be required to liaise with the IFM Safeguard specialist on the level of compliance with the ESMP achieved by the contractor regularly for the duration of the contract;
- viii) Controlling and supervising the implementation of the ESMP;
- ix) Preparing environmental and social progress or "audits" reports on the implementation status of measures and management of site works.

3.9 Relevant World Bank Environmental and Social Frameworks

The World Bank Environmental and Social Framework (ESF) is a set of policies and guidelines established by the World Bank Group to help ensure that the projects it funds are environmentally and socially sustainable. The World Bank's ESF covers a wide range of environmental and social issues, including biodiversity conservation, climate change, involuntary resettlement, indigenous peoples, labor and working conditions, pollution prevention, and community health and safety. It provides detailed guidance on how to assess and manage these issues within the context of World Bank-funded projects.

3.9.1 Objective of the Environmental and Social Framework

The proposed project will be developed and implemented according to the requirements of the World Bank Environmental and Social Framework (ESF). The ESF sets out the World Bank's commitment to sustainable development. The ESF protects people and the environment from adverse impacts that could arise from Bank-financed projects and promotes sustainable development. The ESF enables the World Bank and Borrowers to better manage environmental and social risks of projects and to improve development outcomes. The ESF also places more emphasis on building Borrower governments' own capacity to deal with environmental and social issues. The ESF offers broad and systematic coverage of environmental and social risks. It makes important advances in areas such as climate change; labour standards; transparency; nondiscrimination; social inclusion; public participation; and accountability - including expanded roles of grievance redress mechanisms.

The ESF codifies best practice in development policies. It brings the World Bank's environmental and social protections into closer harmony with those of other development institutions; and encourages Client countries to use, and improve, their own national environment and social policies, when these policies are materially consistent with the ESF and supported by adequate implementation capacity. The ESF provides an incentive for countries to develop and build their own environmental and social policies and capacity.

3.9.2 World Bank Environmental and Social Standards

The World Bank Environmental and Social Policy for Investment Project Financing sets out the requirements that the Bank must follow regarding projects it supports through Investment Project Financing. The Environmental and Social Standards set out the requirements for Borrowers role the identification and assessment of environmental and social risks and impacts and mitigation measures associated with projects supported by the Bank through Investment Project Financing. The standards are expected to:

- Support Borrowers in achieving good international practice relating to environmental and social sustainability;
- Assist Borrowers in fulfilling their national and international environmental and social obligations;
- Enhance non-discrimination, transparency, participation, accountability and governance; and
- Enhance the sustainable development outcomes of projects through ongoing stakeholder engagement.

The proposed project will apply the ESF and Table 7 describes the application of the ESSs to the project.

Table 7: Applicable World Bank Environmental and Social Standards

Environmental and Social Standards (ESS)	Applicability	Requirements
ESS1: Assessment and Management of Environmental and Social Risks and Impacts	YES	The site-specific environmental and social impacts will be managed through this report. The report has been prepared to recommend E&S measures to be incorporated into designs and implementation of the proposed project
ESS2: Labor and Working Conditions	YES	Workers will be contracted for the construction works and operation of the project. In order, to ensure fair treatment of workers, the project will ensure that terms and conditions of employment (hours, rest periods, annual leave, non-discrimination, equal opportunities and workers organizations) are aligned with the requirements of Tanzania law and ESS2. To protect workers appropriate Occupational Health and Safety (OHS) shall be applied to avoid the risk of ill health, accidents and injuries.
ESS3:Resource Efficiency and Pollution Prevention and Management	YES	The project activities will involve construction works which will generate dust, pollutant gases, noise, vibrations, erosion, wastes (solid and liquid) that will be properly managed via ESMP and EMoP. More or less similar impacts are likely to be experienced during operation phases and will be managed by the same tools as well as operation and maintenance plans.
ESS4: Community Health and Safety	YES	The project will not have substantial risk to community health and safety. Only localized negative impacts (like dust emissions, pollutant gases, vibration, noise pollution etc.) to sensitive receptors will need to be managed. Also, community safety especially is an issue of concern due to the influx of the project workers, and later on participants of the project, which might lead to GBV/ SEA/SH, as well as transmission of HIV/AIDs and other communicable diseases. Guidance on HIV/AIDs, COVID-19, GBV/SEA/SH and HEET project GRM shall be followed.
ESS5: Land Acquisition,	NO	This ESS is not relevant to the proposed project as the site

Restrictions on Land Use and Involuntary Resettlement		is legally owned by IFM
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	NO	The project site is not located inside or near protected areas and sensitive habitats. In case the project will purchase natural resources commodities such as timber, it will be important to establish the source area and to have a mechanism in place to ensure that the Primary Suppliers are not significantly impacting sensitive ecosystem or degrading natural habitats.
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	NO	This standard is not considered relevant as the project will mainly be implemented in areas where communities that meet the requirements of ESS7 are generally not available in the area.
ESS8: Cultural Heritage	YES	This ESS is relevant due to chance of finding physical cultural resources during excavation activities for new construction of the proposed project
ESS Financial Intermediaries	NO	This ESS is not relevant to the project.
ESS10: Stakeholder Engagement and Information Disclosure	YES	The proponent will provide stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation. As part of ESIA study stakeholder engagement has been done in line with the requirement of the ESS10.

CHAPTER FOUR

ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

4.1 Introduction

This chapter describes the baseline condition as they relate to the physical environment, biological environment, the socio-economic environment within the core project area and the marginal zones. The sub-sections of geographical location, physical, economic, social characteristics and infrastructure and demographic characteristics are based on secondary data observation, while the last sub-section including biological environment is based on the primary survey obtained during fieldwork.

4.2 Geographical Location

Ilemela District is one of the seven districts of the Mwanza Region of Tanzania with postcode number 33200. It is bordered to the north and west by Lake Victoria, to the east by Magu District, and the south by Nyamagana District. Part of the region's capital, the town of Mwanza, is within Ilemela District.

4.3 Physical Characteristics

4.3.1 Climate

Changes in the local climatic conditions have potential to affect the nature and location of project and infrastructure. Thus, it is important to assess the baseline climatic condition, and design projects with knowledge on the climate. Ilemela District is located in the northern Tanzania, on the southern shore of Lake Victoria, at an altitude of 1,100 meters. The Climate of Ilemela is subtropical tempered by altitude and with a dry season from June to September. Climatic elements described here include rainfall, temperature, wind, solar radiation (sunlight/ultraviolet) and humidity. Climatic analysis detects better decision-making processes in master planning and development proposals.

The nature of the proposed project is perceived as one with minimal impact on the local climate. There are a few activities that may produce emissions with potential to affect the local climate, including clearance of vegetation on site, emissions from construction equipment and trucks; and emissions from standby generators. The management options for these emissions shall be provided in detail in the ESMP.

Temperature - The temperature in Mwanza varies so little throughout the year that it is not entirely meaningful to discuss hot and cold seasons.

The proposed developments at the site will have potential to cause changed in to the local mean temperature. Clearance of local vegetation and the establishment of paved area may increase the

local temperature. Pavements absorb and store solar radiation, leading to a further increase in the surface temperatures. This phenomenon is known as the urban heat island (UHI) effect. Large quantities of solar radiation are absorbed by these materials during the day and released during the night time.

Rainfall - To show variation within the months and not just the monthly totals, we show the rainfall accumulated over a sliding 31-day period centered around each day of the year. Mwanza experiences extreme seasonal variation in monthly rainfall. The rainy period of the year lasts for 10 months, from August 12 to June 13, with a sliding 31-day rainfall of at least 0.5 inches. The month with the most rain in Mwanza is November, with an average rainfall of 5.5 inches. The rainless period of the year lasts for 2.0 months, from June 13 to August 12. The month with the least rain in Mwanza is July, with an average rainfall of 0.3 inches.

Itemela rainfall data were used in the design process of the proposed IFM Hostel structures. Rain water harvesting and storm water management facilities have been provided to manage excess rainfall, to avoid flooding and water ponding in the area, and its surrounding.

Sun - The length of the day at Mwanza does not vary substantially over the course of the year, staying within 16 minutes of 12 hours throughout. In 2024, the shortest day is June 20, with 11 hours, 59 minutes of daylight; the longest day is December 21, with 12 hours, 16 minutes of daylight.

- ***Climate Change***

-  ***Greenhouse Gas (GHG) Emissions in Tanzania***

Countries are struggling to reduce GHGs emissions, in line with the Kyoto Protocol. However, due to increase in urbanisation and industrialisation, GHGs emissions continue to increase and many countries have not taken adequate measures to reduce emissions in line with scientific findings and recommendations of the Protocol and related climate discussion (NCCS, 2012). Tanzania has ratified the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol in 1996 and 2002 respectively and has participated in the annual Conference of the Parties (CoP). The outcomes of these CoP meetings include decisions to put in place national policies, strategies and programmes to reduce greenhouse gas emissions and respond to the impacts of climate change (TNCCFA, 2013). The national estimates indicate that, Tanzania has negligible emissions levels of GHGs in terms of total and per capita whereby per capita emissions are estimated at 0.2 tCO₂e (NCCSR, 2019). The principal source of GHGs emissions in Tanzania is the Land Use, Land-Use Change and Forestry (LULUCF). Emissions from the LULUCF sector contribute about two-thirds of overall emission levels in Tanzania (NCCSR, 2019). *However, although the proposed project falls under LULUCF, the land use plan indicates that more than 44.2% of the total land will be not undergo land use change, but rather be better maintained.* Other sectors which contribute to

greenhouse gas emissions in the country are Agriculture, Energy, Waste and Industrial Process and Product Use.

According to the National Climate Change Statistics Report (NCCSR, 2019), evidences of climate change in recent periods are observed. The mean monthly maximum temperatures (28.5 °C) for the short period (2012 - 2018) are slightly higher than the long term monthly means for 1981-2010 recorded at 28.2 °C which indicates an increasing pattern of temperature over the same shorter period. The data also indicate increased trends of precipitation in recent period. The monthly average rainfall (85.4 mm) observed for the short period of 2012 - 2018 is slightly higher than the monthly average rainfall (83.3 mm) recorded for the long-term period, 1981-2010. In addition, there is a gradual rise of mean sea level from 1,992 mm in 2000 to 2,115 mm in 2019.

Impacts of Climate Change

Climate change is now recognized to have a significant impact on disaster management efforts in Tanzania and pose a significant threat to the efforts to meet the growing needs of the most vulnerable populations (NCCSR, 2019). Climate change is a cross cutting issue affecting a number of sectors including forestry, agriculture, water, lands, energy, infrastructure and others. Anticipated impacts of climate changes are basically on the energy sector, transport sector, and water and sanitation sectors and on trade.

4.3.2 Existing Land Use

The proposed land use plan generally makes provisions for various land use components for Female Student Hostel with the ability to accommodate 280 students

The land and the buildings erected thereon shall be maintained and the same shall be used for Institute's Hostel purposes only; Use Group 'C' Use Classes (a) as defined in the Urban Planning Act No. 8 of 2007, (Use Classes) Regulation of 2018. See attached copy of the ownership document.

4.3.3 Existing Land Cover

Large part of the area is covered with vegetation cover. This makes the landscape attractive and cool hence altering the surrounding air temperature, the situation that favours students to use outdoor environment during day time. The utility consumption of the building is minimized by student tendency of spending the outdoor environment during day time. When construction activities kick off some trees will be cleared, hence will reduce the green space coverage.

The proposed project land for the student's hostel covers a total area of 14943 SQM. The total built-up area for the hostel is 3001.35 SQM with plot coverage of 4.5% and a plot ratio of 0.2.

4.3.4 Topography

The land on which this project will be developed is slanting slightly towards the North. This situation is likely to cause erosion especially during rain seasons.

The topography at proposed project area for IFM Hostel portrays the potential for natural storm water drainage and rain water harvest systems. Infrastructure design may consider utilizing this potential while conserving the environment at the hostel. In addition, the presence of valleys imply that storm water produced at the hostel will flow towards lowland valleys. They may also guide the design of water retention ponds, storm water drainage and choice of location to set up waste water treatment plants.

4.3.5 Soil

The soil types of Ilemela vary from yellow, red, gritty, sandy and loam soils which are derived from coarse-grained cetaceans" rock. The soils are usually associated with the rocky Island of between 1100 – 1600 meters in height. (Source; Ilemela strategic plan)

Generally, the ground investigation revealed that on the area proposed for Girl's hostel is mainly Silty Clayey/Gravelly SAND and Silty CLAY up to where the drilling was terminated. The ground water level was not found below the ground surface within the drilled depth.

4.3.6 Geology

In general, geological formations observed in the area can be divided into the following three units by age:

- Precambrian plutonic, volcanic and metamorphosed rocks (granite and granodiorite, schist, gneiss, meta volcanic)
- Palaeozoic sedimentary rocks (Bukoban series; mudstone, shale and phyllite, sandstone, conglomerate and limestone)
- Neocene deposits (alluvium, laterite, marine and lake origin sediments, fan and terrace deposits and volcanic rocks)

Precambrian rocks occupy about 80% of the total land area of the Mwanza and Mara regions. Out of the Precambrian rocks, plutonic rocks such as granite and granodiorite are commonly exposed in the area. The assemblage formed by Petrozoic – Archean granite and greenstone is located in the central nucleus of the country, and the so-called Tanzania Craton is surrounded by Proterozoic belts. Paleozoic (ot pre-Karoo) rocks are only found in a few areas, mostly in the Mara region. Neocene deposits are common in the surface geological observations and the sediments are chiefly distributed at the lake and riverside.

4.3.7 Air Quality, Noise level and Vibration Measurements

a) Ambient Pollutant Gases

All the measured baseline data on ambient pollutant gases were found to be below their respective TBS and/or WHO limits. The summary of ambient pollutant gases baseline data (i.e. CO, NO₂, SO₂, and H₂S), are presented in Appendix IIa.

b) Average Dust as Particulate Matter (PM 2.5 and PM10)

The dust measurements were done with a view to establish the baseline status with respect to particulate matter in terms of PM10 and PM2.5 for the proposed project area (Appendix IIb). All the measured PM10 and PM2.5 levels were found to be within limits prescribed by both TBS and WHO guidelines, respectively.

c) Average Ambient Noise Levels

Noise study was also conducted with a view to establish the baseline status with respect to noise levels for the proposed project area. The measured noise levels in all measured stations were found to be within the TBS and WHO limits specified for institutional areas (Appendix IIC).

d) Vibration Levels

Ground vibrations were monitored as part of ESIA study using vibrometer which is designed to measure ground vibrations according to European standard EN14253:2003. The recorded levels were compared with both British Standard of 0.3mm/s PPV, TBS limit of 5mm/s PPV and 0.15 mm/s PPV (Peak Particle Velocity), the levels that human beings and/or animals can detect or may experience stress resulted to vibrations. However, the anticipated impact resulting from the measured vibrations is considered less-than significant as the levels did not exceed the 0.15 mm/sec PPV criteria established to evaluate the extent that can easily be detected by human (Appendix IID).

4.3.8 Natural Disasters Risks

The proposed project is at risk of climate change and climate variability risks. The rainfall trends at Mwanza where the project is going to be implemented has been erratic for the past decades leading to food insecurity and loss of natural springs. On the other hand, there is evidence of the decline of environmental resources around the project area routed by climate change and increase of human pressure on natural resources. *The proposed project shall attract more people in the project area which may compromise water and food availability. The location of the proposed site is influenced by Lake Victoria water level fluctuations. The rise of Lake Victoria water level due to rainfall and other natural factors not yet known has been leading to outflow and flood occurrences in the middle part of the proposed site. The proposed project shall increase the water level due to generation of storm water flowing towards the middle part of the site hence intensifying the flood occurrences.*

4.4 Biological Environment

4.4.1 Type of Habitat

The proposed project area is covered with trees, shrubs and grasses and is boarded with residential houses on both sides (four corners). When the project implementation kicks off some vegetation in the project site are going to be modified. However, after the construction phase of the project is over, some of the open spaces will be re-planted with grasses, trees and flowers.

4.4.2 Flora

The team found out that, the project site is composed of high diversity of plant species of different life forms including herbs, grass, shrubs and trees.

Table 8; Types of vegetation identified in the proposed construction areas

S/N	Vegetation type	Botanical Name
1.	Shrubs	<i>Sennasingueana, Lippiaukambesis, Lantanaauleata, Psidiumguajava, Lantanacamara, Grewiabicolar</i>
2.	Herbs	<i>OcimumBasilicum, Agavesisalan, Hoslundiaopposita,</i>
3.	Trees	<i>Ormocarpum trichocarpu, Acacia robusta, Ficussycomorus, Euphorbiacandelabru, Euphorbiatirucalli, Mangiferaindica, Acasianilotica, Acrocarpusfraxinifolius</i>
4.	Grass	<i>DigitariaSanguinali and Cynodondactylon</i>

4.4.3 List of IUCN Threatened Plant Species Categories and CITES identified in the area

The IUCN Red list of Threatened Species is recognized as the most comprehensive, objective global approach for evaluating the conservation status of plant and animal species. In the proposed sites, no species were recognized to be identified in the IUCN Red list as endangered (0%), vulnerable (0%) and near threatened (0%) species, the rest are of least concern (60%), or lack data (3%) and non-evaluated (37%) species. The species of least concern identified are *Acacia robusta, Ormocarpum, trichocarpum, Acacia nilotica, Senna singueana, Eucalyptus globulus, Ficussycomorus, Euphorbia candelabrum, and Euphorbia tirucalli*. These species are scattered through the constructed site, but since they follow under least concerned IUCN red list categories, they do not need special treatment or handling of the same during construction.

4.4.3 Fauna

The study area is devoid of visible free-ranging fauna. The animals observed during assessment are not included on either the CITES or the IUCN red list. Most of the animals discovered at the site are domestic animals from nearby community or surrounding residential areas. However, there is a variety of bird species and reptiles such as lizards, snakes and a significant number of rats, bugs and

flies. Also, Domestic animals are such as livestock; goats, cows and sheep. Also, there are numerous stray dogs, cats and chickens.

4.4.4 Ecosystem and Ecosystem Services

The project site ecosystem provides services (benefits important to human) which have environmental, ecological, social and economic value. The site has been covered by the built environment, vegetation of different kind. These features provide about 20 ecological services to the community. Table below shows ecosystem services provided by IFM - hostel site as per the approach developed by the Millennium Ecosystem Assessment. From Table below it can be realized that IFM hostel site ecosystem provides useful products (provisioning services), regulation services, non-material benefits (cultural services) and supporting services (services necessary for the production of all other ecosystem services). The benefits provided by the site extend from local to regional and global level. The proposed project will be localised to prevent excessive site clearance.

Table 9: Main Ecosystem types and their services

Ecosystem services			Spatial benefits			Example of species
Provisioning	1.	Water	L	R		All and existing shallow wells
	2.	Fuel	L			<i>Ormocarpum trichocarpum, Senna singueana, Acacia robusta, Lippia ukambesis, Acasia nilotica, and Grewia bicolor</i>
	3.	Natural medicines	L	R		<i>Cissus rotundifolia, Ocimum Basilicum, Digitaria Sanguinalis, Cynodon dactylon, Senna singueana, Hoslundia opposita, Euphorbia candelabrum, Lippia ukambesis, Lantana auleata, Euphorbia tirucalli, Psidium guajava</i> and others
	4.	Fruits	L			<i>Mangifera Indica, Senna singueana, Ficus sycomorus, Psidium guajava, Grewia bicolor</i> and others
	5.	Fodder				<i>Ormocarpum trichocarpum,</i>
	6.	Fiber (rope and twine)				<i>Agave sisalana,</i>
	7.	Timber				<i>Eucalyptus globulus and Acrocarpus fraxinifolius</i>
Regulating	8.	Biodiversity/biological regulation	L	R		ALL
	9.	Pollination	L			<i>Grewia bicolor, Lantana auleata,</i>
	10.	Air quality, temperature regulation and climate	L	R	G	ALL
	11.	Carbon dioxide sequestration	L	R	G	ALL
	12.	Erosion regulation	L			<i>Digitaria Sanguinalis, Cynodon dactylon</i> and all shrubs
	13.	Natural hazard – Storm water regulation	L	R		

Ecosystem services			Spatial benefits			Example of species
P	1.	Water	L	R		All and existing shallow wells
Cultural	15.	Recreational	L	R		<i>Acrocarpus fraxinifolius, Euphorbia candelabrum, Euphorbia tirucalli</i>
	16.	Aesthetics view	L	R		<i>Euphorbia candelabrum, Euphorbia tirucalli</i>
Habitat	17.	Nursery services	L	R		
	18.	Genepool protection	L	R		Native species (Appendix 1)

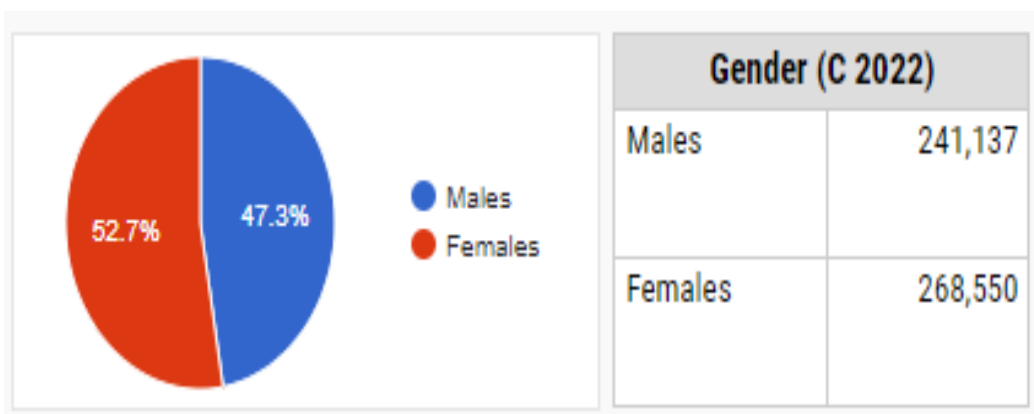
4.5 Socio-Economic and Cultural Conditions

The socio-economic survey documented a number of activities in the area for people and communities living around. In the area, the dominant social economic activities are small agricultural services. Also, the people in this area engage in other kind of economic activities like retail shops, mama Ntilie, livestock keeping and fishing activities.

4.5.1 Demography

According to the 2022 the Tanzania National Bureau of Statistics census there was 3,699,872 people in the Mwanza region, from 2,772,509 in 2012. According to 2022 the Ilemela District had a population of 509,687 with a population density of 2,000/km² (5,200/sqm), Kiseke Ward has 30,664 people (NBS, 2022).

During project implementation, a number of people are expected to increase along the project site. The expected increase in the number of people will increase pressure on the available social services and change the lives of the people of Kiseke and the surrounding communities. The Population of Kiseke ward is expected to triple in the next few years as a result of the IFM Hostel construction. During construction, the project is expecting to employ more than two hundred (100) people from outside Kiseke village. Therefore, the area will be having more people than before. The change in population level due to influx of workers and laborers will contribute to the new market opportunities for small, middle and big business persons. This will increase money circulation at the area leading to high income to the local suppliers and service providers.



4.5.2 Education

Ilemela Municipal Council has a total of 129 primary schools where 76 are Government schools and the remaining 53 are Private schools. Ilemela Municipal Council ensures that all girls and boys from disadvantaged groups are enrolled.

Ilemela Municipal Council has a total of 50 Secondary schools of which 27 are Government schools and the remaining 23 are Private schools. The Municipality also has one government wildlife Institute, three colleges and VETA. (Source; Ilemela Investment Profile, 2016.) Residences in the project area and surrounding communities do not have sufficient education facilities. In view of this, the influx of people in the project area will increase pressure on the already limited education institutions and may without the taking of steps to alleviate this place a heavy additional burden on the existing service delivery system.

4.5.3 Health

The municipal health department is responsible for overseeing promotive, preventive, curative and rehabilitative public and private health services in the municipality. There is one hospital, three public health centres, six private health centres and thirty dispensaries. (Source; Ilemela investment profile, 2016). Furthermore, the influx of job speculators from other parts of Tanzania and neighboring regions will increase interaction, consequently increasing the risk of getting HIV/AIDS infections and other communicable diseases. That, the growth of trading centers in the area will attract different businesses and different people to the extent that the level of devious behavior will also increase in the area provided that there will be employees from other areas of the country. Increased prevalence of communicable diseases like HIV/AIDS will likely to happen and consequently cause burden to the existing health services

4.5.4 Water Supply

Ilemela to a great extent is supplied with clean water. The availability of clean piped water is mainly from Lake Victoria through MWAUWASA. The total pipe network of water in Ilemela is about 220 km and serves about 65% of the total population. The Urban wards which get service from MWAUWASA are Kirumba, Nyamanoro, Kitangiri, Pasiyasi, Ilemela, Nyakato and parts of Buswelu. Apart from the piped water supply in most of the municipal areas, there are also areas serviced by Municipal Council, those rural wards are Bugogwa, Sangabuye and the wetland. Coverage of water supply in remaining parts of Buswelu. Those areas get service through underground water (shallow wells and boreholes), traditional wells, rainwater harvesting, and spring source rural areas is about 51% of total population. (Source; Ilemela investment profile, 2016.)

4.5.5 Waste Management

In Ilemela Municipality, the waste management (solid and liquid) is done under public private partnership concept (PPP). The Council has decentralized authority to the mitaa/ward level for all issues concerning tendering contracts on Solid waste management. The proposed project is at the design stage; therefore, no wastes are generated at this particular time. During implementation of the proposed project (construction, operation and decommissioning phases), the same procedure will be adopted to manage the wastes generated.

4.5.6 Gender Inclusivity

The hostel shall be developed to be smart and friendly to gender, including considerations of persons with special needs (e.g. physical, learning impairment, emotional and behavioural). These include provisions of ramps, toilets, etc.

4.5.7 Religious Facilities

In the Kiseke ward, there are two major types of religions: Muslims and Christians. There are also local traditional beliefs which are not much popular in the Ward. The Christians denominations include; Roman Catholics, Anglicans, Lutherans, and Pentecostals.

4.5.8 Energy and Power Supply

Tanzania electric supply company (TANESCO) is responsible for provision of electricity for industries and domestic use. Electricity Supplied in the Region is through National Grid. All the Districts of Mwanza are accessed by electricity. The proposed project will be connected to power supply from TANESCO. However, for reducing any disturbance that may occur due to power cut-off from TANESCO, there will be a 500Kva standby generator at the site to provide power supply.

4.5.9 Telecommunication

Mwanza Region is connected through mobile phone systems (Airtel, Vodacom, Halotel, Tigo and TTCL) and also through TTCL – Landline services. Coverage of communication services is progressively extending to cover the whole Region. The Region is also connected by optic fibre to ease communication. Despite Mobile towers located close to the area, the signal strength varies from firm to weak in some locations. Thus, the site requires improved mobile communications to provide reliable data services to allow interaction within and outside the hostel.

4.6 Economic Context and Analysis of Economic Activities in the Project Area

4.6.1 Economic Activities

The economy of the Ilemela Municipality depends largely on Agriculture, Manufacturing Industries, Trade and Business. Transport and Haulage, Construction, informal sectors and allied activities. It is envisaged that the establishment of IFM Hostel; Ilemela district will attract a number of investors from within and outside surrounding communities to invest in meeting the needs of the increased population as well as people seeking for employment in the area. This is likely to enhance the development of the centers at surrounding areas. It is also expected that service providers such as food venders and general shops may be established and increase to provide services to students, investors and staff working in the project site.

CHAPTER FIVE

STAKEHOLDER ENGAGEMENT AND GRIEVANCES REDRESS MECHANISMS

5.1 Introduction

The World Bank's Environmental and Social Framework (ESF) includes the Environmental and Social Standard (ESS) 10, "Stakeholder Engagement and Information Disclosure", which recognizes "the importance of open and transparent engagement between the Borrower and project stakeholders as an essential element of good international practice". ESS10 emphasizes that effective stakeholder engagement can significantly improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. Accordingly, the Environmental Management Act cap 191 and Environmental Management (EIA and Audit) (Amendment) Regulations, 2018, both documents provided procedures for the involvement of stakeholders and the public in the environmental assessment process. For this project a plan for public involvement was developed early in the process. Informing the local people, leaders and key stakeholders about the proposed project through consultative meetings, interviews, email communication, and telephone calls. During the consultation process, the stakeholders were briefed about the proposed project including its objectives, technologies of implementation and possible impacts associated with implementation of the project. In addition, they were informed to report any grievances through Institute grievances desk. Stakeholders were then given time to ask relevant questions regarding the proposed project to enable the consultants clarify on any issues that they may not have understood properly.

5.2 Objectives of the Consultation Process

The involvement of the local population is essential to the success of the project(s) in order to ensure smooth collaboration between project proponent and local communities and to minimize and mitigate environmental and social risks related to the proposed project activities. The overall objective of the consultation process is to disseminate project information and to incorporate the views in the design of the mitigation measures and environmental management plan. It is done to ensure the quality, comprehensiveness and effectiveness of the impact assessment to ensure that various groups' views are adequately taken into consideration in the decision-making process so as to avoid conflict at a later stage. Consultation with the stakeholders was aimed at positively conveying information about the proposed project development, clear up misunderstandings, allow a better understanding of relevant issues and how they will be dealt with, and identify and deal with areas which are controversial so as to clarify matters

and make adjustments accordingly, while the project is still in its design stage. The objectives of stakeholders' consultation are as follows:

- Define potential project stakeholders and suggest their possible project roles.
- Disseminate comprehensive information about the project to enable stakeholders to identify their concerns, needs, and recommendations.
- Listen to their comments, ideas and concerns and record the same for follow up.
- Document stakeholder feedback and enhance the ESIA accordingly
- Identify the most effective outreach channels that support continuous dialogue with the community
- Avoid any misconceptions about the project and properly manage expectations.
- Analyze gaps identified from the issues.

As a result, the key principles of effective engagement that guide stakeholder consultations include:

- a) Ensuring that all interactions are free of intimidation or coercion.
- b) Providing meaningful information in a format and language that is understandable and tailored to the needs of the target stakeholder group(s).
- c) Being inclusive in the representation of views, i.e., including different ages, and genders, and incorporating vulnerable and/or minority groups.
- d) Respecting local traditions in the decision-making processes.
- e) Information should be easily accessible for stakeholders and be culturally appropriate; to allow the effective participation of those identified as minorities, disadvantaged or vulnerable groups.
- f) 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.

5.3 Identification of Stakeholders

The study identified stakeholders to be consulted and involved throughout the project life cycle. Stakeholders' identification in this study was done through a continuous and comprehensive brainstorming process to collect an exhaustive list of people/ groups or institutions that are likely to be affected by the project/affect the project, influence the direction of the project or have those having interest over the project. In this study the following stakeholders were identified;

- i. Public institutions who have influence on the project- The identified stakeholders under this study were Ministry of Education Science and Technology (MoEST), Ilemela Municipal Council (IMC), National Council for Technical and Vocational Training (NACTVET) Occupation and

Safety Authority (OSHA), Fire and Rescue Army, Rural Water Supply and Sanitation Agency (RUWASA), Tanzania Building Agency (TBA)

- ii. Project Affected Communities-IFM Students Government Organization (IFM-SO)
- iii. Local government authorities- Mtaa Executive Officer (MEO)
- iv. Non-Governmental Organizations-Tanzania Bankers Association

5.4 Engagement Approach during Preparation Phase

During this period the consultations, presentations/interviews and discussion with the above-identified stakeholders were conducted. In the presentations, the team shared with these stakeholders timely, relevant, understandable and accessible information in a culturally appropriately manner free of manipulation, interference, coercion, discrimination and intimidation. During this stage, the team collected the views and opinions on project design, risk, and

5.5 Identification of Issues and Problems

Consultation with stakeholders indicated that, the proposed project is viewed as a positive venture that may stimulate new economic and social activities and enhance academic excellence at Mwanza. In addition, participants were convinced that the project will not pose irreversible negative impacts on the environment or community in the foreseeable future if the project is well planned and monitored.

Environmental and Socio-economic issues that emerged during the consultations with stakeholders and from other sources regarding the HEET project can be categorized into; employment, businesses, health impacts; environmental, safety and security; community services; and general wellbeing impacts. Both actual and perceived impacts are described, having been gathered from people's opinion as well as factual data and comment.

Most of the economic impacts of the proposed project are positive, in that the implementation of HEET project at Mwanza is associated with benefits. Health impacts – both real and perceived – are those associated with water pollution as a result of the project, and increased risk of accident and security/ incidents. Many of the anticipated community impacts – especially on safety and security need prompt handling. The identified environmental and socio-economic impacts are summarised in the following.

Table 10: Categories of issues and problems

S/N	Category of issues /problems	Issues/Problems	Responsible
1.	Employment opportunities	<ul style="list-style-type: none"> ➤ Priority to the locals ➤ Gender consideration 	Developer
2.	Revenue Generation	<ul style="list-style-type: none"> ➤ Taxation ➤ Job creations 	Developer, TRA,
3.	Waste management	<ul style="list-style-type: none"> ➤ Type of waste ➤ Current practice in disposal ➤ Spread of diseases 	Contractor, Developer, Municipal Environmental Officer
4.	Infrastructure	<ul style="list-style-type: none"> ➤ Storm water drainage ➤ Sewerage system ➤ Road network 	Contractor, Developer, Town planner
5.	Source of construction material	<ul style="list-style-type: none"> ➤ Type of construction material 	Developer, contractor
6.	Safety of workers	<ul style="list-style-type: none"> ➤ Available safety measures in place 	OSHA, Developer
7	Environmental and Health issues	<ul style="list-style-type: none"> ➤ Noise levels in the community ➤ Air quality – dust from the project ➤ Loss of vegetation ➤ Water 	

5.6 Stakeholders' Views and Concerns

Initial consultation process focused on the Proponent. It considered various issues that may pose adverse impacts on the environment. It included issues on employment, waste management and so on. The role of the consultant was to moderate the meeting, and the team assistant took notes. The question-and-answer sessions took place until the questions were exhausted and some form of consensus was reached. The main issues discussed by some stakeholders are summarized in Table 16.

Table 11:Detailed Stakeholders Concerns

Name Of Institution	Views And Concern Raised	Response
Ilemela Municipal Council	<ul style="list-style-type: none"> • The proposed project will bring employment to both skilled and unskilled labour. • There will be an increase in revenue during the construction phase. • An incinerator should be built for the management of sanitary pads • There should be water storage tanks to serve during water shortage 	<ul style="list-style-type: none"> • The proponent will give priority to the people surrounding the project site. • The proponent will procure goods and services in the Mwanza region. • High tech Incinerator will be built for the management of sanitary pads • Several water storage tanks will be placed to serve during a water shortage
Ilemela Municipal Council	<ul style="list-style-type: none"> • There should be good storage of raw materials. • Provide onsite waste storage facilities. • Storm water management should be done 	<ul style="list-style-type: none"> • A temporary store has already been constructed to store raw materials during the construction phases • The management will provide dustbins throughout the project phase • The waterways will be constructed and connected to the municipal drainage
Ilemela Municipal Council	<ul style="list-style-type: none"> • Large areas should not be paved but should be planted with grasses. • Planting of trees should be done after finishing construction (trees, grasses etc. 	<ul style="list-style-type: none"> • Larger areas will be planted with grasses and trees to control soil erosion and dust emission.
Ilemela Municipal Council	<ul style="list-style-type: none"> • An incinerator should be built for the management of sanitary pads 	<ul style="list-style-type: none"> • High tech Incinerator will be built for the management of sanitary pads

	<ul style="list-style-type: none"> • A canteen should be provided during construction rather than cooking near the road. • Sanitary facilities should be provided during the construction phase 	<ul style="list-style-type: none"> • A temporary canteen will be established during the construction phase • Temporary sanitary facilities will be constructed during the construction phase
Ilemela Municipal Council	<ul style="list-style-type: none"> • The proponent should consider the existing roads • The project site aligns with land use planning • The proponent has been given a construction permit 	<ul style="list-style-type: none"> • The project proponent will consider all existing roads
Occupational Safety and Health Authority (OSHA)	<ul style="list-style-type: none"> • The proponent should register the project with OSHA • Workers' medical examinations should be done annually • There should be good sanitary facilities for all gender • Workers should be provided with appropriate PPEs during all project phases • Workers should attend health and safety training and first aid training • Occupation Risk assessment should be done • Health and safety policy should be formulated 	<ul style="list-style-type: none"> • The management will register the workplace to OSHA • Medical checkups will be conducted for workers annually • Good housekeeping will be maintained at all project phases • Appropriate PPEs will be provided to the workers depending on their line of duty
Kiseke Ward	<ul style="list-style-type: none"> ▪ Investments in such bring us employment opportunities so we welcome the project ▪ The management should pay waste collection fees on time 	<ul style="list-style-type: none"> • Priority will be given to the locals on employment opportunities • Waste collection fees will be paid on time

	<ul style="list-style-type: none"> ▪ The management should collaborate with the local Government office on different matters ▪ Corporate social responsibility issues should be adhered to. 	<ul style="list-style-type: none"> • The management will collaborate with the local Government office on different matters • Corporate social responsibility issues shall be adhered to
PPF Mtaa	<ul style="list-style-type: none"> ▪ The management should collaborate with the local Government office on different matters ▪ Priority on Employment opportunities should favour the people living around the community where the project is situated. ▪ Corporate social responsibility issues should be adhered to. 	<ul style="list-style-type: none"> • Priority will be given to the locals on employment opportunities • The management will collaborate with the local Government office on different matters • Corporate social responsibility issues will be adhered to
PPF Mtaa	<ul style="list-style-type: none"> ▪ Priority on Employment opportunities should favour the people living around the community where the project is situated. 	<ul style="list-style-type: none"> • Priority will be given to the locals on employment opportunities
National Council for Technical and Vocational Training (NACTVET)	<ul style="list-style-type: none"> • Procedures for campus registration and inspections were followed • IFM should make sure they have all required permits before construction and during the operation of the premise ▪ Building designs should consider disability people 	<ul style="list-style-type: none"> ▪ Building Permits, Architectural Drawings, Title deeds etc. are present • Services like ramps, staircases, lift, corridors, toilets etc. are designed in a manner that even the disabled will access easily, see architectural drawings in the list of appendices
National Council for Technical and Vocational Training (NACTVET)	<ul style="list-style-type: none"> • The IFM management should make sure that there are sufficient and qualified staff • There should be staff houses ▪ The courses to be provided should benefit the 	<ul style="list-style-type: none"> • Staff houses will be constructed.

	students and community	
National Council for Technical and Vocational Training (NACTVET)	<ul style="list-style-type: none"> • Infrastructures like library, internet etc. should be available. ▪ Disabled students and staff should be considered in the design 	<ul style="list-style-type: none"> ▪ There will be a library and computer lab with capacity to house 480 students • The design has considered disability students and staff
Tanzania Bankers Association (TBA)	<ul style="list-style-type: none"> • Institutions should improve and maintain the quality of education to ensure that their programs meet labour market demand • IFM should create a link between the courses provided and the market ▪ The management should make sure students attend training at workplace with enough time 	<ul style="list-style-type: none"> • The management will ensure that their programs meet the labour market demand
Tanzania Bankers Association (TBA)	<ul style="list-style-type: none"> • Institutions should improve and maintain the quality of education to ensure that their programs meet labor market demand • IFM should create a link between the courses provided and the market • The management should make sure students attend training at workplace with enough time 	<ul style="list-style-type: none"> • The management will ensure that their programs meet the labor market demand
Tanzania Building Agency-TBA	<ul style="list-style-type: none"> • Register the project with relevant board i.e. AQRB, ERB, CRB etc. • Design consideration should be achieved (special needs, openings, spatial organization, plot coverage (not more than 55%)) 	<ul style="list-style-type: none"> • The project will be registered to AQRB, ERB, CRB • The design has considered special needs, see Architectural Drawings Appendix 8 • Plot ratio, coverage and parking areas were

	<ul style="list-style-type: none"> • Design should cover/relevant to density/population (Ratio density) • Design according to Arch standard • Site layout should indicate number of parking, hard surface and soft surface area covered, number of entrances, private and public special organization • Indicate transformation of one phase to the next phase during construction (one building construction to another building construction) 	considered during designing, see Architectural Drawings appendix 8
IFM – Students Organization Mwanza Campus	<ul style="list-style-type: none"> • The proposed new location for hostel will benefit the students as most of them are living on rented houses and or hostels which does not favor their wellbeing • The students will get access to study in groups as they will be living in the same hostel which will improve their academic performance • The proposed project will favor the students to access play grounds of their own instead of renting playing grounds 	<ul style="list-style-type: none"> • The proposed hostel will be managed / supervised properly to improve students wellbeing as well as to promote their academic performance
SOI – Police Mwanza	<ul style="list-style-type: none"> • We deliver the services that are being provided by police force until now, we provide serviced in Kiseke and surrounding areas. • Since the IFM hostel construction project is a new 	<ul style="list-style-type: none"> • The management will come with the agreement on the issue of the existing police station

	<p>setting in the area and IFM have found a police station facility existence in area. It will be more interesting if IMF and Police Force work together to improve something to meet current and future demands since social interaction has increased as well as the challenges of public safety and security have increased or will increase”.</p>	
TARURA	<ul style="list-style-type: none"> • Currently earth road at PPF Mtaa, Kiseke ward is not in the budget for this financial year, so we ask IFM, due to our tight budget that they should consider setting the budget for access roads around the project area, TARURA Ilemela District are ready to cooperate with you.” 	<ul style="list-style-type: none"> • The proponent shall cooperate with TARURA on the development of access roads around the project area
Basin Water Board office	<ul style="list-style-type: none"> • The proponent should apply for ground water permit for borehole to be drilled during project implementation • The proponent should apply for water use permit that will be abstracted from the borehole to be drilled during project implementation • Ensure that project activities will not cause any pollution to the water sources both surface and ground water according to the section 39 of the Water Resources Management Act no.11 of 2008 as amended by Act no. 8 of 2022 	<ul style="list-style-type: none"> • The proponent shall follow all the required steps to acquire ground water permit for borehole, water use permit that will be abstracted from the borehole and discharge permit • Proper measures will be developed to ensure that there is no pollution on the water sources both surface and ground water

	<ul style="list-style-type: none"> • Apply for discharge permit from Lake Victoria Basin Water Board if discharge of wastewater to the environment will be necessary according to section 63 of the Water Resources Management Act no.11 of 2008 as amended by Act no. 8 of 2022 • Ensure proper management of storm water throughout the project lifespan by constructing proper drainage system • Make sure solid, liquid and hazardous wastes are properly managed • The proponent should comply with the water supply and sanitation act no.5 of 2019 and the water resources management act no. 11of 2009 as amended by Act no. 8 of 2022 	
Ministry of Education Science and Technology (MoEST)	<ul style="list-style-type: none"> • The proponent should consider to reduce noise and other nuisance during construction phase • Proponent should control dust and exhaust emissions from construction activities / operations • Avoid pollution of water sources at the project area and • Ensure proper handling of wastes 	<ul style="list-style-type: none"> • Efforts to reduce noise, nuisance, control dust and exhaust emissions shall be taken into consideration in all project phases • Proper liquid waste management shall be practiced in all project phases • Proper solid waste management shall be conducted with priority on sorting practices
Fire and Rescue force	<ul style="list-style-type: none"> • The proponent should submit architectural drawings with fire protection and evacuation plan 	<ul style="list-style-type: none"> • The architectural drawings with fire protection and evacuation plan have been submitted to

	<p>for approval.</p> <ul style="list-style-type: none"> • The proponent should install fire extinguisher at the strategic locations such as portable fire extinguisher, fire detection system, fire hydrants, fire horse reels and fire alarms. • There should be a borehole which will be used in case of fire emergencies • Training on fire safety should be conducted to the workers and • The building should be inspected by responsible personnel from the rescue offices and fire certificates shall be issued 	<p>fire office for approval.</p> <ul style="list-style-type: none"> • Fire extinguisher shall be installed at the strategic locations such as portable fire extinguisher, fire detection system, fire hydrants, fire horse reels and fire alarms. • Plan to drill a borehole has been made by the proponent after survey is done • Workers shall be trained on fire safety annually
--	--	--

5.7 Stakeholders Engagement during Implementation

During Project implementation, engagement activities will be undertaken in relation to project activities under Component 1: Establishment of 5 storeys Hostel for female students; Component 2: Support for Project Coordination and Management. At this stage, the study will conduct a number of structured and formal meetings, focus group discussions, community meetings, one to one interview, distribution of information (pamphlets) and site visits that will involve a number of stakeholders as identified above. The timing for the conducts of the above meetings will be determined by the progress of the project implementation and when seems necessary to invite stakeholders for their comments and observation. However, the sharing of information and progress with stakeholders will be subject to scrutiny with regards to the kind of information to be shared and how the same will be communicated to both stakeholders, PAPs. Furthermore, at this stage, the IFM Mwanza will ensure equal and effective participation from project preparation to implementation stages. To ensure stakeholders' views and concerns are well captured, the SEP will have different methods of collecting information based on their needs i.e., disadvantaged or vulnerable groups.

Table 12: Summary of the stakeholder's engagement during implementation

Sn	Objective	Messages	Means of Communication
Project Preparation			
1.	To present the draft SEP (for comment) and final versions of the instruments.	<ul style="list-style-type: none"> • Presentation of the Project and its implementation schedule • Present environmental and social impacts and risks reports and its enhancement and mitigation plan. • Describe Grievance Redress Mechanism • Present a list of identified stakeholders and describe an approach their engagement. 	<ul style="list-style-type: none"> • Organized public meetings /Consultations based on Stakeholders needs and circumstances. (GD, one on one meetings etc. • Disclosure on IFM Website • Emailing to respective stakeholders • Email copies of the instruments to Non-State Actors and other institutions. • Sharing of executive summaries in hard copy during meetings • For stakeholders who are illiterate, information will be presented verbally during meetings in local language. • Disclosure of Project documentation in appropriate and accessible manner • The instruments will be disclosed in Swahili language in project offices and hard copies will be accessible to PAPs and OIP.
2.	ESIA / ESMP Preparation and Disclosure	<ul style="list-style-type: none"> • To inform the preparation of the Environmental Statement/ ESMP etc. and present findings when drafted to 	<ul style="list-style-type: none"> • Face to Face Meetings • Community Meetings • Site Visits based on stakeholders needs and

		all the identified stakeholders	<p>circumstances.</p> <ul style="list-style-type: none"> • FGD, one on one meetings etc. • Disclosure of Project documentation in appropriate and accessible manner • The instruments will be disclosed in Swahili language at the Institute and in the offices of the identified stakeholders or public meetings
Construction Phase			
2.	Meeting to Alert stakeholders to the start of construction	<ul style="list-style-type: none"> • Inform stakeholders on the commencement of construction activities • Provide project Information and education on the risks and impacts, GRM, workers code of conduct etc. 	<ul style="list-style-type: none"> • Public Meetings • Face to Face Meetings • Groups Discussions based on stakeholders needs and circumstances. • FGD, one on one meetings etc.
3	Alert stakeholders of any new activities and Provide updates on project progress (every month)	<ul style="list-style-type: none"> • Inform public about any emerging issues; provide information on risks and impacts. GRM, workers code of conduct etc. 	<ul style="list-style-type: none"> • Public Announcements • Focus Group Discussions • Community Meetings • Meetings with Mtaa office of PPF and Kiseke ward
4.	Contact with the Project Coordination Team	<ul style="list-style-type: none"> • Provide phone number/WhatsApp account and email for stakeholders to submit questions and give out comments 	<ul style="list-style-type: none"> • Meetings with Mtaa office of PPF and Kiseke ward as well as PAP and OIP

Throughout The Project			
5.	Information Dissemination	<ul style="list-style-type: none"> • General information on IFM HEET implementation 	<ul style="list-style-type: none"> • Posting on bulletin boards; Information leaflets • Outreach activities with students such as presentations, workshops and public meetings. • Sharing on IFM social media and website
	Contact with the Project Coordination Team	<ul style="list-style-type: none"> • Maintain website with contact box, email, social media accounts and phone number for people to submit questions, comments and concerns. 	<ul style="list-style-type: none"> • IFM Websites • IFM Mwanza Campus and hostel phone number for HEET activities and concerns will be shared to project sites and all

NOTE: The face-to-face consultations with stakeholders will strictly follow national and international guidelines on health and hygiene procedures in order to avoid the spread of diseases including COVID-19 and other respiratory diseases

5.8 Stakeholders Engagement during Implementation:

Proposed Strategy for Information Engagement

Information disclosure strategies attempt to increase the availability of information on the proposed expansion and the entire HEET project at IFM hostel. The public disclosure of the information will be very useful in motivating and improving the performance of the project. During implementation, when new activities are being developed engagement will be undertaken to inform the development of the specific sub-project and plans. Further engagement on the frameworks will also be undertaken. However, and depending on the need of each stakeholder, IFM Mwanza hostel will use the following methods;

- i. **Structured Agenda** – Depending on the issue at hand, IFM will be developing focused agenda so as to ensure that key strategic and risk items can be discussed with all relevant stakeholders in order to foster decision making and address risk factors and develop enhancement measures during project implementation.
- ii. **Focus Group Meetings/ Discussions** – IFM will employ FGD when aiming to bring together stakeholders with the same interests or common characteristics into a meeting to discuss specific topics or project components in a focused manner. FGD will be employed to explore issues that are relevant to specific groups or sub-groups of a community – such as youth, the elderly, women, students and people with disabilities. The intention of using this approach is centred upon establishing of similarities and differences among people of the same or different groups.
- iii. **Formal meetings** - These meetings will be focused to identify and discuss specific stakeholder concerns and to disclose project information. Participation in these meetings will be influenced by the issues under consideration and will include adequate representation of women as well as other marginalized and vulnerable people where possible.
- iv. **One-on-one interviews** – The interviews will aim to give chance to individuals to air concerns on project and will involve PAPs and OIPs depending on the issues to be addressed.
- v. **Distribution of pamphlets** – This is a way of sharing information to a wide range of individuals.
- vi. **Site visits** – These visits are focused to identify and discuss stakeholder concerns and to disclose project information within communities.

Table 13: Summary of Stakeholders Communication Strategy that reflect the characteristics and corresponding specific needs

SN	Stakeholders group	Specific needs	Language	Communication Means
1.	Government Entities and Implementing Institutions and Agencies (OSHA, Fire IMC)	i. Inclusion in the decision-making processes and implementation role of the project	Kiswahili	Correspondence by phone/email Meetings Roundtable discussions
2.	Communities and local government authorities of Kiseke ward	i. Sensitization as to the project, its benefits and their role. ii. Information on the Project and approach to managing environmental and social issues.	Kiswahili	Community meetings Outreach activities
3	Students, Students government and people with disabilities	i. Sensitization as to the project, its benefits and their role ii. Information on the Project and approach to managing environmental and social issues iii. Consideration of their decision-making processes	Kiswahili	Meetings Roundtable discussions Community meetings Group discussions Outreach activities
4	Vulnerable Groups (women, youth and elders)	i. Sensitization as to the project, its benefits and their role. ii. Information on the Project and approach to managing environmental and social issues. iii. Efforts to ensure VGs feel that their issues	Kiswahili	Disclosure of Project documentation in a culturally appropriate and accessible manner. Community meetings Group Discussions Outreach activities

		will be heard and addressed.		
5	Other interested parties	i. Depend on stakeholder to be met	Kiswahili	Correspondence by phone/email Meetings Roundtable discussions
6	IFM hostel Staff	i. Sensitization as to the project, its benefits and their role. ii. Information on the Project and approach to managing environmental and social issues.	Kiswahili	Correspondence by phone/email meetings Roundtable discussions

5.9 Stakeholders’ Engagement Plan (SEP)

The engagement plan will be reviewed and updated throughout the project implementation. During this process, the focus and scope of the SEP may change to reflect the varying stages of project implementation and to encompass any changes in project design and lessons learnt from previous phases of the Project. However, it is important to develop a guiding framework that may act as roadmap for stakeholders’ engagement as shown in the table 19

Table 14: Stakeholders’ Engagement Plan

Target Stakeholders	Objective	Messages/ Agenda	Means of Communication	Schedule/ frequency	Responsible person/group
Project Preparation And Pre-Construction Phase					
Representatives of implementing institutions and agencies (OSHA, FIRE, IMC); Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	<ul style="list-style-type: none"> i. To present drafts and get stakeholders inputs on the following instruments: ii. Environmental and Social Management Framework (ESMF); iii. Stakeholder Engagement Plan 	<ul style="list-style-type: none"> 1. Presentation on the Project– objectives, rationale, components, benefits and beneficiaries, implementation arrangements. 2. Implementation schedule and period 3. Environmental and social impacts, measures for mitigation and management 	Organized public Meetings/ Consultations Disclosure of Project documentation	At least once per each stage of the project implementation	IFM Monitoring and evaluation team

Target Stakeholders	Objective	Messages/ Agenda	Means of Communication	Schedule/ frequency	Responsible person/group
	(SEP)	<ol style="list-style-type: none"> 4. Describe Grievance Redress Mechanism 5. Present stakeholders identified and 6. Describe approach to stakeholder engagement 7. Explain on the measures, actions, plans, and expected timelines for compliance with ESS documents 8. The LMP identifies the main labour requirements and risks associated with the project. 			
Representatives of implementing institutions and agencies (OSHA, FIRE, IMC); Local NSAs;	1. To disclose finalized ESMF, SEP, LMP and ESCP and ESIA	1. Email message to advise Stakeholders of disclosure and where to access the disclosed	Organized public Meetings/ Consultations Disclosure of Project	At least once per each stage of the project or	IFM Monitoring and evaluation team

Target Stakeholders	Objective	Messages/ Agenda	Means of Communication	Schedule/ frequency	Responsible person/group
Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector		documents. 2. Disclosure of Project documentation in an accessible manner	documentation Email copies to key individuals and organizations.	once when there is changes or revision	
Construction Phase					
Representatives of implementing institutions and agencies (OSHA, Fire, IMC); Local NSAs; Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	1. Meeting to inform stakeholders to the start of construction	1. Inform stakeholders that construction will commence. 2. Information and education on the risks and impacts, GRM, workers code of conduct etc. 3. Inform the stakeholders of the construction plans, builders, route for transportation of materials, water sources	Public Meetings Focus Groups Discussions. Face to Face Meetings	At least once per each stage of the project or once when there is changes or revision	IFM Monitoring and evaluation team

Target Stakeholders	Objective	Messages/ Agenda	Means of Communication	Schedule/ frequency	Responsible person/group
Representatives of implementing institutions and agencies (OSHA, FIRE, IMC); Local NSAs; Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	<ol style="list-style-type: none"> To inform stakeholders of any new activities, unexpected impacts etc. during construction. To Provide updates on project progress 	3. Inform on the new changes and progress	Public Meetings Focus Groups Discussions. Face to Face Meetings	At least once per each stage of the project or once when there is changes or revision	IFM Monitoring and evaluation team
Representatives of implementing institutions and agencies (OSHA, Fire, IMC); Local NSAs; Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	<ol style="list-style-type: none"> Inform stakeholders of any new activities, unexpected impacts etc. during construction. Provide updates on project 	Inform public about any emerging issues Information and education on the risks and impacts, GRM, workers code of conduct etc. Updates on project progress etc.	Public Meetings Focus Groups Discussions. Face to Face Meetings	At least once per each stage of the project or once when there is changes or revision	IFM Monitoring and evaluation team

Target Stakeholders	Objective	Messages/ Agenda	Means of Communication	Schedule/ frequency	Responsible person/group
	progress				
Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	1. Resolve grievances received	<ol style="list-style-type: none"> To address grievances related to construction activities Refer persons affected by project related GBV/SEA to services To promote accountability for violations of GBV by project staff. 	<p>Face-to-face meetings</p> <p>Confidential and safe face to face referral for GBV survivors</p> <p>Meetings and aggrieved persons</p>	Every time a grievance is received	IFM Monitoring and evaluation team, IFM Gender Unit and Gender expert
Representatives of implementing institutions and agencies (OSHA, Fire, IMC); Local NSAs; Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	1. Contact with the Environmental and Social Project Experts	1. Sharing of phone number and WhatsApp number to submit questions and other comments.	<p>Phone number</p> <p>WhatsApp number</p>	At least once per each stage of the project or once when there is changes or revision	

Target Stakeholders	Objective	Messages/ Agenda	Means of Communication	Schedule/ frequency	Responsible person/group
Throughout The Project (All Components)					
Representatives of implementing institutions and agencies (OSHA, Fire, IMC); Local NSAs; Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	1. Information dissemination	1. To share general information on project, activities	Posting on bulletin boards; Information leaflets Community meetings Outreach activities – Focus groups. One to one meeting Sharing on IFM social media and website	At least once per each stage of the project or once when there is changes or revision	PRO office
Representatives of implementing institutions and agencies (OSHA, Fire, IMC); Local NSAs; Community groups representatives from PPF Mtaa and Kiseke ward, Students and Student organisation, IFM staff, service providers and private sector	2. Contact with the Environmental and Social Project Experts	2. Sharing of phone number and WhatsApp number to submit questions and other comments.	Phone number WhatsApp number	At least once per each stage of the project or once when there is changes or revision	

5.10 Grievance Redress Mechanisms

A Grievance Redress Mechanism (GRM) is necessary for addressing the legitimate concerns of the project-affected persons. Grievance handling mechanisms provide a formal avenue for affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts. Grievances are any complaints or suggestions about the way a project is being implemented, and they may take the form of specific complaints for damages/injury, concerns around resettlement and compensation, concerns about routine project activities, or perceived incidents or impacts. GRM provide a formal avenue for affected groups or stakeholders to engage with the project on issues of concern or unaddressed impacts. To make this aim a reality, IFM will develop grievance-handling mechanisms and procedures to address grievances associated with the proposed project related to PAP.

The proposed grievances officers at IFM lead Legal Counsel/Officer of the Institution and Director of Tender. However, the Vice Chancellor has a mandate and jurisdiction to decide otherwise on the team composition or appoint a new team when deemed fit and necessary to do so.

5.10.1 Levels of Grievances Handling at IFM Institution

Currently, no Grievance redress mechanism connected with the proposed project. However, during the study, we found zero complaints related to the implementation of the project. The grievance redress mechanisms at IFM will involve three levels as displayed in Table below.

Table 15; Levels of grievance redress mechanisms

Sn	Level Of Grievance	Nature Of Grievances And Procedure For GRM	Responsible Person	Support Persons
1.	Level One	<ol style="list-style-type: none"> To resolve an issue quickly, politely, transparently and amicably to facilitate project activities to move forward Existing mechanisms such as at the Village/Mtaa level will be utilized as needed to address complaints on specific issues depending on their nature 	Legal Counsel/Officer of IFM	Mtaa Executive Officers and Mtaa Chairpersons of PPF IFM Gender Director Student union A representative from the contractor
2.	Level	1. Grievances that can't be resolved by	Vice Chancellor	Legal

	Two	the team above or the ones are that are complicated will be referred to the Higher IFM Institution Management who will be responsible for receiving and resolving grievances in a fair, objective, and constructive manner, all claims or complaints raised by project affected persons.	(VC) Deputy Vice-Chancellor Deputy Vice-Chancellor	Counsel/Officer of IFM
3.	Level Three:	1. The PAP that will not be satisfied by the decision of IFM GRM will be advised to seek further redress to the MoEST	MoEST	Vice Chancellor Deputy Vice-Chancellor Deputy Vice-Chancellor

5.10.2 Grievance Procedure for Construction and Operational of the Proposed Project

For a grievance to be fully resolved, IFM has laid down several procedures that the whole process will go through as displayed in the Table below.

Table 16: Grievance Procedure

SN	Step	Procedure	Means of Communication	Timeframe	Responsible
1.	Step 1: Submission of Grievances	1. The affected person shall file their grievance to the Institution Legal Counsel and Gender Unit of IFM, which will be recorded in writing	Through suggestion boxes in construction sites During regular meetings held with stakeholders During informal meetings Letter addressed to the management	Anytime a grievance happens and the same will be channelled at the next stage within 5 working days after its submission	Legal Counsel/Officer of IFM, Gender experts

			email, messages and telephone		
2.	Step Two: Logging the Grievance	1. Once a grievance has been received it must first be logged in the grievance database register before assigned a date for investigation and hearing	Through writing a formal letter By phone calls, messages and email, formal and informal meetings by IFM	Registration is done once the grievances are received and processed within five working days	Legal Counsel/Officer of IFM, Gender experts
3.	Step Three: Providing the Initial Response	1. The person, community, or stakeholder that lodged the initial grievance will then be contacted within 2 days to acknowledge that the same has been received and provide its status and notification 2. The notification will include details of the next steps for investigation of the grievance, including the person/department responsible for the case and the proposed timeline for investigation and	Through writing a formal letter By phone calls, messages and email, formal and informal meetings	Response to given within 5 days and the notification for the next steps In case of continuous harm, immediate response will be taken without delay to prevent the harm	Legal Counsel/Officer of IFM, Gender experts

		<p>resolution which will depend on the severity of the incident.</p> <p>3. Depending on the context and situation, it may be necessary to provide an immediate response to avoid further harm while more detailed investigations are undertaken e.g., in the case of fatalities, workplace accidents, community safety pollution of natural resources, conflict with communities etc.</p>			
4	Step Four: Investigating the Grievance	<p>1. The GRM team will initiate an investigation within one week after a grievance is received.</p> <p>2. Depending on the nature of the grievance, the team involved in the investigation will vary.</p>	<p>Through writing a formal letter</p> <p>By phone calls, messages and email, formal and informal meetings</p>	<p>The team will continually update the aggrieved on the progress of the investigation and the timeline for a conclusion. The investigation should be completed</p>	<p>Team to be selected by Vice Chancellor (VC), Deputy Vice-Chancellor, and Deputy Vice-Chancellor depending on the issue at hand</p>

		3. The investigation team will involve the aggrieved person/people in this investigation, where possible.		within 14 days	
5	Step Five: Communication of the Response	1. The grievances team will outline the steps taken to ensure that the grievance does not re-occur and any measures needed to resolve the complaint.	Through writing a formal letter By phone calls, messages and email, formal and informal meetings	The response will be communicated within 1 day of the resolution being determined.	Legal Counsel/Officer of IFM, Gender experts
6	Step Six: Complainant Response	1. When a complainant is satisfied then the team will seek their sign off 2. The team and the complainant will agree and determine if any follow-up is needed to monitor the implementation of the resolution.	Through writing a formal letter By phone calls, messages and email, formal and informal meetings	Within 5 days	Legal Counsel/Officer of IFM, Gender experts
7	Step Seven: Grievance Closure or Taking Further Steps if the Grievance Remains Open	1. Once the measures have been implemented to the complainant's satisfaction, the grievance should be closed. If, however, the grievance still stands then the team	Through writing a formal letter By phone calls, messages and email, formal and informal meetings		

		<p>will initiate a further investigation and determine the steps for future action.</p> <p>2. Once all possible redress has been proposed and if the complaint is still not satisfied then they should be advised of their right to the next step of contacting the MoEST</p>			
--	--	---	--	--	--

CHAPTER SIX

ASSESSMENT OF IMPACTS AND IDENTIFICATION OF ALTERNATIVES

6.1 Introduction

This section outlines the process of impact identification and assessment of the impacts in each stage of the proposed project. The proposed mitigation measures are outlined of which MoEST through IFM is committed to undertake so as to prevent or reduce the identified adverse impacts. This study is conducted for envisaging a road map to ensure the investments to be financed under this project are designed and implemented in an environmentally sound and socially acceptable manner that meets both requirements of World Bank Environmental Standards (ESS) and the Government of Tanzania (GoT) legislations.

Environmental risks and impacts assessment done included:

- (i) Those defined by the WB Environmental Health and Safety Guidelines, EHSGs;
- (ii) Those related to conservation, maintenance community safety;
- (iii) Those related to climate change
- (iv) Any material threat to the protection, and restoration of natural habitats and biodiversity; and
- (v) Those related to ecosystem services and the use of living natural resources;

Social risks and impacts assessment done included:

- (i) Threats to human security through crime or violence;
- (ii) Risks that project impacts fall disproportionately on individuals and groups who, because of their particular circumstances, may be disadvantaged or vulnerable; and
- (iii) Negative economic and social impacts relating to the involuntary taking of land or restrictions on land use.

6.2 Impact Identification

Impact identification is a process designed to ensure that all potential significant impacts are identified and considered in project design and implementation. A number of 'tools' are available to assist in impact identification. The simplest, and most frequently used, are checklists of impacts, although matrices, network diagrams and map overlays are also commonly used. In this EIA study, a checklist and matrix methods were used. The checklists, which have been developed from previous experiences, provide lists of potential impacts associated with specific activities. They provide a quick method of identifying the impacts and in such help also practitioners to avoid overlooking some of potential of the impacts

associated with a particular activity. The matrix provides a rather systematic way of evaluating the identified impacts.

6.3 Impact Evaluation and Scoring Matrix

After identifying the positive and negative environmental impacts the project will have on the environment, further analysis was conducted to determine the extent and significance of the impacts. The aspects that were considered were magnitude, significance, probability of occurrence and duration of impacts which have been properly explained.

6.3.1 Magnitude

Magnitude is a measure of the general degree, extensiveness, or scale of impacts. The magnitude was scored at four levels i.e. household level, local level, regional level and national level.

6.3.2 Significance

This is a measure of the importance of a particular action on the environmental factor in the specific instance under consideration. This was scored using values ranging from +3 to - 3 with a score of 1 representing a low/minimal impact, 2 moderate impact and 3 representing a high impact. Negative impacts were assigned a minus (-) sign and positive impacts are given a plus (+) sign.

6.3.3 Probability of Occurrence

Provides an estimate of the probability of an impact occurring before mitigation is applied. The impacts were considered as:

- a) Possible (impact may occur but it is not probable);
- b) Probable (the impact is very likely to occur); and
- c) Definite (impact is unavoidable).

6.3.4 Duration

Refers to the period over which an impact may occur, from once-off to continuous for the life of the project. Duration of impacts was considered as 1 for a low/ minimal impact and a score of 3 for a high impact. Each impact is given a score from 1 to 3 against each of the four attributes. The scores for each impact are added to give a total score for the four attributes, indicating the overall severity of the impact. A high score (3) represents a high impact and a low score (1) represents a low impact. Negative impacts are assigned a minus sign and positive impacts are given a plus sign. Table 20 shows the scoring scale used for the evaluation of the impacts. The four rows allow the evaluation of impacts in terms of

magnitude, significance, probability and duration. The columns outline the scoring scale; with a score of 1 for a low/ minimal impact and a score of 3 for a high impact. Each impact is given a score from 1 to 3 against each of the four attributes. The scores for each impact are added to give a total score for the four attributes, indicating the overall severity of the impact. A high score (3) represents a high impact and a low score (1) represents a low impact. Negative impacts are assigned a minus sign and positive impacts are given a plus sign. For purposes of this analysis, an impact matrix was prepared and is provided in Table 22.

Table 17: Impact scoring matrix with a significant level

Impact	The spatial extent of the impacts	Significance of the impact	Probability of occurrence of the impact	Duration of the impact	Total Score
IMPACTS DURING PLANNING AND DESIGN					
POSITIVE IMPACTS					
1.Creation of employment	1	1	3	1	6
IMPACTS DURING CONSTRUCTION					
POSITIVE IMPACTS					
1.Creation of employment	3	3	3	3	12
2. Creation of a market for local construction materials	3	2	3	2	10
3.Promotion of small-scale businesses	3	3	3	2	11
NEGATIVE IMPACTS					
1.Air Pollution	-3	-3	-3	-2	-11
2.Noise Pollution	-1	-2	-2	-3	-8
3.Soil erosion	-2	-3	-3	-3	-11
4.Soil contamination	-1	-2	-2	-3	-8
5.Increase in accident incidences	-1	-3	-2	-3	-9
6.Increase in the spread of HIV/AIDS and other sexually transmitted diseases	-1	-2	-3	-3	-10
7.Increase in criminal activities	-1	-3	-3	-3	-10
8.Poor waste management	-1	-3	-3	-2	-9
9.Poor sanitation	-2	-3	-2	-2	-9

10.Land degradation	-2	-3	-2	-3	-10
IMPACTS DURING OPERATION					
POSITIVE IMPACTS					
1.Provision of modern and affordable student hostels and other facilities at the Mwanza Campus	3	3	3	2	11
2.Increase in performance of students academically as students will live close to the hostel and easily access college facilities	3	3	3	2	11
3.Improvement of the infrastructure	2	2	3	3	10
4.Improve security in the area	3	2	2	3	10
5.Creation of employment	3	2	3	3	11
6.Increase in economic activities in the project area	3	3	3	3	12
7.Increase in government revenue through taxes	2	3	2	3	10
NEGATIVE IMPACTS					
1.Increase in the spread of HIV/AIDS and other sexually transmitted diseases	-1	-2	-3	-3	-10
2.Increase in Criminal Activities	-1	-3	-3	-3	-10
3.Poor waste management	-1	-3	-3	-2	-9
4,Poor sanitation	-2	-3	-2	-2	-9
IMPACTS DURING DEMOLITION					
POSITIVE IMPACTS					
1.Employment Opportunities	3	3	3	3	12
2.Rehabilitation	3	2	3	2	10
NEGATIVE IMPACTS					

1. Soil Erosion	-2	-3	-3	-3	-11
2. Loss of employment	-1	-2	-2	-3	-8
3. Loss of income	-1	-3	-2	-3	-9
4. Solid Waste Generation	-1	-3	-3	-2	-9
5. Worker accidents and hazards during demolition	-1	-3	-3	-3	-10

Negative impacts with a high total score as presented in Table 14 are considered severe and should be accorded serious attention by the developer.

KEY;

+3	High positive impacts
+2	Moderate positive impacts
+1	Minor positive impact
-1	Minor negative impact
-2	Moderate negative impacts
-3	High negative impacts-

6.4 Impact Rating Criteria

Seven criteria were used to determine the significance of the impacts in the Matrix, these include:

6.4.1 Spatial Scale

The spatial dimension encompasses the geographical spread of the impacts regardless of whether they are short term or long term. Table below describes the ratings used in the Simple Matrix as far as spatial scale is concerned.

Table 18: Spatial Rating

International (I)	Trans-boundary
National (N)	Within country
Regional (R)	Within Region
Local (L)	On and adjacent to site

6.4.2 Temporal Scale

Temporal boundaries refer to the lifespan of impacts. Table below describes the ratings used in the Simple Matrix.

Table 19: Temporal Rating

Short-Term (ST)	during construction
Medium-Term (MT)	Life of project
Long –Term (LT)	Residual impacts beyond life of project

6.4.3 Phase

During which phase of the construction is the impact likely to occur. The phases included Mobilization, Construction, Demobilization and Operation.

6.4.4 Reversibility of the Impact

Every impact was checked if its effect can be reversed or not. Letter R was used to denote reversible impacts while IR was used to denote Irreversible impacts.

6.4.6 Cumulative Impacts

These are impacts that cause changes to the environment that are caused by an action in combination with other past, present and future human actions.

6.4.7 Residual Impacts

These are long term impacts which go beyond the lifetime of the project.

6.5 Description of Environmental / Social Impacts

6.5.1 Positive Social Impacts during Mobilization Phase

The mobilization phase will involve construction of temporary office facilities, a temporary store, kitchen, toilets, delivery of machinery and site equipment's, mobilization of raw materials, land clearing, excavation etc.

i. Creation of Employment Opportunities

During this phase, about 40 people will be employed by the contractor to do mobilization works. Both skilled and unskilled labour will be employed. This will increase the income to all those who have the opportunity to be employed by the contractor. In addition to that, there will be an increase of self-employment due to the higher demands and supply of various goods and services for people working in the project. For example, an increase in food vendors, *mama Ntilie* will be obvious to meet the increased number of the people working at this phase. *This impact is high, regional and will be long term.*

ii. Increased Market Opportunities and Sources of Income

The influx of people and particularly skilled and unskilled labourers in the area will provide an opportunity for local people to engage in some sort of business activities that will enable them to get more income compared to the previous time. The project will create a new source of income for both the people within Kiseke (service providers), communities surrounding the hostel and those from other areas interest. *This impact is high, regional and will be long term.*

6.5.2 Negative Social Impact during Mobilization Phase

i. Increased Level of Crimes

It is expected that the selection and design stage will recruit a considerable number of workers both skilled and non-skilled from the communities around and other from the nearby communities. In addition, the project will attract people from various areas to come and invest on the provisions of good and services. Although this stage is not expected to attract a big number of people, but population increase is expected to some extent and this in turn will stimulate the growth of the trading centres around the project site. Experience and sociological point of view show that where there is a big concentration of people from various backgrounds and behaviour, levels of crimes and changes in norms and behaviour are common. *This impact is moderate, localized and will be long term.*

ii. Prevalence of Communicable Diseases

Influx of job speculators from other parts of Tanzania and neighbouring regions will increase interaction, consequently increasing the risk of getting HIV/AIDS infections and other communicable diseases. The growth of trading centers in the area will attract different businesses and different people to the extent that the level of prostitution will also increase in the area provided that there will be employees from other areas of the country. Increased prevalence of communicable diseases like HIV/AIDS will likely to happen and consequently result to the increased number of orphans and single parenting in the project area. *This impact is moderate, local and will be long term.*

iii. Community Health and Safety Risks

During the site clearance, establishment of campsite, and trench excavation and casting of foundations will involve some activities that may rise in endangering the lives of the community members living close to those activities. This in turn will likely to endanger the lives of the local communities in form of accidents if appropriate measures are not taken. In the areas where raw materials will be taken like sand, stones and water accidents are likely to happen if appropriate measures are not taken on board. On the transportation of raw materials to the site, drivers may fail to observe safety measures along the road something that may result to accidents to other road users like pedestrian, motorcyclist, and bodaboda drivers.

This impact will be moderate and will affect the project communities of Kiseke as well as other local communities surrounding Ilemela Municipality. Furthermore, the impact will not be pilling up and no cumulative effects may be witnessed at the end of this phase. That, the impacts arising out of this are reversible in the sense that the same can be controlled upon strict use of road safety measures and occupational safety measures.

6.5.3 Negative Environmental Impacts during Mobilization Phase

i. Air Pollution

During mobilization dust is the main pollutant expected to be generated. Dust will be generated from various activities such as land clearing, excavation, and vehicles movement for transportation of materials to the project site. Dust will lead to increase in the background suspended particulate matter concentration of the area if proper measures are not adopted. However, this will be temporary and reversible in nature and restricted to small area for short duration taking the fact that the land will be developed has been previously disturbed.

ii. Noise Pollution

During site preparation, noise emission is expected to be primarily related to the operation of heavy equipment and related activities. The level of noise will increase mainly due to vehicles and equipment involved in excavation and site clearance. *This is a short-terms impact. There will be no blasting activities or involvement of heavy or high noise machinery.*

iii. Land Degradation

Most of the building materials such as stones, aggregates, and sand required for construction of the proposed project will be obtained from nearby quarry sites and borrow pits. Since substantial quantities of these materials will be required for construction of the development, the availability and sustainability of land resources at the extraction sites will be negatively affected as they are not renewable in the short term. In addition, the sites from which the materials will be extracted may be significantly affected in several ways including landscape changes, displacement of animals and vegetation, poor visual quality and opening of depressions on the surface leading to several human and animal health and safety risks. *The impact can be highly improved/eliminated with mitigation. Therefore, the impact is negative and of low significance.*

iv. Solid Waste Generation

During mobilization phase solid waste such as excavated soil, waste from the papers used for packing cement, plastics, timber remains, aggregate products, concrete and gravel are anticipated to be generated.

6.5.4 Positive Social Impacts from the Construction Phase

Activities that will be carried out during this phase will include, land clearing, platform preparations, digging foundations, construction of buildings, and drainage works. There will also be lots of construction vehicles that will be bringing construction materials to the site.

i. Creation of Employment Opportunities

Approximately 5% of the national population are formally employed were from Mwanza region according the Employment and Earnings Survey 2012. Construction activities will include land clearing and leveling using excavators and graders, construction of hostels, car park, septic tanks and drainage systems. During construction of the proposed project, there will be employment opportunities for both professionals and unskilled workers. Several workers including casual labourers, masons, carpenters, joiners, plumbers, electricians and engineers are expected to work on the project from the start of the project to the end. Semi-skilled, unskilled labourers and formal employees are expected to obtain gainful employment during the period of construction. With labour intensive construction technologies, the project will provide employment for youths and provide support to the Government of Tanzania initiatives on creation of jobs though on short term. The creation of employment opportunities is beneficial both from the economic and social point of view. *The impact is considered positive, short term and of moderate significance.*

ii. Increase in the Market for Local Construction Materials

The construction of the students' hostel facility will entail the purchase of construction-related materials such as cement, sand, quarry, and timber iron sheets. This will create an opportunity for traders to sell their products.

iii. Increase in Business Activities within the Project Area

The presence of construction workers at the project site will create an opportunity for small-scale businessmen and women to sell food stuffs, refreshments and to open barbershops and grocery shops.

6.5.5 Negative social Impacts from the Construction Phase

i. Occupational Health and Safety Hazards

The road that will be used by vehicles bringing construction materials is also used by other road users. People crossing the roads may be hit by such vehicles. Because of the intensive engineering and construction activities including erection and fastening of roofing materials, metal grinding and cutting, concrete work, steel erection and welding among others, construction workers will be exposed to risks of accidents and injuries. Such injuries can result from accidental falls from high elevations, injuries from hand tools and construction equipment cuts from sharp edges of metal sheets and collapse of building sections among others. *This impact is considered to be direct negative, short-term and of high significance.*

ii. Increase in the Spread of HIV/AIDS and Other Sexually Transmitted Diseases

To Tanzania, Demographic Health Survey (TDHS) of 2014, the prevalence of HIV among adolescents (10–19 years) is estimated to be 6%. In Mwanza urban studies have shown that the prevalence of HIV infection among the over 18 years old people is 8.6%. As the project will bring migrant workers, traders as well as local workers with more money from the wages and sales in the project area. This can promote unacceptable unions that will contribute to the increase in the spread of HIV/AIDS and other sexually transmitted diseases in the project area. *Therefore, the impact is negative, short - term and of high significance.*

iii. Increase in Criminal Acts

Along the project site the level of crime is low compared to other places. The influx of people to the project area may attract people with bad intentions who can create havoc within the project surrounding areas. There may also be conflicts between the migrant workers and the locals that may culminate into violent acts. *Therefore, the impact is negative, short – term and moderate.*

iv. Gender-Based Violence

The social-cultural relationship in the project may imply gender-based violence. Gender-based violence is violence directed against a person because of their gender. Both women and men experience gender-based violence but the majority of violence is inflicted on women and girls, by men. Many forms of violence against women are rooted in power inequalities between women and men. *This impact is minor, localized and cumulative.*

v. Impact Associated with Child Labour

Half of Tanzania's population is below 18 years of age. About 4.2 million children aged 5 - 17 are engaged in child labour family helper. More girls than boys work in vulnerable situations (e.g. domestic services). The number of children engaged in informal sector activities is estimated to be 1,703 in Mwanza. There is a risk that some project-related activities could involve child labour - employment of children in project activities depriving children of their childhood and that is mentally, physically, socially or morally dangerous and harmful. The Labour Management Plan may need to be provided that no one under the age of 18 may be employed or engaged in connection with the project. *This impact is minor, localized and will be short-term.*

vi. Impact Associated with Gender Discrimination

The proposed project may cause men to treat women, unfairly because of their sex. This might lead into more project benefits to men than women. Tanzania regulations encourage equal opportunities to men and women. *This impact is minor, localized and cumulative.*

vii. Traffic Density

The project will come along with increased (vehicle) traffic along the connecting routes especially during the construction phase. *The impact is considered to be direct, long-term and of medium level.*

viii. Community Health, Safety and Security

Due to technological developments and investment in labour saving equipment, the skilled and non-skilled workforce will be needed. The skilled construction workers will be imported to the area of construction and will reside in labour camps. A smaller number of local low-skilled jobs may be envisaged. These will include protection and guarding of the construction companies' properties. Low skilled workers will be hired around the project jurisdiction if necessary.

It is expected that the increased number of workers and higher concentration of residents near construction sites will have negative impact on local communities. Uncontrolled movement of workers will affect residents around the settlements. Due to this, workers must receive training and sign a labour code of conduct. With an increase in construction activities and the possibility of job seekers arriving, it may be more difficult to identify strangers in the community. In addition, the increase in cases of diseases like COVID-19 and HIV/AIDS associated with the entry of a temporary labour force into community could also occur. There may also be negative issues that need to be managed such as increases in local prices, crime, prostitution or alcohol abuse.

The presence of a large number of workers can give rise to an increase in spread of communicable diseases. Also, construction of the project shall definitely be accompanied by in-migration of job seekers and opportunistic businesses and speculators. This will bring many people in the project areas. This will increase social interactions amongst the construction workers and local communities. This among other factors may produce an inherent increased risk of incidences of sexually transmitted diseases, HIV/AIDS and other contagious diseases taking into consideration that the project will be implemented within the hostel.

In addition, during the construction phase risks related to public safety and the construction workers may increase. Increased traffic volume related to construction activities will contribute in increasing road accident risks especially on local roads, which will be used by trucks and construction equipment of the contractors. Construction vehicles and machines will pass through public roads and as such residents of local settlements located along these roads will be exposed to increased risks for accidents. The sources of harmful effects to the general public are identified in below. *This impact is moderate, localized and will be long term.*

Table 20: Sources of the harmful effects on health and community safety.

Type of harmful effect	Sources of the threat
Accident risk	<ul style="list-style-type: none"> • During excavation work • Movements and operations of heavy equipment • Access to danger zones • Transport, handling and storage of the materials • Concrete batching and mixing plant
Indirect health risk	<ul style="list-style-type: none"> • Environmental pollution • Contamination of water or/and food

6.5.6 Negative Environmental Impacts from the Construction Phase

The ESS3 ‘Resource Efficiency and Pollution Prevention and Management’ recognizes that development projects often generate pollution to air, water, and land, and consume finite resources that may threaten people, ecosystem services and the environment. Impacts caused by pollution are described hereunder:

i. Air Pollution Due to Dust Emission

Measurement done in four locations around the proposed sites indicated that PM_{2.5} and PM₁₀ concentrations were between 4 µg/m³ and 12 µg/m³; and between 9µg/m³ and 23 µg/m³ respectively, as shown in Chapter 4, section 4.10.2. These ranges are below WHO and Tanzania Emission Limits. During the construction phase air quality is expected to decline as a result of an increase in levels of fugitive dust from the construction activities mainly due to vegetation clearance, foundation excavation and movements of heavy machinery. This may cause localized temporary disturbance to workers at construction sites and areas where sand and aggregates will be collected. Respirable particulates are a public health hazard and may otherwise create considerable nuisances to the public and fauna. The overall magnitude of the impact of the project is negative, temporary (only during construction phase) and high in significant taking into consideration that the projects will take place inside the hostel area. Potential sources of dust at the site and off site are summarized below. *This impact is moderate, localized and will be short term.*

Table 21: Project activities and Impacts

Activity	Source of production of dust
On-site building work producing dust and gaseous emissions	
Clearance and terracing of the site	<ul style="list-style-type: none"> i. Earthworks ii. Initial soil spreading after excavation. iii. The movement of construction traffic and movement of materials iv. Stored materials subjected to wind action
Excavation	<p>The important sources are:</p> <ul style="list-style-type: none"> i. Movement of traffic construction vehicles ii. Handling and storage of waste iii. Excavation and transport of materials and on-site storage
Building Foundations	<p>The important sources are:</p> <ul style="list-style-type: none"> i. Foundation excavation ii. Movement of construction traffic iii. Handling and the storage of waste iv. Excavation and transport of materials and on-site storage
Building Works	<p>Movement of traffic of construction vehicles.</p> <p>Potential of a certain strongly localized harmful effect like dust inhalation if the completion of work requires “smoothing and sanding” of the wall to obtain a desirable completion.</p>
Auxiliary work -	
Off-site building work producing dust	
Material transportation	<p>Any movement of traffic on unpaved roads</p> <p>Surface materials brought by the wind</p>
Aggregate mixing unit	<p>Stored materials</p> <p>Filtering and other methods for processing construction materials</p> <p>Handling of materials (loading output)</p> <p>Traffic congestion</p>
Tool maintenance course	<p>Materials on the surface brought by the wind</p> <p>Traffic of construction</p>

ii. Noise Pollution

Measurements done in different locations around the proposed project sites indicated that the daytime noise levels ranged between 43.35 dB (A) and 57.4 dB (A). Tanzania Standard limits (TZS) guidelines require noise emission levels to be less than 55 dBA during the day within residential/institution areas.

This implies that the noise level is slightly above the range by 2.4dBA. The proposed project activities will inevitably increase noise level. Noises from vehicles, equipment, construction crew, etc. may rather be significant. Noise beyond some level (70dBA) is itself a nuisance and need to be avoided. Due to an increase in activities and number of operational vehicles, the impacts of noise will cause disturbance to normal institute operations especially due to the construction of the proposed studio building. This impact shall not be significant to projects to be implemented at the high zone of the hostel as to a great extent are far away from busy hostel activities. *The impact of the project on noise level generation short-term, local and moderate.*

Operation of heavy construction machinery and vehicle movements would generate a lot of noise which could be a nuisance to workers and people staying close to the project site. Noise can create stress and can be a hazard within the project site since it can make it difficult for workers to communicate or hear warning signs. *This is a short-term impact. There will be no blasting activities or involvement of heavy or high-noise machinery.*

iii. Soil Erosion

The land on which this project will be developed is slanting slightly towards the North. This situation is likely to cause erosion. The soil will be exposed once the vegetation has been cleared resulting in soil erosion. The other sources include topsoil stripping during land preparation and construction works. *It is expected that the impacts will be low, local, and they will occur mostly during the construction stage (short term).*

iv. Soil Contamination from Oil and Fuel Spills

Construction works will involve the use of heavy machines such as graders, tractors, tippers and vehicles. Oil and fuel spills from these machines could contaminate soils within the project site. *This impact is localized around machinery, maintenance areas or garage and areas of concentrated activities.*

v. Environmental Pollution from Poor Management of Solid Waste

Construction rubble, scrap metal, used oils and domestic wastes will be produced and accumulated within the project site. This waste will negatively impact the aesthetic value of the site and surrounding environments if not properly managed. Current there is no management of waste as the area is not yet built with hostel structures. *The impact is considered to be direct. Improper management of construction waste constitutes a long-term negative impact.*

vi. Environmental Pollution from Poor Management of Wastewater

Waste water to be generated includes grey and black water from toilets. This wastewater would negatively impact the site and surrounding environment if not properly managed and disposed at an approved site. Wastewater, if poorly managed will result into eruption of waterborne diseases as it may contaminate clean water sources. *With appropriate mitigation, the impact is considered to be indirect, long term and insignificant.*

vii. Increased Vibration

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. The vibration will be produced by construction vehicles, plants and machinery during the delivery of materials, processing of materials, and actual construction work. The Construction activities that typically generate the most severe vibrations are blasting and impact pile driving for the foundation. Due to an increase in activities and the number of operational vehicles, the impacts of vibration include causing disturbance to neighbours and physical damage to properties near the construction site. *This impact is direct, moderate, localized and will be short-term.*

viii. Contribution to Climate Changes

The project will contribute to climate change in two ways. Firstly, it will be through generation of Green House Gas emissions (SO_x, NO_x, CO_x, VOCs). Secondly, the project is expected to reduce Carbon dioxide sequestration due to reduction of vegetated area of the hostel.

ix. Increased Greenhouse Gas Generation

According to the ESS1, the current and projected atmospheric concentration of greenhouse gases (GHG) threatens the welfare of current and future generations. The construction of the proposed buildings will most likely be associated with greenhouse emissions from cars, equipment, plants etc. Various internal combustion engines will release Greenhouse gases notably carbon-dioxide (CO₂), small quantities of noxious gases such as Nitrogen Oxides (NO_x), Sulphur Oxides (SO_x) and hydrocarbons. The generation and emission rate will depend on equipment type, road condition, speed of vehicles, quantities of equipment, duration, and prevailing atmospheric conditions, particularly wind and moisture of the air. The main source of emission of atmospheric pollutants will emanate from mobile sources-the exhaust engines (trucks/tipper, wheel loaders). Table 27 shows the emission factors of the various construction equipment and vehicles, and approximated emissions.

Table 22: Emission of construction equipment and vehicles

S/N	Type	Quantity	Emission factors (Giunta <i>et al.</i> , 2019)		Total Emission	
			CO - g/hp-hr	NOx - g/hp-hr	CO g/day	NOx g /day
1	Excavator	1	0.75	4.31	0.34	1.90
2	Bulldozer	1	0.94	4.67	0.42	2.09
3	Trucks	5	11.24	15.27	25.12	34.13
4	Motor grader	1	0.75	4.31	0.34	1.90
5	Compactor	1	0.94	4.67	0.42	2.09
6	Crane	2	170	260	340	520

Data collected around project sites indicated that all values are below WHO guidelines and Tanzania Emission Limits. Gaseous emissions are expected to increase due to construction activities, equipment and vehicle movements, hence contributing to climate change which has various global impacts. However, emissions from stationary emission sources are estimated to be far less compared to the mobile source emissions.

Thus, the contribution of emissions from stationary source to cumulative emissions by mobile sources is projected to be negligible. The level of the emissions of the precursory pollutants and the atmospheric pollutants from mobile sources will vary from day to day, according to the type of activity done. However, even if the impact is very limited in time, it does not remain the same depending on the weather conditions. Of this fact the intensity of the impact of the building construction on air pollution especially by mobile emissions is evaluated to be negative, cumulative, global, short term and moderate as there are hundreds of vehicles plying in Kiseke roads which emit same air pollutants. *This impact is moderate, international and will be long term.*

x. Reduction of CO₂ Sequestration Potential

The ESS1 recognised CO₂ sequestration potential as one category of the Ecosystem Services (i.e. regulating services). Vegetation clearance during construction activities will reduce the CO₂ sequestration process hence reduction of global efforts towards climate change mitigation. *Hence, this impact is minor, international and Long-term.*

6.5.7 Positive Social Impacts from Operation Phase

i. Increase of Admission of Students to Mwanza Campus

The proposed project will provide adequate and affordable housing to the enrolled students. These will increase the admission of students from high schools and other colleges as a result access to higher education will be enhanced for the benefit of the country etc. *This impact is direct, high, and national and will be long-term.*

ii. Provision of Modern and Adequate and Affordable Student Hostel Facility to the Student in Mwanza Campus

Before the project, IFM Mwanza campus used the rented private buildings for hostel and teaching classes. This project would bring many benefits to the student and IFM management as whole as they will move from using rented facility to using their own buildings. The hostel will be affordable to the enrolled students which will also be near the learning facilities. *This impact is direct, positive, long term and of high significance.*

iii. Increase in Performance of Students Academically as Most Students Will Live Close to the Campus and Easily Access College Facilities

Due to the proximity of the student's hostels to the learning facilities, there will be an increase in the performance of students academically. The travel time will be used for learning and reading. *This impact is direct, positive, long term and of high significance.*

iv. Improve Security in the Area

Security will improve in the area due to the coming in of the project as the site was idle and outgrown with vegetation. *This impact is direct, positive, long term and of high significance.*

v. Creation of Employment

Several workers will be employed in various sections during the operation of the project. There will be employment opportunities for both skilled and unskilled labourers during the operation phase. *This impact is direct, positive, long term and of high significance.*

vi. Improved Access to Social Services by the Local Community

The operation phase of the project will facilitate the introduction of electricity, potable water and access to an improved road network. The community can have access to these facilities and improve their living standards. *This impact is direct, positive, long term and of high significance.*

vii. Increase in Economic Activities

The operation of the hostel will provide local traders to sell foodstuffs like fruits, sugarcane, groundnuts, fresh, cooked and roasted maize, and vegetables to students and workers. There will also be an opportunity to supply foodstuffs for student meals. *This impact is direct, positive, long term and of high significance.*

viii. Increase in Revenue by the Government Through Taxes

Employees and the people supplying goods and services at the project site will be paying taxes that will be remitted to TRA. *This impact is direct, positive, long term and of high significance.*

6.5.8 Negative Social Impacts from Operation Phase

i. Increase in the Spread of HIV/AIDS, COVID 19 and other Sexually Transmitted Diseases

Interaction among students with workers and the neighboring community may result in unacceptable unions that may increase the spread of HIV/AIDS, COVID 19 and sexually transmitted diseases. *This impact is indirect, negative, long term and of high significance.*

ii. Increased in Level of Crimes

Along the project site the level of crime is low compared to other places. After completion of the construction and starting operation the presence of the project may attract thieves trying to steal student property. These may also end up stealing from the surrounding communities. Conflicts may arise between students and the surrounding communities that may culminate into violent acts. *The impact is indirect, long term and significant.*

iii. Increased Energy Demand

Currently at the proposed project site there are transmission lines passing which connects the electricity from TANESCO. There will be increased use of energy operation phase (electricity used by the occupants of the housing project). Energy conservation is thus fundamental. Energy conservation involves optimum use of petroleum products (diesel and gasoline), electrical appliances (equipment), lighting systems and other electric machinery as used for different purposes. It also includes use of renewable energy sources. *This impact is considered to be direct, negative, long term and of high significance.*

iv. Increased Water Demand

Currently the proposed project site has no any building or structures elected that use water. During the operational phase, the demand for water will also be high; mostly for domestic use. Lack of adequate water during the operational phase may result to dirty surfaces exposing the residents to disease. The

subject plot will be served by the conventional water supply system. With appropriate mitigation measures the impact is considered to be insignificant but direct and of long-term.

6.5.9 Negative Impacts on Physical Environment from Operation Phase

i. Environmental Pollution from poor management of Solid Waste

There will be a total of 280 students and about 20 employees when the hostel is operating at full capacity. These will generate a lot of trash such as domestic waste. *Poor solid waste management constitutes negative impacts, of short-term duration and of high significance.*

ii. Environmental Pollution from Poor Liquid Waste Management

Effluent/sewage resulting from areas such as sanitary facilities is of significant concern concerning the environment. It should never come into contact with the surroundings i.e. water, soil, air etc. to avoid disease outbreaks such as cholera, and diarrhoea. It should always drain effectively into the sewerage systems via well-designed (closed) and laid pipe networks. For this particular project, the proponent will construct a septic tank. *The impact is direct, long term and significant*

iii. Environmental Pollution from Mismanagement of Hazardous Waste

Several numbers of hazardous waste such as sanitary pads, cleaning detergents are expected to be generated during the operational phase of the hostel. If these are not properly managed they will pollute the environment of the hostel. For this particular project, the proponent will construct an incinerator. *The impact is direct, long term and significant.*

iv. Increased Surface/Storm Runoff Generation

The drainage of the general site comes in handy to enhance the effective flow of the much-anticipated surface run-off emanating from the roof catchments and other impermeable areas within the site. The subject plot lies on a gentle slope; during the operation phase, there is a risk of flooding on the lower part of the plot since a large section will be covered by a hardscape.

v. Risks of Fire Hazards

Fire causes both economic and social drawbacks. If not contained in time fire outbreaks may result in injuries, loss of human life and air pollution beyond the boundary of the project area. It is therefore important to consider the issue of fire. *This impact is considered to be indirect, negative and of high significance.*

vi. Contribution to Climate Change

During the operation phase, the proposed project will have both direct and indirect CO₂ emissions to the atmosphere hence contributing to climate change. The indirect emissions come from the use of electricity,

water, forestry products (Paper and timber) and consumption of food stuffs. Thus, materials consumed at IFM Hostel will have potential contribution to climate change through CO₂ emissions which cannot be realized by eyes onsite and offsite. During project implementation, people will use more resources due to technological advancement and the modernization. *This impact is moderate, international and will be long term.*

6.5.10 Positive Social Impact from Decommissioning Phase

i. Employment Opportunities

The demolition phase will require several people in demolishing the existing building and infrastructures, collect wastes generated and rehabilitate the area. Among others, the following staff will be directly or indirectly linked to the project: Supervising Engineering team, Ecologist, Environmental Officer, Electrical Engineer, Water Resources and Plumber Engineer, unskilled labour force and other essential services and monitoring personnel from various government institutions (NEMC and OSHA). *This is considered to be of short-term with high significance.*

6.5.11 Negative Social impacts from Decommissioning Phase

i. Loss of Employment

Demolition of the proposed project will result to the loss of employment to a good number of people including, security personnel, warden, and cleaners etc. who were employed by the developer. This loss will be significant at individual level and at the national level, especially as national policies seek to create more jobs. *This impact is direct, negative, long term and of high significance.*

ii. Loss of Income

The loss of employment as a result of decommissioning process will impact negatively the lifestyle and quality of life of the people. Mostly affected ones are the workers who were working at the project also, business vendors who were depending on delivering goods such as food, drinks, and fruits to the students. Lack of proper measures to deal with the effects of losing a job can make life of the workers more difficult socially, psychologically and economically. So the developer has to timely pay the pension/terminal benefits of workers. *This are considered to be of the short term with high significance.*

iii. Workers' Accidents and Hazards during Demolition

During the demolition of the proposed project, it is expected that workers are likely to have accidental injuries and hazards as a result of falls, slipping, crane accidents, scaffolding accidents, workers being run over by operating equipment, electrical accidents, trench collapses, fires and explosions, and welding

accidents also handling of hazardous waste. *With proper mitigation measures the impact is indirect, short term and insignificant. Hence the impact is considered to be a direct and short-term impact.*

6.5.12 Positive Environmental Impact from Decommissioning Phase

i. Rehabilitation

Upon decommissioning, rehabilitation of the project site will be carried out to restore the site to its original status. This will include the replacement of topsoil and vegetation that will lead to improved visual quality of the area.

6.5.13 Negative Environmental Impacts from Decommissioning Phase

i. Soil Erosion

Decommissioning will involve demolition of structures, management of spoil material and trucking them from the site. This would require more trucks to do the work, which may result in soil erosion and increased levels of dust. Heavy trucks moving between the site and the dumping place may also cause vibration that may result in accelerating soil erosion. *This impact is direct, negative, short term and of medium significance.*

ii. Increased Solid Waste Generation

Demolition of the proposed development will result in large quantities of solid waste. The waste will contain the materials used in construction including concrete, metal, drywall, wood, glass, paints, adhesives, sealants and fasteners. There is growing evidence that large quantities of such waste may lead to the release of certain hazardous chemicals into the environment. In addition, even the generally non-toxic chemicals such as chloride, sodium, sulphate and ammonia which may be released as a result of leaching of demolition waste, are known to lead to degradation of ground and surface water quality. Hence the impact is considered to be direct and short-term impact. *This is considered to be of short-term with high significance.*

iii. Dust and Gases Emission

Large quantities of dust will be generated during demolition works that have an effect on the health of the workers and impact the visual of the area. Also, various machinery to be used for the demolition of the proposed project and trucks to carry the debris out of the project site will emit exhausts gases including carbon monoxide, carbon dioxide, sulphur and nitrogen gases which have a direct effect on the health of people within the park and wild animals, in addition to that plants are also affected by some of these gases. *The impact is direct short term and significant.*

6.6 Cumulative Impacts

Cumulative impacts are impacting that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. They occur when impacts from the proposed project have an additive effect on the impact resulting from existing major facilities, or reasonably foreseeable future projects within the project area. Cumulative impacts identified for the proposed project are presented below for each scenario.

6.6.1 Increase in Volume of Traffic

An increase in traffic volume may result from the increased number of trucks going into the proposed project. This impact will add to the problem of traffic on the road leading to the site. To manage this impact, the proponent will employ security guards who will be instructed to control traffic along the private road leading to the site and assist vehicles as they enter and exit the project site.

6.6.2 Socioeconomic Issues

The cumulative impact on the Tanzania and Mwanza economy will be a strongly positive one. Significant additional resources will be realized by the result of this project, which is consistent with the government's long-term development plan. The additional licensing income, among other sources of additional income, will add to the already increasing government revenues and economic growth resulting from expanded and diversified business development in Ilemela District Council.

6.7 Consideration of Project Alternatives

Consideration of project alternatives is crucial in ensuring that the developer and decision-makers have a wider base from which they can choose the most appropriate option. In this Environmental Impact Statement, the following alternatives were considered and examined in detail during the EIA process.

6.7.1 No project Alternative

This alternative would mean that the project does not proceed. It entails retaining the current status quo of the site.

a. Advantages

- The natural ecosystem will remain undisturbed.
- Air pollution from dust as a result of the construction process will not occur.
- There wouldn't be soil compaction as a result of heavy machinery use.
- There will be a reduction of soil erosion due to less loosening of soil on the surface.
- There would be no soil or water contamination from the alien materials that will be introduced in the system.

b. Disadvantages

- The HEET project aims to revitalize and expand IFM's capacity in key areas crucial for Tanzania's transition to an industrialized, knowledge-based economy. The no project scenario would not address this critical need.
- There will be no creation of employment.
- The expected income to the developer and the economy will not be realized.
- The value of land might improve but it will remain underdeveloped.
- There will be stagnant development among the local community.
- The campus will continue experiencing shortage of accommodation facility

6.7.2 Develop the Project Alternative

The alternative was considered assuming that construction of the project facilities will proceed as proposed. The alternative will induce several environmental and socio-economic impacts both positive and negative.

a. Advantages

- Increased employment opportunities at local and national level especially during construction phase
- Creation of market for goods and services
- Increased economic activities within the project area
- Skills transfer to different people at local and national level
- Improved students' housing conditions

b. Disadvantages

- Loss of vegetation due to land clearance during construction
- Increased waste generation (solid and liquid) from construction camps and construction sites
- Population influx due to migration of construction workers to the site
- Social disruption and family instability due to influx of people to the area
- Generation of construction waste
- Construction related accidents
- Increased burden on and competition for public service provision

6.7.3 Alternative Source of Water

Water Supply Alternatives Reliable access to suitable quality water is critical to supporting the water demands of the proposed hostel building. The project proponent therefore evaluated three main alternatives for securing water supply:

i. **Alternative one;** Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA)

This is the main source of clean and portable water in Mwanza, Ilemela Municipality. However, reliance on a single utility poses risks if the network experiences disruptions.

ii. **Alternative two;** Drilling of Boreholes

This could ensure a locally controlled source. However, upfront drilling and treatment system costs are involved. Seasonal yield and quality variations may also occur without robust investigation and monitoring. However, this option will impact nearby boreholes due excessive abstraction.

iii. **Alternative three;** Rainwater harvesting

This offers a supplemental local source reducing overall demand on district supply. A storage and collection system would need designing and constructing. Quantity harvested depends on unpredictable rainfall patterns.

From the findings of this study, water from Mwanza Urban Water Supply and Sanitation Authority (MWAUWASA) will be the main supplier. Other sources including rainwater and borehole will be used.

6.7.4 **Alternative Energy Sources**

IFM considered various energy alternatives for powering the proposed project. Reliable access to energy is critical for running educational facilities. The main alternatives assessed were:

i. **Alternative 1;** National grid electricity: Electricity supply from Tanzania's national grid (TANESCO)

This is unreliable due to dependence on hydropower which fluctuates with rainfall patterns. Outages are common. However, grid connection provides the largest power capacity at the lowest cost.

ii. **Alternative 2;** standby generators

Diesel generator option can be employed as backup during power blackout. However, diesel has significant environmental drawbacks as a fossil fuel that emits greenhouse gases, especially over prolonged usage. Close to 100% fuel utilization also raises operating costs.

iii. **Alternative 3;** Solar photovoltaic power:

Solar energy harnesses abundant local solar resources with zero emissions. Solar panels could provide lighting and supplementary power. But solar capacity alone may be insufficient to meet the high energy demands of laboratories requiring extensive equipment operation. Installation and maintenance costs are also higher than conventional grid electricity initially.

Based on these options, Alternative 1 is the preferred option and this can be supplemented by solar power and/or standby generator.

6.7.5 Solid Waste Management Alternatives

The proposed project is expected to generate a considerable amount of solid waste on a daily basis. Proper management of this waste will be critical to minimize negative environmental and health impacts. Three primary alternatives for managing the solid waste – landfilling, burning and an integrated waste management approach were identified.

i. Alternative 1; Landfilling

Landfilling large volumes of mixed, untreated waste results in the loss of valuable resources that could otherwise be recovered through reuse, recycling and recovery (3Rs). It also poses environmental and social risks at the disposal site through pollution of air, soil and water resources from leachate and methane emissions over time. Regular transportation of waste also implies ongoing operational costs and carbon emissions from vehicle movements. As solid waste management is not a revenue-generating activity, such an approach would become a financial burden on the campus budget requiring allocation of funds on an indefinite basis.

ii. Alternative 2; Open Waste Burning

Burning waste is usually an environmentally poor waste management option because potential resources are lost and it can cause air, land and water pollution.

iii. Alternative 3; Integrated solid waste management system

An integrated waste management approach is proposed as a more viable long-term solution that addresses waste in a holistic manner from generation to final disposal. The key elements include source reduction and segregation of waste, maximizing reuse and recycling wherever possible. Organic waste would be converted to compost for use on campus. Non-recyclable fractions could be used to generate energy through waste-to energy technologies like biogas. Residual waste after extraction of resources would be temporarily stored on-site before infrequent transportation off-site, minimizing transportation needs and costs.

By adopting the principles of reduce, reuse and recover resources, Alternative 3 offers significant environmental and financial benefits compared to landfilling and open waste burning. It supports the waste management hierarchy and a circular economy model in a sustainable manner suited to the institute context. With proper implementation, this integrated approach can holistically address the waste challenges posed by the new development in an environmentally sound and cost-effective way.

6.7.6 Liquid Waste Management Alternatives

Four alternatives were considered for managing liquid waste:

i. **Alternative 1;** Use of septic tank and soak away pit.

Septic tanks are low-cost option, the main disadvantage is that they need periodic emptying, and this could raise the operation cost over time. With the large volume of effluents that will be discharged from the project during operation, the septic tanks will need to be emptied regularly.

ii. **Alternative 2;** Use of stabilization ponds/lagoons.

This refers to the use of a series of ponds/lagoons which allow several biological processes to take place, before the water is released back to the water body. Speaking of space this method requires a large field for natural treatment to take place which is not available at the proposed building site. Furthermore; lagoons will present vulnerable situations due to trespassers. They are usually a nuisance to the public because of smell from the lagoons/ponds. However, with strict and professional management, they are the most economical and environmentally sound in the long term.

iii. **Alternative 3;** Constructed wetlands

This is an engineered system designed and constructed to copy natural processes taking place in the natural wetlands. Constructed wetlands remove pollutants in wastewater through the combination of physical, biological and chemical processes. They are either subsurface flow where the flow is below the surface of soil or surface flow where the flow of wastewater is above the soil.

iv. **Alternative 4;** Anaerobic waste water treatment plant

Such as;

- One Up-flow Anaerobic Sludge Blanket (UASB) + Anaerobic Biogas Reactor (ABR)
- Two Fixed Dom Chinese Biogas Reactors + Anaerobic Biogas Reactor (ABR) System.

a. Advantages of UASB

- High organic loading capacity
- Short HRTs
- High COD removal efficiency
- No need for support media

b. Advantages of Chinese Biogas Reactors + Anaerobic Biogas Reactor (ABR) System

- Biogas is eco-friendly
- Biogas generation reduces soil and water pollution
- Biogas generation produces organic fertilizer
- It's simple and low-cost technology

In conclusion, given the space limitations, high water table and regular emptying, Anaerobic waste water treatment plant is recommended as the most feasible and sustainable liquid waste management alternative for the proposed project.

CHAPTER SEVEN

IMPACT MITIGATION/ ENHANCEMENT MEASURES

7.1 Introduction

This part provides measures or interventions that shall be implemented for minimizing the negative impacts and enhancing the positive impacts identified in the preceding chapter. Many of the mitigation measures put forward are engineering practice that shall have to be adhered to in all project phases.

Table 23; Impacts mitigation / enhancement measures

Positive Social Impact during Mobilization /Construction Phase		
SN	Impacts	Enhancement Measure
1	Benefits to Communities Resulting from Employment	<ul style="list-style-type: none"> - The proponent shall be encouraged to employ local, unemployed yet willing to work hard, manpower to the extent viable subject to a maximum of 50% unskilled labour. This will ensure that local people in Kiseke ward are more benefited out of the project; - Employment should be on equal opportunities for both gender; - Proponent shall provide on job and safety training; and - Proponent shall not cause children under the age eighteen (18) to be employed or be engaged in any project activities.
2.	Increased market opportunities and sources of income	<ul style="list-style-type: none"> - Designating an area as a market close to the project site.
Negative Social Impact during Mobilization /Construction Phase		
SN	Impacts	Mitigation Measures
1	Increased Level of Crimes	<ul style="list-style-type: none"> - Construction of police station in order to strengthen security services within the hostel and the surrounding community - Establish community-based security in collaboration with village/ward leaders. - The contractor shall establish his own security to protect his properties and should establish community policing

		<p>to support insufficient police force.</p> <ul style="list-style-type: none"> - The community should be encouraged to participate in security matters by providing information on suspects - The cooperation of local people together will help to lessen criminal incidents and maintain security of people and their properties. - Participatory community security measures should be encouraged in the surrounding communities of Kiseke Ward
2	Prevalence of Communicable diseases	<ul style="list-style-type: none"> - Provide awareness to public on pathways communicable diseases; - Provide Voluntary Counselling and Testing (VCT) centres for HIV/AIDS at IFM and the surrounding communities; - Provide more health facilities; - Work close to government and private institutions that deal with the spread of communicable diseases
3	Gender Based Violence	<ul style="list-style-type: none"> - The project will prepare a GBV and Sexual Harassment Action Plan that ensures project awareness raising strategy (for workers and community members), a list of GBV service Providers to which GBV survivors will be referred, revisions to the GRM to ensure it can address GBV complaints, and information on GBV/SEA/SH allegation procedures in the workplace
4	Gender Discrimination	<ul style="list-style-type: none"> - This project will ensure that there is involvement of women in project activities.
5	Child Labour	<ul style="list-style-type: none"> - IFM will conduct regular monitoring of project workers in relation to health, working conditions, hours of work, minimum age, and the other requirement of national law. - Work with local authorities and schools in the area to control school drop out - Cooperate with relevant authorities like Ministry of Labour to control child labour

		<ul style="list-style-type: none"> - Create awareness raising to the communities on the importance of education to the children - The local authorities should develop bylaws to control the engagement of children in petty business or work in project related activities
Negative Environmental Impact during Mobilization /Construction Phase		
SN	Impacts	Mitigation Measures
1	Air pollution	<ul style="list-style-type: none"> - Regular maintenance of all equipment on site will be conducted as a way of reducing emissions of noxious gases. Equipment maintenance will be undertaken in accordance with manufacturer’s instructions and at the specified maintenance interval; - Adequate training and use of personal protective equipment (PPE) such as eye goggles and dust masks will be ensured in order to reduce risks associated with dust. Also, during material transport, trucks used for that purpose will be fitted with tailgates that close properly and with tarpaulins to cover the materials so that there is no loss of dust visible more than 2m from the emission source; - Also, on loading one inch will be left on top of the truck to avoid accidental spillage of materials; - Stockpiles of soil and vegetative debris generated during site clearing activities shall be monitored and maintained to eliminate generation of fugitive dust. - These materials will be kept at designated area that will be secured and material covered with water proof nylon material to avoid dust generations; - Equipment and vehicles shall be properly maintained in a fully serviceable condition to further Minimize gases pollution; and - Inspect roads daily for dust generation and sprinkle for dust suppression when needed.

2	Noise pollution	<ul style="list-style-type: none"> - Noise levels in the project area and receptors communities shall be monitored and recorded to ensure that activities at the site are not exceeding standards; - Workers will be provided with personal protective equipment (PPE) such as ear plug/muffins/masks during construction and especially workers working in noisy areas; - Concrete mixing will be done away from existing buildings area; - Additionally, work will be carried out only during the day; - Vehicles and equipment will be maintained and serviced as required to ensure they do not generate excessive noise; - Trucks carrying construction materials shall be restricted during day hours; - Operators of machines with significant noise levels in various sections shall be provided with noise protective gears; - Construction equipment shall be selected, operated and maintained to minimize noise; - The workforce shall be educated on the issue of maintaining tranquillity; - Strict instructions should be given for drivers of heavy equipment; and - Communication line must be ensured in between workers and drivers of heavy equipment.
3	Land Degradation	<ul style="list-style-type: none"> - Exploitation of construction materials will take place from authorized sources only; - Restoration of the borrow pits/quarries after use constituting of levelling the area and seeding or planting of trees and/or grasses will be done in association with

		<p>local government (department responsible for natural resources) and local environmental NGOs. If appropriate, the levelled area will be left for natural re-vegetation.</p>
4	Contamination from poor management of Solid waste	<ul style="list-style-type: none"> - Wastes which are difficult to dispose will be minimized and where practicable avoided such as plastic wastes i.e. container/bottles and bags at the area or sell to recyclers for those which are recyclable; - Contractor will reduce-reuse-recycle; - All of the solid wastes that will be remain after reduction-reuse-recycling will be collected, accumulated and sent to Disposal site at designated dumpsite.
5	Occupational Accidents at the Work Place	<p><i>Slips and fall</i></p> <ul style="list-style-type: none"> - Implementing good house-keeping practices, such as the sorting and placing loose construction materials or demolition debris in established areas away from foot paths - Cleaning up excessive waste debris and liquid spills regularly - Locating electrical cords and ropes in common areas and marked corridors - Use of slip retardant footwear - The contractor will prepare a Health and safety Plan for mitigation of the accidents and prevention of electrocution hazards <p><i>Work in Heights</i></p> <ul style="list-style-type: none"> - Training and use of temporary fall prevention devices, such as rails or other barriers able to support a heavy load, when working at heights equal or greater than two meters or at any height if the risk includes falling into operating machinery, into water or other liquid, into hazardous substances, or through an opening in a work surface. The BS EN 128111:2003, Temporary works equipment Part 1: Scaffolds — Performance

		<p>requirements and general design will be considered when designing scaffolds and temporal support structures;</p> <ul style="list-style-type: none">- Training and use of personal fall arrest systems, such as full body harnesses and energy absorbing lanyards able to support heavy loads (also described in this section in Working at Heights above), as well as fall rescue procedures to deal with workers whose fall has been successfully arrested;- The tie in point of the fall arresting system should also be able to support heavy loads; and- Use of control zones and safety monitoring systems to warn workers of their proximity to fall hazard zones, as well as securing, marking, and labelling covers for openings in floors, roofs, or walking surfaces. <p><i>Struck by Objects</i></p> <ul style="list-style-type: none">- Using a designated and restricted waste drop or discharge zones, and/or a chute for safe movement of wastes from upper to lower levels;- Conducting sawing, cutting, grinding, sanding, chipping or chiselling with proper guards and anchoring as applicable;- Maintaining clear traffic ways to avoid driving of heavy equipment over loose scrap;- Use of temporary fall protection measures in scaffolds and out edges of elevated work Surfaces, such as hand rails and toe boards to prevent materials from being dislodged;- Wearing appropriate PPE, such as safety glasses with side shields, face shields, hard hats, and safety shoes; and- Institute good site practices including prevent public access to the construction site by securing equipment and demarcate excavate, using warning signs with
--	--	--

		<p>appropriate text (local language) and graphic displays;</p> <p><i>Moving Machinery</i></p> <ul style="list-style-type: none"> - Planning and segregating the location of vehicle traffic, machine operation, and walking areas, and controlling vehicle traffic through the use of one-way traffic routes, establishment of speed limits, and on-site trained flag-people wearing high-visibility vests or outer clothing covering to direct traffic; - Ensuring the visibility of personnel through their use of high visibility vests when working in or walking through heavy equipment operating areas, and training of workers to verify eye contact with equipment operators before approaching the operating vehicle; - Ensuring moving equipment is outfitted with audible back-up alarms; and - Using inspected and well-maintained lifting devices that are appropriate for the load, such as cranes, and securing loads when lifting them to higher job-site elevations. <p><i>Disease prevention</i></p> <ul style="list-style-type: none"> - Awareness campaigns /Education on HIV and STDs shall be provided to workers; - A well-stocked First Aid kit (administered by medical personnel) shall be maintained at construction site. The medical personnel shall also be responsible for primary treatment of ailments and other minor medical cases as well as providing health education to the workforce; - Reporting mechanisms for the public to register concerns or complaints regarding perceived risks to their health Emergency contact details in the event of an accident shall be provided; - Training all contractor staff in emergency planning and management; and - Developing a detailed health and safety plan and
--	--	--

		<p>training all contractor staff on the plan.</p> <p><i>Over-exertion, and ergonomic injuries and illnesses</i></p> <ul style="list-style-type: none"> - Training of workers in lifting and materials handling techniques in construction projects, including the placement of weight limits above which mechanical assists or two-person lifts are necessary; - Planning work site layout to minimize the need for manual transfer of heavy loads; - Selecting tools and designing work stations that reduce force requirements and holding times, and which promote improved postures, including, where applicable, user adjustable work stations; and - Implementing administrative controls into work processes, such as job rotations and rest or stretch breaks.
Positive Social Impacts from Operation Phase		
SN	Impacts	Enhancement Measure
1	Increase of Admission of Students to Mwanza Campus	<ul style="list-style-type: none"> - Gender and disadvantaged groups will be considered during the student selection process - IFM Hostel shall increase advertisements to attract more students to study the priority programmes
2	Provision of Modern and Adequate and Affordable Student Hostel Facility	<ul style="list-style-type: none"> - Sourcing funds for maintenance so that the hostel should be in good condition and be in operation for a long time; and - Provide affordable rates for accommodation to the student
3	Increase in Performance of Students Academically as Most Students Will Live Close to The Campus and Easily Access College Facilities	<ul style="list-style-type: none"> - Sourcing funds for maintenance so that the hostel should be in good condition and be in operation for a long time.
4	Improve Security in the Area	<ul style="list-style-type: none"> - Guard houses will be in place at the gate. Security guards should always monitor the gate of the facility to keep

		<p>away intruders and to control movement within the site.</p> <ul style="list-style-type: none"> - The guards stationed at the gates should document movements in and out of the site/property
5	Creation of Employment Opportunities	<ul style="list-style-type: none"> - Recruitment of skilled and non-skilled labours will be done with priorities to people from the area surrounding the project area in Kiseke. - Proponent shall not cause children under the age eighteen (18) to be employed or be engaged in any proposed project activities.
6	Improved Access to Social Services by The Local Community	<ul style="list-style-type: none"> - Providing extra social services that can be accessed by the communities
7	Increase in Economic Activities	<ul style="list-style-type: none"> - Designating a place where the local traders will be selling their merchandise; and - Traders from the project area to be allowed to supply foodstuff for student meals
8	Increase in Revenue by the Government through Taxes	<ul style="list-style-type: none"> - Remitting taxes to TRA from wages and service provisions in time
Negative Social Impacts from Operation Phase		
SN	Impacts	Mitigation Measure
1	Increase in the Spread of HIV/AIDS, COVID 19 and Other Sexually Transmitted Diseases	<ul style="list-style-type: none"> - Workers will be sensitized on the issue of HIV/AIDS and STDs and on the usage condoms etc. - Establishment and implementation of HIV/AIDS awareness and prevention programs; - HIV/AIDS testing will be conducted and counseling services will be done; and - Providing protection gears where needed such as condoms.
2	Increase in Criminal Acts	<ul style="list-style-type: none"> - Sensitize the communities and students on how they can live in harmony; - Introduce community policing in conjunction with Sanctuary Police Station; - Request for a police unit within the project area.

3	Increased Energy Demand	<ul style="list-style-type: none"> - Put off all lights immediately when not in use or are not needed - Use energy-conserving electric bulbs for general lighting - Make use of alternative sources of energy such as solar power. Solar panels proposed in the project should be fully utilized and timely repaired in case of damage
4	Increased Water Demand	<ul style="list-style-type: none"> - Install water-conserving taps that turn off automatically when water is not in use - Encourage water reuse/recycling during occupation phases - Roof catchments of building blocks should be provided with rainwater harvesting systems (gutters, down pipes and water storage facilities) to enhance the collection and storage of the resulting run-off. Such water can be used in watering flower gardens, general cleaning etc. - Provide notices and information signs to sensitize on means and needs to conserve water resource i.e. Keep/Leave the Tap Closed etc. This will awaken the civic consciousness of the workers and residents with regard to water usage and management
5	Gender Based Violence	<ul style="list-style-type: none"> - The project will prepare a GBV Action Plan that ensures project awareness raising strategy (for workers and community members), - A list of GBV service Providers to which GBV survivors will be referred, revisions to the GRM to ensure it can address GBV complaints, and - Information on GBV allegation procedures in the workplace
6	Child Labor	<ul style="list-style-type: none"> - IFM will conduct regular monitoring of project workers in relation to health, working conditions, hours of work, minimum age, and the other requirement of national law; - Work with local authorities and schools in the area to

		<p>control school dropout;</p> <ul style="list-style-type: none"> - Cooperate with relevant authorities like Ministry of Labor to control child labor;
Negative Impacts on Physical Environment from Operation Phase		
SN	Impacts	Mitigation Measure
1	Contamination from Poor Solid Waste Management	<ul style="list-style-type: none"> - Waste bins will be provided in the area for waste segregation in the project area; - Waste management by reduction reuse and recycling will be implemented by the institution management. - Wastes which will be inadvertently dumped in unauthorized locations will be removed immediately and disposed at an approved site; - Hazardous waste will be separated from non-hazardous waste for appropriate disposal of non-hazardous waste and selling to the authorized dealers; and - Workers' training will include instructions on how to dispose of food and drink containers emphasizing the need to protect the environment.
2	Contamination from Poor Liquid Waste Management	<ul style="list-style-type: none"> - During this phase the workers and students will be use the sanitation facilities (toilets) within the project area, to minimize environmental pollution that could occur. There will be located signs to give directions to the existing washrooms; and - The site will be hygienically kept with adequate provision of facilities including waste disposal receptacles, sewage and clean and safe water supply.
3	Mismanagement of Hazardous Waste	<ul style="list-style-type: none"> - All hazardous materials must be collected separately, stored in appropriately bonded containers and placed on concrete floor - Hazardous waste should be disposed by a licensed personnel/company - Refueling and maintenance of large vehicles shall not

		<p>take place at the construction site</p> <ul style="list-style-type: none"> - Maintaining spill response kits at the site office - On site spill response procedures will be prepared - Training of workers on spill response and management
4	Poor Sanitation	<ul style="list-style-type: none"> - Provision of adequate toilets for students and members of staff; - Construction of double-chambered septic tanks for disposal of liquid wastes; - Regular inspection and maintenance of the septic tank network; - Provision of potable water within the site; and - Sensitization of students and members of staff on the importance of good hygiene practices.
5	Poor Surface Drainage	<ul style="list-style-type: none"> - Rainwater harvesting gutters and storage tanks should be installed to reduce the amount of rainfall reaching the surface. - Semi-permeable materials should be used for the construction of pavements - The proponent should embark on comprehensive landscaping to increase the soft cape cover on the plot.
6	Risks of Fire Hazards	<ul style="list-style-type: none"> - Install an automatic fire hydrant system which will trigger automatically during fire eruption/outbreak; - Provide fire hazard signs such as ‘No Smoking’ signs, direction to exit in case of any fire incidence and emergence contact numbers should be provided; - The compound should be kept clean and free from fire hazards and litter; - Install fire control appliances (portable fire extinguisher; both CO₂, dry powder and water type,) and employees should be adequately instructed periodically in the use of the various fire appliances. - Conduct regular drills/simulations to sensitize the workers once a year;

		<ul style="list-style-type: none"> - Regular repair and maintenance program for all equipment; - Make sure better lighting arrester are installed in a right place; and - Workers will be trained on fire emergency response by authorized officers from Fire and Rescue Force Office. The training program will be in every year to keep the workers up to dated. Also, the proponent has adopted its own Emergency preparedness plan for handling emergency such as fire.
7	Contribution to Climate Change	<ul style="list-style-type: none"> - The proposed hostel shall reduce direct and indirect greenhouse gas generation in the following ways; - Change the consumption behavior in terms of energy and water - Use of renewable energy technologies to minimize the carbon dioxide emission. - Promote use of natural green space at the campus to increase energy saving - The institute has to transform to digital software operated work, in order to minimize paper consumption rates. This will greatly influence the educational standards. And will save a great deal to reduce the amount of forest resources consumed.
Positive Social Impact from Decommissioning Phase		
SN	Impacts	Enhancement Measure
1	Employment Opportunities	<ul style="list-style-type: none"> - Employing more people as much as possible from communities surrounding the project area; and - Giving women equal employment opportunities as men. - Proponent shall provide on job and safety training; and - Proponent shall not cause children under the age eighteen (18) to be employed or be engaged in any

		project activities
Negative Social Impact from Decommissioning Phase		
SN	Impacts	Mitigation Measure
1	Loss of Employment	<ul style="list-style-type: none"> - Ensuring that all employees are members of the social security fund and the employer will ensure that the company contributions are made; - Employees will also be prepared for forced retirement by providing skills for self-employment; and - The project will provide relevant skills to workers through on job training to make them marketable after decommission.
2	Loss of Income	<ul style="list-style-type: none"> - The developer should ensure that all workers are provided with various skills and pieces of training for self-employment that will help them when they lost their employment position at the facility; - Ensuring that workers are provided with small loans for them to invest in small businesses that will be their backbone in life once they lost employment.
3	Workers' accidents and hazards during demolition	<ul style="list-style-type: none"> - Proper signs on site to warn workers of safety requirements as regards machines with moving parts and other equipment at the site; - A first Aid box and a trained person to handle site emergencies and incidents will be in place; - Site vehicle to specifically transport the injured to the hospital will be available; - Providing fire-fighting mechanism at the site; - Providing safe scaffoldings and railings at heights; - Providing washing (enclosed bathroom) and toilet facilities at the site with both drinking and washing water. The number of workers engaged determines the number of toilets and bathrooms provided; and - Providing safety helmets, safety masks (welders), safety shoes (loaders), uniforms and hand gloves to the

		workers.
Negative Environmental Impacts from Decommissioning Phase		
SN	Impacts	Mitigation Measure
1	Soil Erosion	<ul style="list-style-type: none"> - Planting indigenous plants on site to support the disturbed soil; - Backfilling any foundation and trenches by using the topsoil on site to stabilize the disturbed area; - Reestablish the original grade and drainage pattern to the extent practicable
2	Contamination from poor management of Solid Waste	<ul style="list-style-type: none"> - A site waste management plan will be prepared by the contractor before commencement of demolition activities. This will include designation of appropriate waste storage areas, collection and removal schedule, identification of approved disposal site, and a system for supervision and monitoring; - Trash and waste shall be well collected and removed from the site to district dumpsite; - Reusable materials like doors, windows and timber will be sold to licensed scrap dealers; - Decomposable materials shall be collected and taken to the approved dumpsite outside the park boundary. Plastics and other recyclable materials will be collected and sent out for recycling; and - Planning for the daily collection of litter and demolition debris from the site by a licensed solid waste transporter for dumping at approved site.
3	Dust and Gases Emission	<ul style="list-style-type: none"> - Stockpiles of fine materials will be wetted or covered with tarpaulin during windy conditions; - Workers should be issued with proper protective equipment; - Covering all haulage vehicles carrying debris for dumping at approved sites

4	Occupational /Public Health and Safety Hazards	<ul style="list-style-type: none"> - Decommissioning works workers be issued with appropriate PPEs and the decommissioning contractor to enforce their use; - Restrict onlookers/scavengers from site; - Develop safe work procedures for demolition works; - Ensure that pits left behind by the project are backfilled or slopes evened out and re vegetated using indigenous vegetation species; - Identify, clear and mark all excavations in the area that cannot be covered and that are not being used by the project so that they can be clearly identified from far; and - Erect barrier fencing around all excavations identified and regarded as posing danger to human and animal life as well as the placement of danger signs.
5	Contamination from Accidental Spills	<ul style="list-style-type: none"> - Ensure employees are aware of the procedure for dealing with spills and leaks; - The source of the spill should be isolated and the spillage contained using sand berms, sandbags, sawdust and/or absorbent material; - The area should be cordoned off and secured; - Notify the relevant authorities of any spills that occur; and - Ensure that the necessary materials and equipment for dealing with the spills and leaks is available on site at all times

CHAPTER EIGHT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

8.1 Introduction

An Environmental and Social Management Plan (ESMP) outlines how the environmental impacts of a project are going to be managed, enhanced, minimized and mitigated. The ESMP is also an environmental management tool that is used to monitor the implementation of environmental management measures. This ESMP outlines environmental impacts and their management measures, assigns implementation responsibilities to stakeholders within a given time frame and estimates the costs of implementing the measures. The ESMP for the construction, operation and decommissioning phases of the proposed project is provided in Table 28.

8.2 Institutional Roles and Responsibilities

8.2.1 Financing Agency

IFM is the financing agency for this project. They are responsible for providing funds for the implementation of mitigation measures and compliance monitoring.

8.2.2 Implementing Agency

The implementing agency for this project is the IFM. The institute holds final responsibility for the environmental performance of the project.

8.2.3 Supervision Consultant

The Supervision Consultant is appointed by the implementing agency and is responsible for monitoring and supervision of the construction works including implementation of ESMP. The Consultant shall appoint a Resident Engineer to oversee the construction works and monitor the works undertaken by the Contractor and implementation of ESMP to ensure compliance with contract specifications and contractual requirements. However, for supervision and monitoring of the implementation of ESMP throughout the construction phase, the implementing agency can engage an Independent Environmental Consultant. The Environmental Consultant shall be responsible for environmental compliance monitoring. This includes checking, verifying and validating the overall environmental performance of the project through regular audits, inspections and reviews of project submissions.

8.2.4 Contractor

The Contractor shall be responsible for the implementation of construction works and ensure compliance with environmental requirements. The Contractor shall appoint a Site Engineer who shall be responsible for the implementation and management of the ESMP programme and the required environmental monitoring works. Most important will be the Occupational Safety and Health of workers.

8.2.5 Local Government Authorities and Local NGOs / CBOs

The involvement of local authorities is crucial for the successful implementation of ESMP because some of the mitigation measures are better undertaken by local communities with the support of the local government authorities and NGOs. It is therefore important that the Ilemela Municipal Council be involved in the implementation of ESMP. The respective local government authorities and local NGOs should be well informed and invited to comment on the ESIA report at the design stage rather than when all major decisions have been made. One copy of this report should be sent to Ilemela Municipal Council to ensure that, the Council through its Environmental Management Officer will be involved in monitoring compliance with mitigation measures.

8.2.6 Local Communities

In general, the local communities do support the project because they know it is going to benefit them and the nation at large. However, the project can obtain maximum benefit if it involves the local communities and spends some amount of funds for the benefit of the local communities. Table 13 outlines the environmental and social management plan for the proposed development. The plan considers the development activity, predicted environmental impact, proposed mitigations, actors, timeframe and costs for implementation.

8.3 Environmental and Social Cost

The environmental and social cost were proposed based on knowledge of activities involved, consultations and experience of the experts. However, the proposed costs are only indicative, should the proposed development proceed with the suggested changes, the developer will work out on actual costs and include them in the overall cost of the project. These costs are indicated in Table 29 IFM shall cover all the costs proposed in the ESMP.

Table 24:Environmental and Social Management Plan

SN	Identified impact	Recommended Enhancement/Mitigation Measure	Responsible Authority	Costs (TZS)
Pre-Construction And Construction Phase				
Positive Impacts				
1	Creation of employment Opportunities	<ul style="list-style-type: none"> Employing unskilled labours as much as possible from the project area Giving women equal employment opportunities as men. 	Contractor and IFM	N/A
2	Increase in the market for local construction materials	<ul style="list-style-type: none"> Purchasing materials from as many local suppliers Hiring trucks to transport construction materials like sand, quarry and cement to the project site. 	Contractor and IFM	N/A
2	Increase in business activities within the project area	<ul style="list-style-type: none"> Designating an area as a market within the project site 	Contractor and IFM	NA
Item	Identified Impact	Recommended Enhancement/Mitigation Measure	Responsible Authority	Costs (TZS)
Negative Impacts				
1	Air pollution	<ul style="list-style-type: none"> Observes ambient quality guidelines and standards by applying national legislated standards (the Environmental Management (Air Quality Standards) Regulations, 2007, the current WHO Air Quality Guidelines; Project proponent will conduct regular maintenance of all equipment on site as a way of reducing emissions of noxious gases and improve working mechanisms and thus reduce emission of the moving parts; Proper aeration within the premises; and 	Contractor and IFM	5,000,000

		<ul style="list-style-type: none"> • Conduct air quality monitoring quarterly. 		
2	Noise Pollution	<ul style="list-style-type: none"> • Fitting construction vehicles with silencers to reduce the noise • Servicing machinery so that they can be in good condition at all times • Providing ear protection materials for workers in noisy areas • During construction at the site, the contractor should only work during the normal hours from 8.00am-11.00pm so that the community around is not disturbed; • Some building materials and components are to be processed off-site and fixed on-site; • Provide a noise monitoring meter at the noise site; 	Contractor and IFM	5,000,000
3	Soil erosion	<ul style="list-style-type: none"> • Carrying out construction works out from May - September • Clearing only those places where buildings will be constructed • Creating drainage channels to direct storm water movement • Creating stone pitching where soils have been excavated 	Contractor and IFM	3,000,000
4	Soil Contamination	<ul style="list-style-type: none"> • Construction vehicles should be in good condition to avoid fuel leaks • Servicing areas for vehicles should have impermeable surfaces and should be bunded • All oil products and materials should be stored on-site stores and should be handled appropriately to avoid spills 	Contractor and IFM	

		and leaks.		
5	Increase in accidents/ incidences	<ul style="list-style-type: none"> • Introducing humps on the road to help reduce the speed of the vehicles • Erecting warning signs showing that are heavy machinery and construction vehicles are using that road for people to be alert • Providing workers with protective clothing • Training workers in the proper use and handling of heavy equipment and machinery • There should be a first aid kit on site and all workers trained on how to provide first aid when needed; • The site should be installed with firefighting equipment so all workers can use them. • Following health and safety regulations 	Contractor and IFM	10,000,000
6	Increase in HIV and AIDS and other diseases	<ul style="list-style-type: none"> • The contractor and other health centres /organizations had to raise awareness among workers on HIV/AIDs and other sexually transmitted diseases; • There should be a box containing protection (condoms) on-site; and • There should be a post reminding worker of the effect of sexually transmitted diseases and HIV/AIDs on site. 	Contractor and IFM	2,000,000
7	Increase in criminal Acts	<ul style="list-style-type: none"> • Employ people from the surrounding areas to reduce the number of migrant workers • Introduce community policing in conjunction with Kiseke 	Contractor and IFM	N/A

		<p>Police station</p> <ul style="list-style-type: none"> • Sensitize the community on the ownership of the project 		
8	Contamination from Poor solid waste management	<ul style="list-style-type: none"> • Segregate waste onsite; • Ensure that waste is disposed of according to EMA 2004 and solid waste management regulation of 2009 • Contracted waste handlers should be licensed to transport and dispose waste at approved dumpsites only • Wastes which are difficult to dispose will be minimized and where practicable avoided such as plastic wastes i.e. container/bottles and bags at the area or sell to recyclers for those which are recyclable; • The contractor will also put in place different waste bins for segregation on site and to discourage uncontrolled waste disposal; • Contractor will reduce-reuse-recycle; • All solid wastes remaining after reduction reuse-recycling will be collected, accumulated and sent to Disposal site at dumpsite/landfill. 	Contractor and IFM	5,000,000
9	Contamination from Poor sanitation	<ul style="list-style-type: none"> • Provision of pit latrines for workers and drivers on the construction site • Provision of potable water within the site • Sensitization of workers on the importance of good hygiene practices. 	Contractor and IFM	Included in the project cost
10	Degradation of land and	<ul style="list-style-type: none"> • Buying sand and quarry from registered local artisans 	Contractor and IFM	5,000,000

	river banks	<p>Carrying out sensitization of local artisans on good mining practices</p> <ul style="list-style-type: none"> • Assisting communities with afforestation programs for river banks • Introducing alternative income-generating activities in the area. 		
11	Traffic Density	<ul style="list-style-type: none"> • Notify the motorists about the project once implementation is started • Put in place warning/ informative signs (billboards) at the site • The signs should be positioned in a way to be easily viewed by the public and most motorists • The traffic along the connecting roads should be controlled especially during the construction phase and mostly when trucks are turning into the site, say when delivering materials. • Employ traffic marshals to control traffic along the adjacent roads and in and out of the site. 	Contractor and IFM	1,000,000
12	Risks of child Labor on the construction site	<ul style="list-style-type: none"> • Recruitment of workers through the district labour office • Erect sign board “NO-CHILD LABOUR” on site 	Contractor and IFM	N/A
13	Contamination from Mismanagement of Hazardous waste	<ul style="list-style-type: none"> • All hazardous materials must be collected separately, stored in appropriately bonded containers and placed on concrete floor • Hazardous waste should have disposed by a licensed 	Contractor and IFM	10,000,000

		<p>personnel/company</p> <ul style="list-style-type: none"> • Refueling and maintenance of large vehicles shall not take place at the construction site • Maintaining spill response kits at the site office • On site spill response procedures will be prepared 		
14	Contribution to Climate Changes	<ul style="list-style-type: none"> • To change the consumption behaviour in terms of energy and water • Use of renewable energy technologies to minimize the carbon dioxide emission. • Promote use of natural green space at IFM to increase energy saving • The institute has to transform to digital software operated work, in order to minimize paper consumption rates. This will greatly influence the educational standards. And will save a great deal to reduce the amount of forest resources consumed. 	Contractor and IFM	N/A
15	Increased Greenhouse gas generation	<ul style="list-style-type: none"> • Proper engine tunes up • Regular inspection and maintenance of construction equipment's • Reduce machines and vehicles idling time 	Contractor and IFM	5,000,0000
16	Reduction of CO ₂ Sequestration Potential	<ul style="list-style-type: none"> • The proponent shall ensure that open areas of the project site are re-planted with grass, flowers and trees. • The proponent shall ensure proper demarcation of the project area to be affected by the construction works 	Contractor and IFM	N/A

		<ul style="list-style-type: none"> • Topsoil excavated from the construction site shall be re-spread in areas to be landscaped to enhance plant health. 		
17	Gender based	<ul style="list-style-type: none"> • The project shall ensure gender balance during employment 	Contractor and IFM	N/A
18	Cultural heritage	<ul style="list-style-type: none"> • Notify relevant authorities of found objects or sites by cultural heritage experts; • Fence-off the area of finds or sites to avoid further disturbance; • Assess found objects or sites by cultural heritage experts; • Identify and implement actions consistent with the requirements of ESS and national law; and • Train project personnel and project workers on chance find procedures • Identify movable cultural heritage objects that may be endangered by the project and make provisions for their protection throughout the project life cycle. • Inform religious or secular authorities or other custodians with responsibility for overseeing and protecting the movable cultural heritage objects of the schedule for project activities and alert them regarding the potential vulnerability of such items. 	Contractor and IFM	N/A
19	Human remains	<ul style="list-style-type: none"> • Notify the archeologist to determine the nature of the remains 	Contractor and IFM	N/A
20	Risks of inappropriate contacts between workers	<ul style="list-style-type: none"> • Periodic sensitization of workers and students on zero tolerance against the malpractices 	Contractor and IFM	N/A

	and students			
Item	Identified Impact	Recommended Enhancement/Mitigation Measure	Responsible Authority	Costs (TZS)
Operation Phase				
Positive Impacts				
1	Provision of modern and affordable student hostel facility	<ul style="list-style-type: none"> Sourcing funds for maintenance so that the hostel should be in good condition and be in operation for a long time; and Providing equal enrolment opportunities for people with special needs 	IFM	N/A
2	Increase in the performance of students academically as students will live close to the campus and easily access college facilities	<ul style="list-style-type: none"> Sourcing funds for maintenance so that the hostel should be in good condition and be in operation for a long time 	IFM	N/A
3	Improve security in the area	<ul style="list-style-type: none"> The project site will be enclosed using suitable walls to beef up security and control movement within the site Guard houses will be in place at the gate. Security guards should always monitor the gate of the facility to keep away intruders and to control movement within the site The guards stationed at the gates should document movements in and out of the site/property. 	IFM	5,000,000
4	Creation of employment opportunities	<ul style="list-style-type: none"> Employing more people from the communities surrounding the project area and other areas within the country for both unskilled and skilled jobs 	IFM	N/A

		<ul style="list-style-type: none"> Giving equal employment opportunities for both men and women 		
5	Improved access to social services by the local community	<ul style="list-style-type: none"> Providing extra social services that can be accessed by the communities. 	IFM	N/A
6	Increase in economic activities	<ul style="list-style-type: none"> Sourcing funds for operation and maintenance costs for the students' hostel to be in operation for a long time Traders from the project area are to be allowed to supply foodstuffs for student meals. Outsourcing non-core functions 	IFM	N/A
7	Increase in revenue by the government through taxes	<ul style="list-style-type: none"> Remitting taxes to TRA from wages and service contracts in time 	IFM	N/A
Item	Identified Impact	Recommended Enhancement/Mitigation Measure	Responsible Authority	Costs (TZS)
Negative Impacts				
1	Contamination from Poor solid waste management	<ul style="list-style-type: none"> Provision of dust bins or rubbish pits for the wastes produced Segregation of waste by providing different bins for each type of waste Maintaining the dumping site that will be identified during construction Collecting and disposing of wastes at designated dumpsites regularly Use high-tech incinerator for managing sanitary pads 	IFM	5,000,000

		<ul style="list-style-type: none"> Used chemicals should be disposed of in an appropriate manner 		
2	Contamination from Poor Sanitation	<ul style="list-style-type: none"> Provision of adequate toilets for students and workers Construction of double-chambered septic tanks for disposal of liquid wastes Regular Inspection and maintenance of the septic tank network 	IFM	5,000,000/-
3	Increase in HIV and AIDS and other sexually transmitted diseases	<ul style="list-style-type: none"> Carry out sensitization meetings for students and workers from time to time Develop an HIV and AIDS workplace policy; Distribution of condoms and Education, Information and Communication materials on HIV and AIDS to workers and students 	IFM	5,000,000
4	Increase in criminal acts	<ul style="list-style-type: none"> Sensitize the communities and students on how they can live in harmony Introduce community policing in conjunction with Kiseke Police station Sensitizing the students on the ownership of the college 	IFM	3,000,000
5	Contamination from Poor Liquid Waste management	<ul style="list-style-type: none"> Construction of the double chamber septic tank. The design of the internal sewerage system should consider the estimated discharges from individual sources and the cumulative discharge of the entire project i.e. it should have the capacity to consistently handle the loads even during peak volumes 	IFM	5,000,000

		<ul style="list-style-type: none"> • All drain pipes passing under the building, driveway or parking should be of heavy-duty PVC pipe tube encased in concrete surround. • All manholes on driveways and parking areas should have heavy-duty covers set and double-sealed airtight; as approved by specialists. • Sanitary facilities should be kept clean always, through regular washing/cleaning. • Frequent monitoring of the internal drainage system. • Blockages and damages should be fixed expeditiously 		
6	Poor Surface Drainage	<ul style="list-style-type: none"> • Rainwater harvesting gutters and storage tanks should be installed to reduce the amount of rainfall reaching the surface. • Semi-permeable materials should be used for the construction of pavements. • After completion of construction, the proponent should embark on comprehensive landscaping to increase the soft-scape cover on the plot. 	IFM	4,500,000
7	Fire Outbreak	<ul style="list-style-type: none"> • Hire a competent and properly authorized electrical contractor to do the wiring and other electrical works. • Install a fire alarm system for the entire project • Install smoke detectors in kitchens. • Installation of firefighting equipment following Country Fire requirements. 	IFM	6,500,000

		<ul style="list-style-type: none"> • Conduct regular firefighting drills within the site. • Develop and adopt a (fire) emergency response plan for the project during and occupation stage. • Ensure that all firefighting equipment is regularly maintained and serviced. • Provide fire hazard signs such as “No Smoking sign”, Direction to exit in case of any fire incidents and emergency numbers. 		
8	Increase in Energy Demand	<ul style="list-style-type: none"> • Put off all lights immediately when not in use or are not needed. • Use energy-conserving electric lamps for general lighting. • Make use of alternative sources of energy such as solar power. Solar panels proposed in the project should be fully utilized and timely repaired in case of damage. 	IFM	5,000,000
9	Increase in water demand	<ul style="list-style-type: none"> • Install water-conserving taps that turn off automatically when water is not in use. • Encourage water reuse/recycling during occupation phases. • Roof catchments of building blocks should be provided with rainwater harvesting systems (gutters, down pipes and water storage facilities) to enhance the collection and storage of the resulting run-off. Such water can be used in watering flower gardens, general cleaning etc. • Provide notices and information signs to sensitize on means and needs to conserve water resources i.e. Keep/Leave the 	IFM	4,500,000

		Tap Closed etc. This will awaken the civic consciousness of the workers and residents concerning water usage and management		
Item	identified impact	Recommended Enhancement/Mitigation Measure	Responsible Authority	Costs (TZS)
Impact From Decommission Phase				
Negative Impacts				
1	Soil Erosion	<ul style="list-style-type: none"> Planting indigenous plants on site to support the disturbed soil; Backfilling any foundation and trenches by using the topsoil on site to stabilize the disturbed area; Reestablish the original grade and drainage pattern to the extent practicable. 	IFM	9,000,000
2	Loss of employment	<ul style="list-style-type: none"> Ensuring that all employees are members of the security fund and the employer will ensure that the company contributions are made; Employees will also be prepared for forced retirement by providing skills for self-employment; and The project will provide relevant skills to workers through job training to make them marketable after decommission 	IFM	10,000,000
3	Loss of income	<ul style="list-style-type: none"> The developer should ensure that all workers employed are provided with various skills and training for self-employment that will help them when they lost their employment position at the facility; 	IFM	10,000,000

		<ul style="list-style-type: none"> Ensuring that workers are provided with small loans for them to invest in small businesses that will be their backbone in life once they lost employment. 		
4	Solid Waste Generation	<ul style="list-style-type: none"> A site waste management plan will be prepared by the contractor before commencement of demolition activities. This will include designation of appropriate waste storage areas, collection and removal schedule, identification of approved disposal site, and a system for supervision and monitoring; Trash and waste shall be well collected and removed from the site to the district dumpsite; Reusable materials like doors, windows and timber will be sold to licensed scrap dealers; Decomposable materials shall be collected and taken to the approved dumpsite outside the park boundary. Plastics and other recyclable materials will be collected and sent out for recycling; and Planning for the daily collection of litter and demolition debris from the site by a licensed solid waste transporter for dumping at the approved site. Decomposable materials shall be collected and taken to the approved dumpsite outside the park boundary. Plastics and other recyclable materials will be collected and sent out for 	IFM	3,000,000

		<p>recycling; and</p> <ul style="list-style-type: none"> • Planning for the daily collection of litter and demolition debris from the site by a licensed solid waste transporter for dumping at the approved site. 		
5	Workers' accidents and hazards during demolition	<ul style="list-style-type: none"> • Proper signs on site to warn workers of safety requirements as regards machines with moving parts and other equipment at the site; • A first Aid box and a trained person to handle site emergencies and incidents will be in place; • Site vehicle to specifically transport the injured to the hospital will be available; • Providing fire-fighting mechanism at the site; • Providing safe scaffoldings and railings at heights; • Providing washing (enclosed bathroom) and toilet facilities at the site with both drinking and washing water. The number of workers engaged determines the number of toilets and bathrooms provided; and • Providing safety helmets, safety masks (welders), safety shoes (loaders), uniforms and hand gloves to the workers. 	IFM	9,000,000
6	Dust and gases emission	<ul style="list-style-type: none"> • Covering all haulage vehicles carrying debris for dumping at approved sites; • Stockpiles of fine materials will be wetted or covered with tarpaulin during windy conditions; • Workers are going to be issued with proper protective 	IFM	7,000,000

		equipment.		
--	--	------------	--	--

8.4 Disaster Risk Management Plan

8.4.1 Disaster Risks at the Proposed Project and Level of Management

The proposed project is vulnerable to a range of disaster risks, which pose risks to the students, and other staff. The proposed project is vulnerable to fire outbreak, diseases outbreak, traffic accidents, robbery, and ICT appliance damage. Other disaster risks include; terrorist attacks, ammunition accidents and earthquakes. Currently, there is no disaster risk preparedness and management for the proposed buildings; moreover, this shall be prepared as soon as the construction finishes and starting of project operations.

Table 25: Disaster Risks and management level

Disaster risk	Standard practice	Management level	Remarks
Fire Outbreak	Fire fighting	Fire extinguisher Fire hose reel Alarm Smoke detector	Average preparedness
	Assembly points	One point	Average preparedness
	Emergency exit	Present	Average preparedness
	Escape route	Absent	Poor preparedness
Disease Outbreak	Dispensary	Present	Good preparedness
	First aid kits	Present	Low preparedness
	Ambulance	Present	Good preparedness
Traffic Accidents	Traffic signs	Zebra Speed limit	Average preparedness
	Car parking	present	Average preparedness
Robbery	Security guards	Present	Good preparedness
	Fence	Present	Average preparedness
	Identification card	present	Average preparedness
ICT appliance damage and data	Generators	Present	Average preparedness

8.4.2 Disaster Risk Management Plan

The disaster risk management plan is intending to provide efficient and effective operational procedures that will allow the buildings to save lives, minimize injuries, protect property, and the environment and preserve functioning campus in times of natural and man-made/technological hazards. In addition, it can

be used to control hazards so as reduce the vulnerability, to reduce the risk and the overall management of disaster risk to the proposed project community. The plan provides the basic information on the action to be taken during the pre-disaster, disaster phase (during the event) and -post-disaster phases. The plan describes the emergency and assigns the responsibilities for various emergency tasks, specifically to WHO does, WHAT, WHEN AND HOW.

8.4.3 Assumption Made in the Plan

The disaster risk management plan considers the following assumptions;

- i. IFM Institution will continue to be exposed to the impact of those Disaster risks identified as well as others that may develop in the future because of climate variability, climate change and proposed future expansion in infrastructure.
- ii. The possibility arises that an emergency or disaster may occur at any time.
- iii. A major disaster or emergency can cause numerous loss of life and injuries, property damage, and disruption of normal life support.
- iv. External services and resources may be necessary if an emergency exceeds the Institution's capability.
- v. Departments and agencies from the local government, state, and national levels may provide help to protect lives and property.
- vi. IFM Institution will follow all state and local regulations for safety plan and procedure review and inspection.

8.5 Traffic Management Plan

An appropriate systematic traffic management system is essential for safety and smooth traffic flows on roads. Good traffic management help to;

- a) To achieve smooth traffic flow
- b) To reduce traffic accidents, and
- c) To create pedestrian –friendly facilities

The typical management plan includes;

- i. **Give way signs:** to indicate who has the right of way
- ii. **Prohibitive/restriction signs:** to indicate the only direction in which the motorist is obliged to follow example No entry for all type of vehicles, No pedestrian crossing, No parking etc.,
- iii. **Speed limits:** set maximum speed that motorist is allowed to drive inside the campus
- iv. **Traffic cones:** to direct traffic around a construction site or other hazard
- v. **Barricades:** to block off an area entirely

- vi. **Traffic controllers:** used with other traffic controls, such signs and cones, to help direct motorists safety through an area
- vii. **Traffic lights:** to control the sequence of flow
- viii. **Pedestrian crossings:** to provide safe crossing points for road users

8.6 Health and Safety Management Plan

Health Safety Management Plan (HSMP) helps in the implementation, maintaining and continually improving Health and Safety management system following the requirements of Occupational Health and Safety Assessment Series (OHSAS) standards. It is therefore important that this is reflected in the Institution operations and responsibilities of every level of management within an organization. This plan shall help to implement the Safety and Health direction of the construction of Hostel building. It clearly states the requirements of donors, legislation, suppliers, management and employees in Safety and Health management.

8.6.1 Responsibilities

- i. **IFM Management:** The management is committed to the principle of safe working and desires that on no account should any person ever be exposed to risk.
- ii. **Supervisors:** It is the responsibility of the Supervisors to review and ensure awareness of emergency procedures among all the personnel.
- iii. **Employees:** It is also the responsibility of all employees to continually familiarize themselves with the assembly procedures for their relevant areas of work.
- iv. **General:** Any information being relayed about an emergency shall be clear and precise giving the exact location, the nature of the emergency and the seriousness of the emergency and contact numbers and names.

8.6.2 General Safety Facility Operation

i. General Site Rules

General site rules will be applied to all employees of IFM hostel, including employees of contractors and subcontractors, all students and all related personnel from third parties and visitors. Those rules are comprised of brief information about site emergency response plan, emergency contacts, map with permission marks and all other necessary information, and those will be shared with all employees, students and third parties.

ii. Site Entrance and Exit

The entry to the project area will be subject to the security personnel's supervision to ensure that all entries are performed in accordance with health and safety system and to prevent unauthorized access. Security personnel should be trained to meet both legislative and international standards by HSE Manager. Emergency exits of buildings and Project site should be clearly marked to be visible even in total darkness and be unobstructed at all the times. There should be minimum two exits from any work area.

iii. Safe Access

Passageways for pedestrians and vehicles within and outside buildings should be segregated and provide for easy, safe, and appropriate access. During construction, equipment and installations requiring servicing, inspection, and/or cleaning should have unobstructed, unrestricted, and ready access. Only authorized personnel have access to dangerous operation areas and measures will be taken by locked door to prevent unauthorized access to dangerous areas should be in place.

iv. Parking

Parking at the project site will only be restricted to the designated area. Parking shall be reverse and in the direction of exit. It is forbidden to park in front of fire extinguishers or hydrants, waste storage areas and emergency exits.

v. Smoking

Smoking in the construction site is strictly forbidden. There will be a designated open-air area or areas for smoking, where smoking is allowed only. Warning signs will be placed in accordance with the Law. Moreover, employees/students smoking other than the designated areas will be warned and fined, if necessary.

vi. Working Hours

The working hours in construction and operation phases of the Project will be in accordance with the legal work and overtime hours stated in the Labor Law No. 4857. Working hours can be shortened and additional required resting hours can be provided to the workers as a result of risk assessments and exposure to a hazardous situation. Special working hour arrangements will be made under extreme conditions such as exposure to extreme hot, cold and humid environments to prevent health risks of employees. Work and rest periods can be determined and implemented by work-specific risk assessments for the activities such as working in confined spaces, gaseous, dusty or noisy areas.

vii. Offices and Hostels

Offices and hostels will be cleaned and ventilated regularly. If it is not ensured, necessary warning signs shall be placed indicating the floor is slippery. Deteriorations, shelves and other materials will be repaired and/or fixed. Cleaning materials will be used with proper PPE and informed with the Material Safety Data Sheets (MSDSs).

Air conditioning devices will be regularly controlled according to industrial hygiene necessities. Sufficient lighting will be provided to the personnel working in the office/class. All employees/students shall be trained on office ergonomics.

Electrical equipment will be checked and labeled color codes in every three months by the electricians. Electrical distribution panels and fuse boxes will be kept locked, labeled and prevented from unauthorized use. Office/hostel will be equipped with detectors and fire extinguishers in case of fire hazards. Emergency exit doors and roads will be set at least 80 cm in length.

Students and employees/ who are exposed to workplace violence, retaliation, mobbing or any types of discrimination will be encouraged to report the situation in accordance with the Grievance Mechanism Procedure.

viii. Housekeeping

Employees will be informed through training that the major sources of hazards are negligence of keeping the site clean and tidy during all phases of the Project. Those training will include the some of the following consequences of lack of cleanliness and tidiness:

- a. Trip and fall hazards: Materials and equipment left on the floor can cause trip and fall of an employee/student. The result can be bone fractures and severe injury. If trip and fall is happened in a higher place without fall protection equipment, the incident may result with fatality
- b. Drop of a Material: Materials left in higher places may fall down and cause injuries
- c. Hygiene: Non-clean areas threaten employees' and students' health. Biological risks that may arise in the site are also assessed in this context and are tried to be avoided. All employees should wash their hands regularly, especially prior to eating and drinking.

All wastes generated in the site will be stored in the designated waste storage areas, by segregating according to their type. Waste management implementations are specified in Waste Management Plan for all phases of the Project.

Chemicals will be stored according to their hazardousness classifications and MSDSs. All chemicals will be ordered according to need and stored according to MSDSs. Bulk buying and storage will not be allowed. Hazardous materials will be stored in accordance with the relevant national regulations.

ix. Training

Suitable training will be provided to all personnel during various stages of the project and when new work force is added.

x. Awareness

Necessary posters and boards announcing action in case of an emergency will be put up at prominent places, and at all assembly areas.

xi. Emergency Plan

All actions will be coordinated with the overall emergency plan operated by the Supervisor. The General Manager is overall responsible to coordinate all emergency procedures along with the Health & Safety Manager. All emergency telephone numbers and contact names shall be posted at strategic points on site. For Fire press 114, Ambulance press 115, Police press 112 etc.

Subsequent actions as listed below will be taken either as in instruction from the Supervisor.

- a. Stop all work and report to the nearest evacuation area/ assembly area and await further instructions.
- b. Stop all equipment and vehicles.
- c. Contact the Health & Safety Manager and relay message to the Supervisor and General Manager.
- d. Ensure all personnel are aware of the emergency.

xii. Assembly Point

In an emergency all personnel are to proceed in an orderly manner to the nearest safe assembly point.

xiii. Head Count

The Supervisor shall take a head count and check all employee's area at the assembly point. He /She shall also inform the General Manager of the result of the head count.

xiv. Rescue Team

For missing personnel, a rescue team will be formed in consultation with the Engineer and depending upon the type and status of emergency, all efforts will be made to rescue the missing personnel.

xv. Fire Fighting

In case of a fire, after the alarm has been sounded, all efforts will be made to put off the fire by use of fire extinguishers, fire hydrants, hoses etc. until more professional help come. Fire extinguishers will be available on site at strategic locations near stores, laydown area, and electrical distribution cabinets.

xvi. All Clear

Normal work will be resumed only after all clear signal is received from the Supervisor. As such the supervisors shall make all arrangements to meet the concerned authorities.

8.7 Health and Safety Measures

i. Slips and Trips Safety Precautions

Both slips and trips result from unintended or unexpected change in the contact between the feet and the ground or walking surface. This fact shows that good housekeeping, quality of walking surfaces (flooring), selection of proper footwear, and appropriate pace of walking are critical for preventing fall incidents. Basic housekeeping is often the simplest way to reduce the risk.

Safety measures include;

- a. Make repairs or replace the floor surface if required.
- b. Ensure personnel wear suitable and appropriate footwear, this includes visitors.
- c. Assess the cause of slippery surfaces and treat accordingly, for example treat chemically and use appropriate cleaning methods.
- d. Warn of risks at any change in surface, for example dry to wet, even to uneven, traffic routes, by using signs, mats or markings.
- e. Where there is a change in surface level, ensure good visibility and lighting, provide hand rails and add tread markers or other floor markings as required.
- f. Clean up all spillages immediately. If the floor is wet, use appropriate signs to tell people that extra care is needed or use another route until the spillage or wetness is gone.
- g. Make sure rugs or mats are securely fixed and that edges do not present a trip hazard
- h. Avoid cables crossing pedestrian routes and use cable guards to cover where required
- i. Implement a defect reporting system to ensure the hazards are identified and addressed as soon as possible

ii. Ergonomics

Employees will be provided with the appropriate tools, equipment, parts and materials. Controlling and identification of ergonomic risk factors and reduction of hazards will be provided through the following means when and where necessary:

(a) Engineering controls; which are the most reliable means to controlling or preventing injury. This is achieved by focusing on the physical modifications of jobs, workstations, tools, equipment, or processes.

(b) Administrative controls; which means controlling or preventing injury by implementing administrative changes such as job rotation, job enlargement, rest/recovery breaks, work pace adjustment, redesign of methods and/or worker education.

c) Work practice controls; which means controlling or preventing injury through proper work practices. These include proper work techniques, posture and conditioning.

- PPE; which is personal protective equipment and can control or prevent injury.

iii. Working at Height

Working from a level difference and the possibility of injury as a result of falling are considered for the employees as “working at height”. Travelling, conducting a stationary job, or any time under risk of exposure to a fall from a surface that is not protected by approved handrails, guardrails or some other/similar types of approved arrest or restraint devices are included in the scope of working at height.

The hazard distance for falling is measured from the employee’s feet to the walking/working ground. The prevention of fall should be planned during the design stage as possible, and continuously controlled.

Hazards resulting from fall risks can be eliminated by several measures. These are:

a) Elimination of the works at height: performing the work on the ground as much as possible or maximizing the pre-assembly works on the ground for the structural components

b) Design safety and engineering controls: reviewing the project drawings, interfacing with the project owners and material suppliers to design safety features into structure, material or equipment to be used, or addition of the safety features such as attachment points for guardrail system, etc. to the project design.

c) Fall prevention and protection systems: fall prevention and protection systems differ in terms of the work type. Guardrail systems, fall restraints, fall arrest systems, barricades, etc. are some of them. The most effective one should be selected depending on the work to be performed.

d) Elevated equipment: this equipment are the ones which the employees are required to be tied-off 100% of the time when conducting the job such as crane suspended works or scissors lifts.

e) Housekeeping: housekeeping is also another important factors which may cause falling. The whole area should be enforced daily clean-up and free of debris, materials, unnecessary equipment and provided a sufficient number of trash containers for cleanup.

iv. **Struck by Objects**

Struck-by-object injuries involve a worker being hit by any piece of equipment or object that's falling, swinging, or rolling, including a moving vehicle. Take the following measures to make your workplace safe and reduce the risk of struck-by-object incidents;

- a) Provide safety eyewear
- b) Enforce hardhats at work sites
- c) Ensure workers are highly visible
- d) Lower blades and lock moving parts of machines when not in use
- e) Inspect tools and equipment
- f) Limit access to work areas

v. **Working with Construction Machinery**

Measures to be taken when working with or around the construction machinery are listed as:

- a) Construction machinery will be accepted to the site according to site entry rules.
- b) Daily and periodic maintenance of construction machinery will be ensured and shared with OHS team and the operator will perform a visual check before each use.
- c) Obeying general rules for operators, which are summarized below, will be ensured
- d) Operators will have a valid operator license
- e) Operators will have induction training
- f) Operator will visually control his/her construction machinery from top and bottom
- g) Operator will check any leakages such as oil, engine fluids, accumulator etc
- h) Operator will check engine, gearbox, hydraulic oil and radiator fluid levels
- i) Refueling of construction machinery will be performed in designated areas or outside of the Project area.
- j) Construction machinery will not reverse without a flagman

vi. **Over-exertion**

Overexertion can occur when you push yourself too hard physically. It can cause inflammation, leading to pain and discomfort. If it is not addressed, overexertion can lead to tearing or overstretching in muscles, tendons, and ligaments. There are many things you can do both at home, at play, and at work to prevent overexertion.

- a) **Warm up.** Before doing physical activity, stretch and move your body to warm up your muscles.
- b) **Take small breaks.** When doing repetitive motion or a lot of lifting, take a lot of small breaks. Even a break of 20 seconds to stretch the muscles you are using can be helpful.

- c) **Lift properly.** When lifting anything, it is important to have proper posture and form. Follow these steps to avoid overexertion:
- i. Stand close to what you are lifting.
 - ii. Place your feet wide apart to give yourself a solid base.
 - iii. Bend your knees instead of your hips and back.
 - iv. Tighten your core muscles to help you lift the object.
 - v. Use your leg muscles to lift, not your back.
 - vi. Don't twist your body while holding something heavy. Turn your whole body, including your feet. Your nose and toes should always be pointing in the same direction while lifting.
 - vii. When putting down a heavy object, bend with your knees so you squat to put it down instead of hinging at the hips.
- d) **Raise work tables to waist height.** If your work table is too low, you may put yourself at risk of over-exertion from bending over too much. Raise your work table to the proper height to avoid this.
- e) **Maintain your tools or get new ones.** Use tools in good condition to avoid overexerting yourself.
- f) **Use available equipment to move heavy objects.** If available, use tools meant for lifting assistance. This could be anything from a lifting belt that gives you more core support, to machinery that lifts items for you and carries them where they need to go.
- g) **Avoid carrying things that are too heavy.** Everyone's limit for how much they can carry is different. If you do not regularly carry heavy objects or work out, what you can safely carry may be less than someone else. Listen to your body, and ask for help when needed.

CHAPTER NINE

ENVIRONMENTAL AND SOCIAL MONITORING PLAN

9.1 Introduction

The monitoring plan is vital because it is used to check if the mitigation measures prescribed in the management plan are being implemented. It provides parameters to be monitored, indicators to be used for monitoring, means of verification that mitigation/enhancement measures were implemented, and frequency of monitoring and assigns responsibility for monitoring.

9.2 Environmental and Social Monitoring Plan

To ensure that the environmental and social management plan for the proposed project is implemented, an environmental and social monitoring plan has been prepared. Stakeholders that have been assigned responsibility in the monitoring plan need to budget for fuel and subsistence allowances for their officers for them to carry out the inspection. This urges the developer to implement the management plans so that the implementation of their project does not contribute to environmental degradation in the project area or impinge on the welfare of employees, students and local communities.

This plan details different forms of impacts at different levels of the project. These impacts are described at pre-construction and construction phase, operations phase and decommissioning phase. In these phases positive impacts and negative ones have been documented by indicating the type of impact, the mitigation measure of the identified impact, monitoring, verification and frequency of monitoring. Also, responsible authority in dealing with the impact and the costs involved. The details of the impacts are in table 31.

Table 26:Environmental and Social Monitoring Plan

S N	Identified impact	Recommended Enhancement/Mitigation Measure	Monitoring Indicator	Means of Verification	Frequency of monitoring	Responsible Authority	Costs (TZS)
Pre-Construction And Construction Phase							
Positive Impacts							
1	Creation of employment	<ul style="list-style-type: none"> Employing unskilled labours as much as possible from the project area Giving women equal employment opportunities as men. 	Number of local people employed Number of women employed	Records	quarterly	Proponent/ Project manager	5,000,000
2	Increase in the market for local construction materials	<ul style="list-style-type: none"> Designating a place for the local market close to the site Purchasing materials from as many local suppliers. Piling trucks to transport construction materials like sand, quarry and cement to the project site 	No. of local people supplying materials Number of local transporters ferrying material	interviews	quarterly	Contractor/ Project manager	5,000,000

3	Increase in business activities within the project area	<ul style="list-style-type: none"> Designating an area as a market within the project site 	Number of local people selling goods at the project site	interviews	Contractor	quarterly	1,000,000
Negative Impacts							
1	Air pollution	<ul style="list-style-type: none"> Applying water regularly to civil works and earth roads to suppress dust; Controlling the speed of construction vehicles to reduce the generation of dust. 	No. of times water is applied	PM10 < 0.1 in $\mu\text{g}/\text{Nm}^3$ SO ₂ < 0.5mg/Nm ³ for 10 mins CO < 150 g/Nm ³ for less than 15 mins. NO _x < 150 g/Nm ³ for 24 hours Pb < 1.5 g/Nm ³ for 24 hours Conforming to EC directive 89/336/EEC and ISO 12103-1)	Contractor/	quarterly	5,000,000
2	Noise	<ul style="list-style-type: none"> Fitting construction vehicles with silencers to reduce the noise 	No. of vehicles fitted with silencers Machines in good	In compliance with WB and TBS standards: Daytime noise levels < 60	quarterly	Contractor	4,750,000

		<ul style="list-style-type: none"> • Servicing machinery so that they can be in good condition at all times • Providing ear protection materials for workers in noisy areas 	<p>condition</p> <p>No. of workers using PPEs inspections</p>	<p>dB Night-time noise levels < 50 dB</p>			
3	Soil erosion	<ul style="list-style-type: none"> • Carrying out construction works out from May – September • Creating drainage channels to direct storm water movement • Creating stone pitching where soils have been excavated • Clearing only those places where buildings will be constructed 	<p>Construction period</p> <p>Availability of drainage channels</p> <p>Presence of stone pitching</p>	Site inspection.	Once on commencement	Contractor	3,500,000
4	Soil	<ul style="list-style-type: none"> • Construction vehicles 	No. of vehicles	Site inspection with	quarterly	Contractor/	5,000,000

	Contamination	<p>should be in good condition to avoid fuel leaks</p> <ul style="list-style-type: none"> • Servicing areas for vehicles should have impermeable surfaces 	<p>serviced</p> <p>Availability of impermeable surface</p>	<p>photo documentation</p> <p>Zero hazardous wastes stored on site</p>		Project Manager	
5	Increase in accidents/incidences	<ul style="list-style-type: none"> • Introducing humps on the road to help reduce the speed of the vehicles • Erecting warning signs showing that heavy machinery and construction vehicles are using that road for people to be alert • Following health and safety regulations • Providing workers with protective clothing • Training workers in the proper use and handling of heavy 	<p>No. of humps on the local road</p> <p>No. of warning signs erected</p> <p>No. of people using PPEs</p> <p>No. of people trained</p> <p>Presence of a first aid kit</p>	Inspections	Once on commencement	Contractor/Project Manager	9,000,000

		<p>equipment and machinery</p> <ul style="list-style-type: none"> • Maintaining a first aid kit at the project site 					
6	Increase in HIV/AIDS and other diseases	<ul style="list-style-type: none"> • Sensitizing local people and workers at the site on the dangers of unacceptable unions • Distribute condoms to both men and women • Encouraging girls to go to school to avoid early marriages • Providing women with loans for small-scale businesses so that they can be self-sufficient • Develop an HIV and AIDS workplace policy 	<p>No. of sensitization meetings</p> <p>No school dropouts</p> <p>No. of women carrying out businesses</p> <p>HIV policy in place</p> <p>Records</p>	Records	quarterly	Contractor/ Local leaders/ District AIDS Coordinator	7,000,000

7	Increase in criminal Acts.	<ul style="list-style-type: none"> • Employ people from the surrounding areas to reduce the number of migrant workers • Sensitize the community on the ownership of the project • Introduce community policing in conjunction with Kiseke Police station • Request for a police unit within the project area 	<p>No criminal incidences</p> <p>No. of local people employed</p> <p>Community policing in place</p> <p>Police unit in place</p>	Police records Records	Quarterly Once on commencement	Developer	5,000,000
8	Poor solid waste management	<ul style="list-style-type: none"> • Provision of dust bins or rubbish pits for the wastes produced • Segregation of waste by providing different bins for each type of waste • Identification of a dumping site within 	<p>Dust bins for each type of waste in place</p> <p>Dumping site identified</p> <p>No. of times rubbish is removed</p>	Inspections	Quarterly Once on commencement	Contractor	5,000,000

		<p>the project area for various types of wastes</p> <ul style="list-style-type: none"> Disposing of wastes at the designated places regularly 					
9	Poor sanitation	<ul style="list-style-type: none"> Provision of pit latrines for workers on the construction site Provision of potable water within the site Sensitization of workers on the importance of good hygiene practices 	<p>Pit latrines in place</p> <p>Potable water in place</p> <p>No. of sensitization meetings</p>	Inspections records	<p>Quarterly</p> <p>Once during commencement</p>	Contractor Project Manager	5,000,000
10	Degradation of land and river banks	<ul style="list-style-type: none"> Buying sand and quarry from registered local artisans Carrying out sensitization of local artisans on good mining practices 	<p>No. of local registered local artisans supplying materials</p> <p>No. of meetings</p> <p>No official mining sites</p> <p>No. of afforestation</p>	Records	quarterly	Authorized miners	8,000,000

		<ul style="list-style-type: none"> • Designating places for sand and quarry mining • Assisting communities with afforestation programs for river banks • Introducing alternative income-generating activities in the area. 	programs				
11	Risks of child Labour on the construction site	<ul style="list-style-type: none"> • Recruitment of workers through the district labour office • Erect sign board “NO-CHILD LABOUR” on site 	Records of recruitment Presence of signs of “No Child Labour	Signposts Records	Monthly	Ministry of Labour	2,500,000
12	Use of lead-based paint products	<ul style="list-style-type: none"> • The Contractor shall ensure that paints with toxic ingredients or solvents or lead-based paints will not be used 	Evidence of using - non-lead-based paint	Purchase records/receipts	Quarterly	Contractor/ Proponent	1,000,000

13	Risks of inappropriate contact between workers and students	<ul style="list-style-type: none"> Periodic sensitization of workers and students on zero tolerance against the malpractices 	Number of meetings	Minutes	Monthly	Dean of Students	1,000,000
14	Water Pollution	<ul style="list-style-type: none"> Provision of secondary containment on-site to collect diffuse and accidental spills of fuels and other hydrocarbons. Storage and handling of fuels and construction fluids are to be managed by a qualified person and stored well away from any natural water courses. Well-designed storm water collection system for the facility as a whole and 	<p>The pH of sewage and effluent</p> <p>The concentration of Pb in wastewater</p> <p>Sulphate (SO₄) concentration</p> <p>Type and amount of waste generated, sorted, recycled/reused, treated and disposed.</p> <p>Number, location and status of waste disposal sites</p> <p>Number and status of toilet facilities</p> <p>Wastewater quality parameters</p> <p>Quality of secondary</p>	<p>Physical Components</p> <ul style="list-style-type: none"> Below 60mg/L of COD using TZA 861(Part 4): 2006 Dichromate Digestion Method Below 100mg/L TSS using TZA 861(Part 1):2006 Gravimetric Method - 	Quarterly	Contractor	15,000,000

		<p>rainwater harvesting system on all buildings.</p> <ul style="list-style-type: none"> • Ensure proper waste management on-site, at all times, including separation and sorting of solid waste as well as separate protocols for the management of hazardous waste under the responsibility of qualified personnel or institutions. • Ensure regular maintenance and cleaning of sanitation facilities on-site. • The proponent shall ensure that the wastewater system capacity is appropriate for the 	<p>containment structures</p> <p>Evidence of labeling hazardous waste</p> <p>Evidence of pollution spill contingency plan</p>	<p>Below 0.2mg/L</p> <p>Dichloromethane using GCECF (ISO10301:1997) - Determination of Highly volatile halogenated hydrocarbons using Gas Chromatography method</p> <p>Inorganic Components</p> <ul style="list-style-type: none"> • Below 0.1mg/L Pb using 			
--	--	---	---	--	--	--	--

		<p>number of users on-site at any given period and make modifications to the capacity of the system as necessary to safely handle the volume of wastewater generated. This will assure the efficiency of the system and minimize or eliminate incidences of untreated sewer spills to the environment</p> <ul style="list-style-type: none"> • Install an independent storm water drainage system to the site area to minimize flooding and erosion potential as well as ensure no contaminants enter the storm water before discharging to 		<p>TZS 861(Part 7):2006 Flame Atomic Absorption Spectrometry -Below 500mg/L SO4 using APHA Standard Methods: 4110 B. Ion Chromatography with chemical suppression of effluent conductivity Organic Components</p>			
--	--	--	--	---	--	--	--

		<p>the waterways.</p> <ul style="list-style-type: none"> • Install rainwater harvesting systems on all buildings. This will increase the water efficiency of the centre by providing a sustainable source of non-potable water for use in gardens and washing cars, etc. Additionally, this will reduce the volume of water infiltrating the ground (soil and rocks) and reduce the possibility of flooding. 		<ul style="list-style-type: none"> • Below 0.5mg/l of Alkyl benzene sulfonate (ABS) using ISO 7875 1:1996 (Part 1) • Below 10mg/L of Fatty matter and hydrocarbons using APHA Standard methods 5520 			
Operation Phase							
Positive Impacts							
1	Creation of employment	<ul style="list-style-type: none"> • Employing more people from the 	No. of people local people employed	Records	Annually	Proponent	N/A

		<p>communities surrounding the project area and other areas within the country for both unskilled and skilled jobs</p> <ul style="list-style-type: none"> • Giving equal employment opportunities for both men and women 	No. of women employed				
2	Improved access to social services by the local community	<ul style="list-style-type: none"> • Providing extra social services that can be accessed by the communities. 	Presence of social services	Inspection	Once on	Local communities	N/A
3	Increase in economic activities	<ul style="list-style-type: none"> • Sourcing funds for operation and maintenance cost • Outsourcing non-core functions • Traders from the project area are to be allowed to supply foodstuffs for student 	No. of traders supplying goods	Records	Quarterly	Proponent	N/A

		meals.					
4	Increase in revenue by the government through taxes	<ul style="list-style-type: none"> Remitting taxes to TRA from wages and service contracts in time 	Remittances to TRA	Records	Quarterly	Proponent	N/A
Negative Impacts							
1	Poor waste management	<ul style="list-style-type: none"> Provision of dust bins or rubbish pits for the wastes produced Segregation of waste by providing different bins for each type of waste Maintaining the dumping site that will be identified during construction Collecting and disposing of wastes at the designated places regularly Used chemicals should be disposed of in consultation 	<p>No. of dust bins</p> <p>Presence of a dumping site</p> <p>Frequency of waste disposal</p> <p>Presence of hazardous waste disposal site</p>	<p>Inspections</p> <p>Records</p> <p>Inspections</p>	<p>Quarterly</p> <p>Once during operation</p> <p>Quarterly</p>	<p>Hostel management/ students/ staffs</p>	10,000,000

2	Poor Sanitation	<ul style="list-style-type: none"> • Provision of adequate toilets for students and members of staff • Construction of double-chambered septic tanks for disposal of liquid wastes • Regular Inspection and maintenance of the septic tank network 	<p>No of toilets Presence of a septic tank in good condition</p>	Inspections	<p>Once during operation Quarterly</p>	Hostel management/ students/ staffs	10,000,000
3	Increase in HIV and AIDS and other sexually transmitted diseases	<ul style="list-style-type: none"> • Carry out sensitization meetings for students, teachers support staff and local communities from time to time. • Develop an HIV and AIDS workplace policy; • Distribution of condoms and 	<p>No of meetings Policy in place No. of condoms distributed</p>	Records	Quarterly	Local Communities /Management	3,000,000

		information materials on HIV and AIDS to workers					
4	Increase in criminal acts	<ul style="list-style-type: none"> • Sensitize the communities and students on how they can live in harmony • Sensitizing the community members on the ownership of the college • Introduce community policing in conjunction with Kiseke Police station • Request for a police unit within the project area. 	No. of criminal incidences Community policing in place Police unit in place	Police Records Inspections	Quarterly Once during operation	Kiseke Police Station	2,000,000
5	Surface Drainage	<ul style="list-style-type: none"> • Rainwater harvesting gutters and storage tanks should be installed to reduce the amount of rainfall reaching the surface. 	Presence of rain-harvesting gutters and storage tank	Inspection	Bi-annual	Hostel Management	7,500,000

		<ul style="list-style-type: none"> • Semi-permeable materials should be used for the construction of pavements. • After completion of construction, the proponent should embark on comprehensive landscaping to increase the soft scape cover on the plot. 					
6	Fire outbreaks	<ul style="list-style-type: none"> • Hire a competent and properly authorized electrical contractor to do the wiring and other electrical works. • Install a fire alarm system for the entire project • Install smoke 	Presence of fire exit signs Presence of firefighting equipment and records of servicing Presence of fire hazard signs	Inspection	Bi-annual	Hostel Management	10,000,000

		<p>detectors in kitchens.</p> <ul style="list-style-type: none"> • Installation of firefighting equipment following Country Fire requirements. • Conduct regular firefighting drills within the site. • Develop and adopt a (fire) emergency response plan for the project during and occupation stage. • Ensure that all firefighting equipment is regularly maintained and serviced. • Provide fire hazard signs such as “No Smoking sign”, Direction to exit in case of any fire 					
--	--	--	--	--	--	--	--

		incidents and emergency numbers.					
8	Increase in Energy Demand	<ul style="list-style-type: none"> Put off all lights immediately when not in use or are not needed. Use energy-conserving electric lamps for general lighting Make use of alternative sources of energy such as solar power. Solar panels proposed in the project should be fully utilized and timely repaired in case of damage. 	Presence of energy-conserving electric lamps Availability and condition of solar panels	Inspection	Quarterly	Energy Department	10,000,000
9	Increase in water demand	<ul style="list-style-type: none"> Install water-conserving taps that turnoff automatically when water is not in 	Presence of water-conserving taps Monthly bills	Inspection	Quarterly	Water department	10,000,000

		<p>use.</p> <ul style="list-style-type: none"> • Encourage water reuse/recycling during occupation phases. • Roof catchments of building blocks should be provided with rainwater harvesting systems (gutters, down pipes and water storage facilities) to enhance the collection and storage of the resulting run-off. Such water can be used in watering flower gardens, general cleaning etc. • Provide notices and information signs to sensitize on means and needs to conserve 					
--	--	---	--	--	--	--	--

		water resources i.e. Keep/Leave the Tap Closed etc. This will awaken the civic consciousness of the workers and residents concerning water usage and management						
Decommissioning Phase								
Positive Impacts								
1	Reduced noise levels	<ul style="list-style-type: none"> Removing all working and damaged construction machinery and equipment 	All equipment removed	Inspections	Once upon decommission	Contractor Project Manager	N/A	
Negative Impacts								
1	Loss of employment	<ul style="list-style-type: none"> Informing workers of project duration when employing them Educating the labour force on the need to save part of their wages 	Severance benefits	Records	Once	Contractor Project Manager	N/A	

		<ul style="list-style-type: none"> • Paying severance benefits to all laid-off workers according to the provisions of the labour laws 					
2	Poor waste management	<ul style="list-style-type: none"> • Disposing of construction wastes at the dumping sites that will be identified during the construction phase. • Scrap metals will have to be sold or disposed of at a dumping site that will be designated specifically for such wastes. • Trees and grass should be planted in bare areas of the project site as a way of restoring the area. 	<p>The site clear of construction wastes and scrap metal</p> <p>Well landscaped premise</p>	Inspections	Once	Contractor Project Manager	N/A
3	Loss of business	<ul style="list-style-type: none"> • Informing local 	Materials paid for	Records	Once	Contractor	N/A

	opportunities	<p>traders of the project duration in time</p> <ul style="list-style-type: none"> • Paying for all materials that were obtained on loan on time • Outsourcing some services for non-core activities for the college 				Project Manager	
4	Noise pollution	<ul style="list-style-type: none"> • Demolition activities are to be restricted to daytime i.e. 8am to 5pm • Use of Suppressors on noisy equipment or use of noise shields for instance corrugated iron sheet structures • Workers in the vicinity or involved in high-level noise are to wear respective 	TBS standards	<p>Inspection Observation Routine Maintenance</p>	Daily	<p>Proponent Contractor Workers</p>	

		<p>safety & protective gear.</p> <ul style="list-style-type: none"> Comply with TBS (Noise and excessive vibration pollution control) Regulations 200 					
5	Health and safety of workers	<ul style="list-style-type: none"> All workers are to wear PPEs e.g. helmets. All workers will be sensitized before demolition begins, on how to control accidents related to construction. Accordingly, adherence to safety procedures will be enforced. All workers will be adequately insured against accidents. 	<p>No. of warning signs erected</p> <p>No. of people using PPEs</p> <p>No. of people\ trained Presence of a first aid kit</p>	<p>Inspection</p> <p>Observation</p> <p>Routine maintenance</p>	Daily	Proponent Contractor Workers	10,000,000

CHAPTER TEN

COST BENEFIT ANALYSIS

10.1 Introduction

The cost-benefit analysis presents a brief comparison of the environmental and social costs of implementing the proposed project versus the benefits accrued from the project when implementation of the project has been completed. It is a clear fact that it is not possible to account for all the impacts accrued from the implementation of the project. This is because some of the impacts are direct while others are indirect; some are short-term while others are long-term, some of the impacts are site-specific while others cross the boundaries of the project area to affect a much larger population, though it may not be necessarily a significant impact. Similarly, the valuation of these impacts is more or less dictated by the social group biases tied to the environment to which the project has been subjected. Therefore, the methodology used in this cost-benefit analysis will base on comparing the following:

“The total amount of cash that would be spent by the proponent into the local environment” termed as “BENEFIT” **Versus** “The opportunity cost of the items the people and the society will miss when the project is implemented” plus “environmental costs of mitigating any significant impact caused by the project’s activities after it is fully implemented to the closure phase”. Termed as “COST”. Since this project is expected to exist for 100 years, with 3 years of development costs and one year of decommissioning, the aspect of “Time Value for Money” will be ignored and all the costs will be considered as “Constant Dollar” with inflation and cost escalation assumed to be zero.

10.2. Benefits Related to the Project

Benefits from the proposed project can be classified as direct benefits and indirect benefits to the Institution, neighbour and the government. However, the primary benefits of this project are further classified as direct benefits and indirect benefits. Construction activities may generate negative benefits though; they are usually minimal compared to the positive benefits. Some of those impacts are non-quantifiable and thus cannot be used in the benefit-cost analysis estimations. Generally, the benefits of the project are experienced in all phases from mobilization, construction, and operation to decommissioning phase. To mention a few, employment opportunities and public benefits will occur during both the construction and the operation phases. Several benefits are associated with the proposed development both at the local and national level in terms of revenue generation and the multiplier effects associated with linkages with local and national economies.

Direct benefits: the proposed project will create many job opportunities, a good aesthetic view, good environments for students in their studies, entrepreneurial opportunities in the surrounding community as well as increase the number of skilled labourers due to an increase in the enrolment and presence of conducive environment for self-studies. Most of the non-quantifiable impacts are direct benefits to the project receptors.

Indirect Benefits: Indirect benefits from a proposed project mainly include an increase in government revenue through different sectors like; TANESCO, TRA etc. cultural interactions, infrastructural development, and economic growth. But since the construction project requires inputs from other sectors to produce this output, and the other sectors subsequently require inputs themselves, there will be multiple rounds of interaction among the sectors resulting in additional output from each sector of the economy.

10.2.1 Benefits to IFM

The proposed project has positive impacts on IFM since its benefit is a lifetime process throughout the project life span (99 years). The completion of these projects will be one of the pooling factors for an increased number of student's enrolment thus in monetary cost its value has the potential to increase annually. IFM's financial capacity and sustainability are going to improve by far. Further, the improved financial standing is not only going to promote enrolment but also good governance and efficient running of the project. The project will also have several intangible benefits to IFM which include improving the Institution's image.

10.2.2 Benefit to the Neighbourhood

The proposed project is meant to increase the capacity of infrastructure. This improvement may lead to an increase in staff requirements that is technical, administrators and academicians. During and after the construction phase the project is going to provide additional employment opportunities for people surrounding the IFM hostel related to operation and maintenance. However, non-skilled labourers will benefit from the daily wages. Business opportunities will be supporting government initiatives to create employment opportunities for Tanzanians as advocated by the current Government. Notwithstanding that now salaries are yet to be specified, it is envisaged that from employment, workers will get incomes, which will improve the quality of their lives and perhaps improve their lifestyles. However, employment opportunities and income from salaries provided will extend beyond the workers and benefits many other people including dependants.

Moreover, employment opportunities and the benefits therein will depend on whether suitably qualified local personnel that can take up positions are available. Capacity building is a prerequisite for these benefits to be realized. Alongside the capacity building, there shall be a need for putting in place deliberate policies that would compel developers in the real estate economic sector to employ local labour with the requisite skills and experience. In addition, the project will also have the following economic and social benefits:

- Utilization of locally available resources;
- Revenue to the Government will increase through payment of the various taxes (indirect and direct).
- Boosting the infrastructure and economy of the country and Ilemela District in particular ward in which the project is located.

10.2.3 Benefit to the Government

The project will benefit the government in different aspects. These include budget saving due to the relative decrease in IFM's financial dependence on the government. It is anticipated that during the operation phase, the project will improve IFM's financial capacity and sustainability resulting from project earnings. In that case, the government will have the opportunity to use the share of the budget which was supposed to go to IFM for other government development plans. Further, the ability of IFM in contributing towards the realization of National Policies such as Education Reforms through the expansion of enrolment of students into various degree programmes is going to increase. The increase in the number of enrolments means an increase in the financial capacity of the institution.

However, the government will benefit from the increased number of experts in priority disciplines with different disciplines that will be graduating from IFM. This will create the potential for the government to use internal resources (home country experts) in different future projects rather than contracting foreign experts.

10.3 Costs Related to the Project

The estimated costs for implementing enhancement measures, impact management as well as monitoring processes as outlined in Chapter 8. The estimated costs for mitigation do not include the environmental costs, which could not be accurately calculated. Since some of the impacts will only be realized during the construction phase, the costs for these will also be short-term, especially if mitigation measures are fully implemented. The construction costs for all the projects are detailed in Bills of Quantities.

10.3.1 Costs to the Community

The resulting negative environmental and social impacts such as noise, impairment of air quality, and Safety and health risks due to project activities will be absorbed by the surrounding communities. However, the introduction of mitigation measures will reduce the anticipated impacts. Apart from the above, no community activities will be disrupted. IFM hostel management is committed to mitigating the negative social and environmental impacts.

10.3.2 Costs to Government

The Government of the United Republic of Tanzania through the Ministry of Education, Science and Technology (MoEST) has secured funds from World Bank to promote higher education as a catalytic force in the new Tanzanian economy. The project is designed to revitalize the key areas for innovation, economic development, and labour market relevance. Also, as already mentioned the Government will directly and indirectly benefit from taxes generated during both phases of the project. Apart from tax generation, the investment will also enhance economic growth, enhancement of industrialization and businesses.

10.3.3 Environmental Cost

Environmental cost-benefit analysis is assessed in terms of the negative and positive impacts. Furthermore, the analysis is considering whether the impacts can be mitigated and whether the costs of mitigating the impacts are reasonable.

10.4 Project Cost-Benefit Analysis

As has been mentioned in Chapters 6 – 8, the benefits of the project, in terms of financial and social benefits are substantial. The environmental impacts are reasonably mitigatable and the financial resources needed to mitigate negative impacts, when compared to the required investment are relatively small. However, the -benefit-cost ratio concluded the project has more benefits compared to the total cost of the project, this implies that the project is viable and the proponent is encouraged to develop it.

CHAPTER ELEVEN

DECOMMISSIONING AND CLOSURE

11.1 Introduction

This is a preliminary decommissioning plan. This plan establishes feasible decommissioning schemes that can be accomplished without undue risk to the health and safety of the public and decommissioning personnel, without adverse effects on the environment, and within established guides and limits of the appropriate regulatory agencies. This preliminary plan will serve to ensure that the decommissioning and ultimate dispositions of the project are considered during the initial design and construction of the building. The preliminary plan will remain a “living document,” and revisions will be made throughout the operating life of the building. It must be reviewed periodically and revised to reflect any changes in the construction or operation that might affect decommissioning. Prior to the initiation of actual decommissioning activities for the project, a detailed final disposition plan will be prepared. The final plan should be based on the preliminary plan and revisions, and will define specific work activities including safety evaluations of planned decommissioning methods, new technology, and the project status that will result from the decommissioning program. In addition, this plan must contain sufficient information to obtain any approvals needed from the appropriate regulatory agencies to proceed with decommissioning activities.

11.2 Aim of the Preliminary Plan

The preliminary plan serves to establish decommissioning as an important consideration from the inception of the project, during design and throughout the operation of the proposed project. The plan has the following purposes:

- a) The primary purpose of the preliminary plan is to ensure that the proposed project designers are cognizant of decommissioning during the initial design of the project. Thus, where design choices that would enhance decommissioning are available for types of materials and system components, and location of components, these choices shall be made.
- b) Another purpose of the preliminary plan is to identify the ultimate decommissioning options and final project status. These options would be evaluated and narrowed to the decommissioning method of choice as the end of the project life is approached.
- c) The final purpose of the preliminary plan is to demonstrate to regulatory agencies that important aspects of decommissioning are considered as early as possible during the initial design of the

project. The plan serves as the starting point to demonstrate that areas such as decommissioning methods, costs, schedules, and operating impact on decommissioning will be reviewed and refined throughout the operating life of the proposed project.

11.3 Content of the Preliminary

The preliminary plan provides a general description of decommissioning methods considered feasible for the project. The description is intended to demonstrate that the methods considered are practical and that they protect the health and safety of the public and decommissioning personnel. Design personnel should study the proposed decommissioning methods and take steps to ensure that the design incorporates features that will facilitate decommissioning. Considerations include:

- a) An estimate of manpower, materials, and costs anticipated to support decommissioning.
- b) A description of the anticipated final disposition and status of the project equipment and site.
- c) A discussion demonstrating that adequate financing will be programmed for decommissioning.
- d) Identification of records that should be maintained during construction and operation which might facilitate decommissioning, including a set of “as built” drawings.

11.4 Project Decommissioning Methodology and Schedule

IFM shall fund and implement all aspects of Project decommissioning, including but not limited to, all engineering, environmental assessment, permitting, construction, and mitigation activities associated with the removal of the structures, in accordance with this plan and mitigation of Project removal impacts on site. The project proponent shall monitor environmental impacts during and after project removal to respond to defined events during the monitoring phase.

- i. Decommissioning will involve, but not limited to the specified list, because some issues or problems may surface during subsequent monitoring and audits:
 - a) The buildings will continuously be rehabilitated and renovated. While doing that there will be solid wastes which will be disposed of according to the ESMP.
 - b) Moreover, during decommissioning the buildings will be demolished accordingly to suit the new activity while doing that the rubble will be disposed off according to the directions of the Ilemela Municipal Council’s directives.
- ii. Since the lab building activity is an ongoing concern the Employees will not be terminated from their employments rather will be relocated to the other area of works.

- iii. On decommissioning the proponent will search for experts' opinions to convert the entire area into another or other uses. Could be expanding the Hostel building to serve more students than the current design capacity of the project or could be used for other communal use.
- iv. The restoration or convention plan for the entire premises will be made by proponent (with expertise from environmentalists and economists) and then forwarded to NEMC for approval. Also, proponent Management shall obtain all permits required to undertake decommissioning of the Project. This basically will include Pension Fund, Municipal Council etc.

Should there be no feasible option for conversion to other use of the building then the project structures will be required to be totally removed. Project removal will begin six months after closure and continue for twelve months. Within the six months from closure, proponent will carry inventory for all components that need to be removed and / or disposed of. This inventory will include building structures, equipment etc. to be demolished/dismantled. Also, mode of disposal will have to be finalized. This information will assist in the preparation of the final decommissioning plan, for approval by NEMC. After the approval of the decommissioning plan the metal parts will be removed first within the first three months (this is important to ensure that they are not vandalized). The second three months of the decommissioning will be used to remove concrete structures and foundations. Debris will be used as road fills for rural roads. All disturbed areas will be landscaped and re-vegetated using indigenous trees. Project decommissioning has five phases: (1) pre-removal monitoring; (2) permitting; (3) interim protective measures; (4) Project removal and associated protective actions; and (5) post-removal activities, including monitoring of environment and socio-economic activities.

The first three phases will occur prior to removal of the Project (i.e., within the first three months). The fourth phase of the project removal and associated protective actions will take place six months after closing business. The fifth phase will begin after total removal and due to nature of the project (medium scale, with relatively moderate impacts) removal and continue for at least three months.

The description that follows outlines the activities that will occur in each phase:

- i. **Pre-removal monitoring:** Pre-removal monitoring includes environmental and socio-economic status of the project site and the surrounding. This monitoring is essential to identify if there is any environmental or social liability which need to be settled before the permit for closure is given. This period will also be used to inventories all assets and facilities that need to be disposed of and to prepare a final decommissioning plan for approval by NEMC.
- ii. **Permitting:** Proponent shall obtain all permits required to undertake removal of the Project. This basically will include NEMC, Ilemela Municipal Council etc.

- iii. **Interim Protective Actions:** This will take care of any interim protective measure that needs to be implemented to protect human health and environment, if any.
- iv. **Project Removal:** As noted above, the removal of the project will be completed within three months.
- v. **Post-Removal Activities:** Post-Project removal monitoring will continue for three months. The Proponent shall remove the equipment, rubbles from demolition and ancillary structures safely and in a manner that minimizes environmental impacts e.g., dust pollution, disposal of any hazardous material, providing protective gear to decommissioning personnel etc. satisfies its obligations under the EMA Cap 191 and World Bank ESF; restores the site to a condition suitable for other use; and pays all dues (government, suppliers etc.).

CHAPTER TWELVE

SUMMARY AND CONCLUSION

12.1 Introduction

This chapter summarizes and gives a concluding remark on the suitability of the project as described in the previous chapters.

12.2. Summary

The ESIA study has been undertaken at all levels by following guidelines, laws and regulation related with environmental and social issues at a high level of care and due diligence. The assessment has also considered important stakeholders who are in one way or the other being impacted by the project. Comments, suggestions, views and opinions were documented and included herein in this report in regards to their stake in the project. The team is satisfied that all procedures and processes involved in the assessment were in line with the modus operandi of environmental and society and that all important views and comments have been used to prepare the document. The environmental and social implications of the proposed Construction of IFM – 5 storey female Hostel Building at PPF Mtaa, Kiseke Ward in Ilemela Municipal Council, Mwanza Region, Tanzania was conducted in compliance with the Environmental Management Act (2004) and was done in accordance with the EIA and Audit (amendment) Regulations, 2018 as well as World Bank Environment and Social Framework (ESF) and the project's Environmental and Social Management Framework (ESMF) respectively. Stakeholder consultations were conducted during the study to encompass central and local government authorities, communities in the project neighborhoods and interested parties. Standard methodology for impact identification was used including checklist, matrix and professional judgment.

12.3 Conclusion

Based on the findings, it is evident that development of the proposed IFM – 5 storey female hostel building will greatly contribute towards provision of modern and affordable housing to students for country socio-economic development. The Environmental and Social Impact Assessment study for the proposed project indicates that, the potential negative impacts can be easily mitigated without any major effect to the environment. However, some important resources/receptors may be affected negatively such as flora, fauna, the soil and water resources and air as well as local community. The impacts associated with these mostly vary from low to moderate significance and can be mitigated as shown in the Environmental and Social Management plan.

The project will be implemented within the area designated for Institute Hostel purposes and fully owned by IFM and thus no land compensation or resettlement for the project will be involved. Many people of the area are likely to benefit from the project compared to those who will be affected negatively. The benefit in terms of provision of competent personnel and professionals in the labor market to address socioeconomic challenges for economic growth of the country.

The study found that a number of environmental impacts have been identified and assessed; none of these are considered to be that severe after mitigations to prevent the further planning, design and construction of the proposed project in the area. Thus, the project development in the area can be considered suitable subject to the implementation of the mitigation measures as indicated in the Environmental and Social Management Plan. The construction of the proposed project will generate significant socio-economic benefits to the students, people in the project area and the country.

REFERENCES

- URT (United Republic of Tanzania). 1997. National Environmental Policy. Dar es Salaam, Tanzania.
- URT, (1997). The Land Policy of 1995. Government Printers, Dar es Salaam.
- URT, 1997: The Engineers Registration Act (& its amendment of 2007)
- URT, 2002. The National Water Policy. Dar es Salaam, Tanzania.
- URT, 2003. The National Construction Policy. Dar es Salaam, Tanzania.
- URT, 2003: The Construction Industry Policy
- URT, 2003: The Occupational Health and Safety Act No. 5 of 2003
- URT, 2004. Environmental Management Act (EMA), Cap 191, (No. 20 of 2004). Dar es Salaam, Tanzania.
- URT, 2004: The Employment and Labour Relations Act
- URT, 2005. The Environment Impact Assessment and Audit Regulations, 2005 (Gn No.349/2005).
- URT, 2007: The Fire and Rescue Force Act URT, 2008: The Contractors Registration (Amendment) Act
- URT, 2008: The National Employment Policy
- URT, 2008: The National Health Policy
- URT, 2008: The Workers Compensation Act
- URT, 2009. The Child Act
- URT, 2010. The Persons with Disability Act
- URT, 2015: The environmental Management (quality standards of control of noise and vibration pollution) Regulation
- URT, 2015: The National Energy Policy
- URT, 2018: The Environmental Management (Environmental Impact Assessment and Audit) (Amendment) Regulations.
- URT, 2019: The Land Act
- URT, 2019: The Local Government (Urban Authorities) Act
- URT, 2021: Environmental and Social Management Framework (ESMF) for Higher Education for Economic Transformation project (HEET), Mwanza.
- URT, The Urban Planning Act No. 8 of 2007
- URT. (United Republic of Tanzania). 1996. The National Land Policy. Ministry of Lands and Human Settlements Development. Dar es Salaam, Tanzania.
- URT. (United Republic of Tanzania). 2005. The Environmental Impact Assessment and Audit Regulations, 2005 (Gn No. 349/2005). United Republic of Tanzania.

URT., (2000). The National Women and Gender Development Policy of 2000. Government Printers, Dar es Salaam.

URT., (2001). The National Policy on HIV/AIDS of 2001. Government Printers, Dar es Salaam.

URT., (2005). The Environment Impact Assessment and Audit Regulations, 2005 (G.N. No. 348/2005), Dar es Salaam. Government Printers, Dar es Salaam.

URT., (2007). The Environmental Management (Air Quality Standards G. N. No. 237) Regulation,

URT., (2007). The Environmental Management (Water Quality Standards G. N. No. 238) Regulation, 2007

URT., (2008). The HIV and AIDS (Prevention and Control) Act, 2008. Government Printers, Dar es Salaam.

URT., (2015). The Environmental Management (Quality Standards for Control of Noise and Vibration Pollution) Regulations, 2015. Government Printers, Dar es Salaam.

URT, (2018). The Workmen's Compensation Act Cap 263. Government Printers, Dar es Salaam.

URT, (2020). The Environmental Management (Registration and Practicing of Environmental Experts) Regulations, 2020. Government Printers, Dar es Salaam.

World Bank (1991), Environmental Assessment sourcebook volume III: Policies, procedures and cross sectoral issues. World Bank, Washington.

World Bank, 2008: Environmental, Health and safety Guidelines

World Bank/IFC, 2008, General Environmental, Health and safety Guidelines

URT, The Water Resource Management Act, 2009 (Act No. 11/2009)

LIST OF APPENDICES

Appendix 1; Certificate of Occupancy

<p>REGISTERED ON: 31-3-2022 AT: 1-00 P Stamp Duty Registrar of Titles</p>	<p>Land Form No. 22 TANGANYIKA STAMP DUTY ACT Stamp Duty Shs: 500/- Paid Receipt No: 9220576959180230 of: 26-2-2022 Stamp Duty Officer</p>
---	--

THE UNITED REPUBLIC OF TANZANIA
THE LAND ACT, 1999
(NO. 4 OF 1999)
CERTIFICATE OF OCCUPANCY
(Under Section 29)

<p>TANGANYIKA STAMP DUTY ACT Stamp Duty Shs: 125,050/- Paid On Original Receipt: 9220576959180230 of: 26-2-2022 Stamp Duty Officer</p>	<p>Title No. 100455 L.O. No. 679341 L.D. No. IMC/L/62509</p>
--	--

The 27th day of March two thousand and Twenty Two

THIS IS TO CERTIFY that **THE INSTITUTE OF FINANCE MANAGEMENT** established under **Institute of Finance Management Act No. 3 of 1972**, of P.O. Box 3918, **Dar es Salaam**, (hereinafter called "the Occupier") are entitled to the Right of Occupancy (hereinafter called "the Right") in and over the land described in the Schedule hereto (hereinafter called "the Land") for a term of **ninety nine** years from the **first** day of **January**, two thousand **twenty two** according to the true intent and meaning of the Land Act and subject to the provisions there of and to any regulations made thereunder and to any enactment in substitution therefor or amendment thereof and to the following special conditions:-

1. The Occupier having paid rent up to the thirtieth day of June, 2022 shall thereafter pay rent of shillings **one million two hundred fifty five thousand two hundred fifty (Tshs. 1,255,250/=)** only a year in advance on the first day of July in every year of the term without any deduction PROVIDED that the rent may be revised by the Commissioner for Lands.
2. The Occupier shall:-
 - (i) Be responsible for the protection of all beacons on the land throughout the term of the Right. Missing beacons will have to be re-established at any time at the Occupier's expenses as assessed by the Director responsible for Surveys and Mapping.
 - (ii) Do everything necessary to preserve the environment and protect the soil and prevent soil erosion on the land and do all things which may be required by the authorities responsible for environment and to achieve such objective.

- (iii) Maintain on the land buildings (hereinafter called "the buildings") in permanent materials designed for use in accordance with the conditions of the Right and which conform to the building line (if any) decided by the **Ilemela Municipal Council** (hereinafter called "the authority");
 - (iv) At all times during the term of the Right have on the land buildings as approved by the Authority and maintain them in good order and repair to the satisfaction of the Commissioner for Lands (hereinafter called "the Commissioner");
 - (v) Not erect or commence to erect on the land any building except in accordance with building plans and specifications, which shall have been first approved by the Authority;
 - (vi) Approval of plans of any building by the Authority shall not imply that the construction of such a building will satisfy the occupier's obligation under the conditions of the Right and shall not imply waiver or modification of any condition in the Right.
3. **USER: The land and the buildings erected thereon shall be maintained and the same shall be used for University Hostels purposes only; Use Group 'C' Use Classes (a) as defined in the Urban Planning Act No. 8 of 2007, (Use Classes) Regulations of 2018.**
 4. The Occupier shall not assign the right within three years of the date hereof without the prior approval of Commissioner.
 5. The Occupier shall deliver to the Commissioner notification of disposition in prescribed form before or at the time the disposition is carried out together with the payment of all premia, taxes and dues prescribed in connection with that disposition.
 6. The President may revoke the right for good cause and in public interest.



INSET SHOWING DETAIL OF THE PLOT

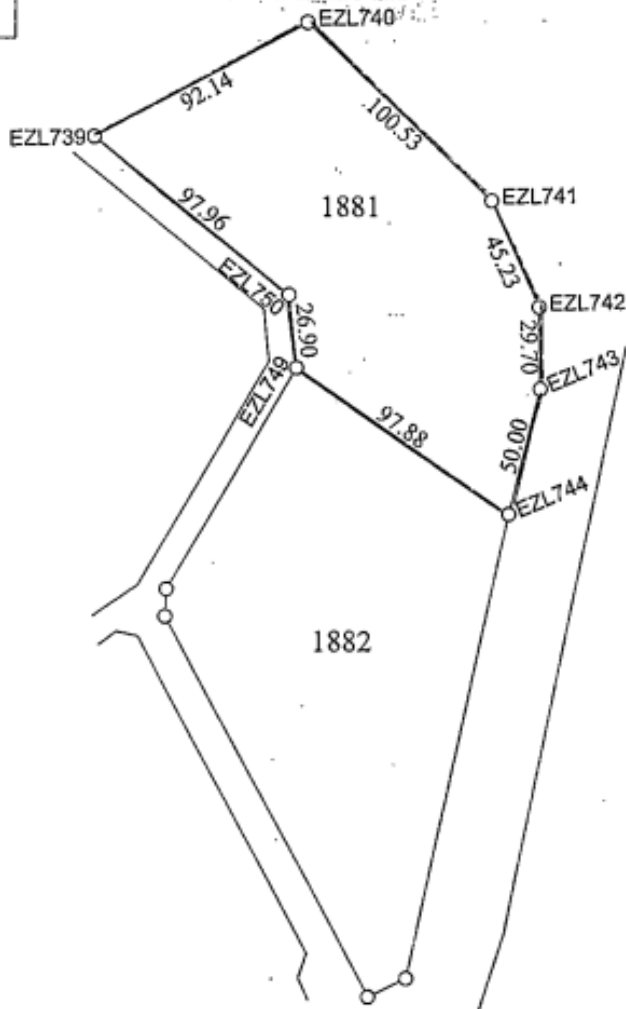
LOCATION..... KISEKE.....

BLOCK NO:..... B.....

PLOT NO:..... 1881.....

L.O.NO:..... 679341.....

AREA..... 14.943.....SQM.



This plan prepared in accordance with Registered Plan No.....127941.....is approved for the purpose of the Land Registration Ordinance.

For Director of Surveys and Mapping.

Date 03/3/2022

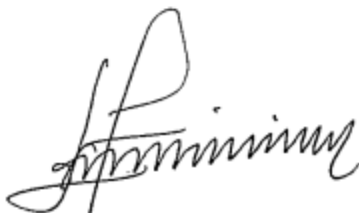
Ministry of Lands and Human Settlements
Development Dar es Salaam.

The issue of this plan implies no guarantee or admission of title by the Government.

SCHEDULE

ALL that Land known as Plot No. 1881 Block 'B' situated at Kiseke in Itemela Municipality containing fourteen thousand nine hundred forty three (14943) square metres shown for identification only edged red on the plan attached to this Certificate and defined on the registered Survey Plan numbered 127941 deposited at the Office of the Director for Survey and Mapping at Dar es Salaam.

Given under my hand and my official seal the day and year first above written.



.....
ASSISTANT COMMISSIONER FOR LANDS

We, the within named **THE INSTITUTE OF FINANCE MANAGEMENT** hereby accept the terms and conditions contained in the foregoing Certificate of Occupancy.

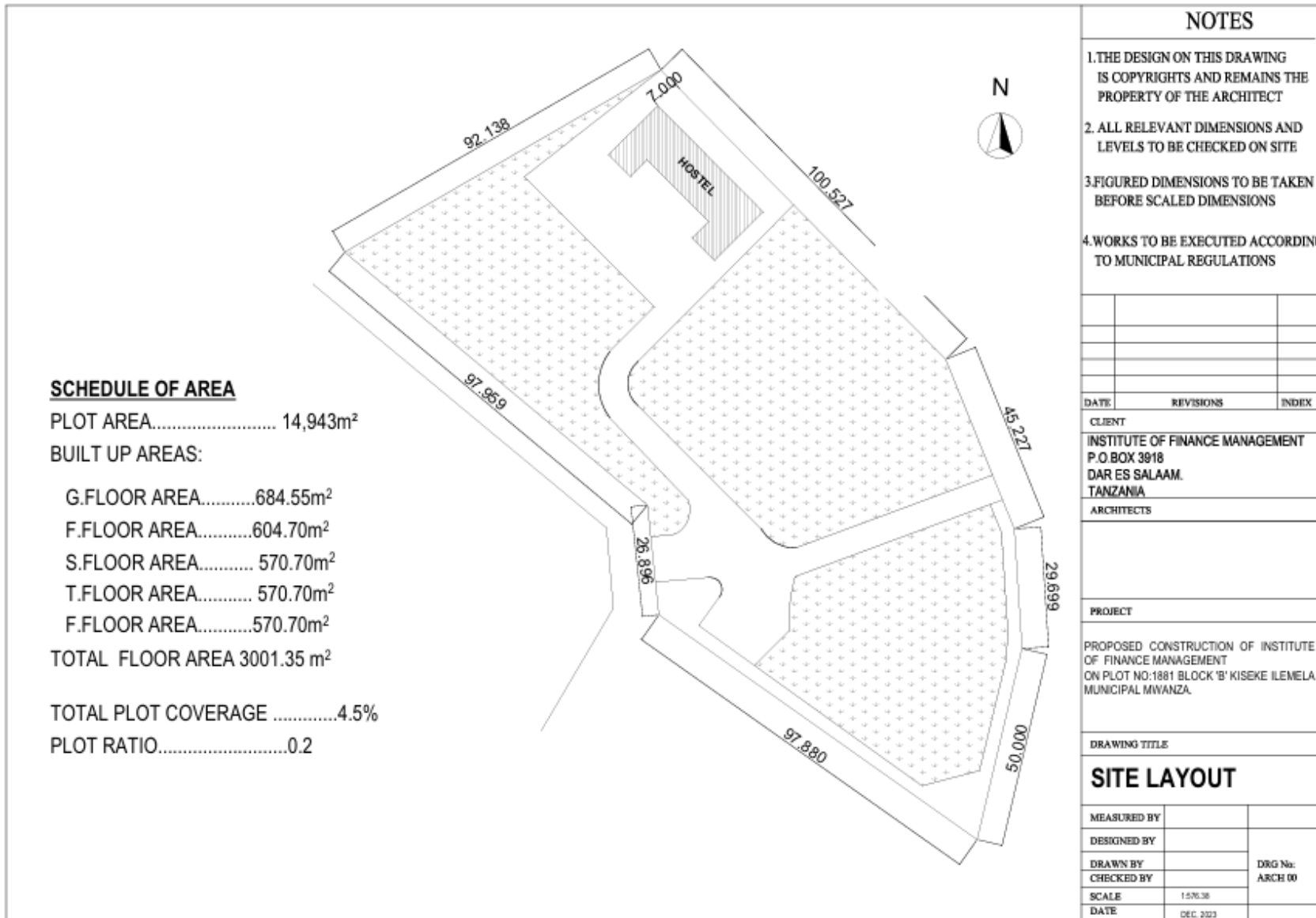
SEALED with COMMON SEAL of the said)
THE INSTITUTE OF FINANCE MANAGEMENT)
in presence of us this...^{5th}... day of... March... 2022.)

Witness)

Witness' name... IMANUELI D. MNZAVA)
Signature... [Signature])
Postal Address: P.O. BOX 3918,)
DAR ES SALAAM.)
Qualification : Ag. Rector)

Witness' name... James Evarister)
Signature... [Signature])
Postal Address: P.O. Box 3918)
Dar es Salaam)
Qualification : Ag. Legal Secretary)

Appendix 2; Site layout plan



APPENDIX II: BASELINE DATA ON AIR QUALITY, NOISE AND VIBRATIONS

Appendix IIa: Summary of Ambient Pollutant Gases Concentrations

Sampling Point	Measured Average Ambient Pollutant Gases			
	CO	NO ₂	SO ₂	H ₂ S
	mg/m ³	mg/m ³	mg/m ³	mg/m ³
AB1 (-2.48471°S, 32.93932°E)	3.00	0.00	0.01	0.00
AB2 (-2.48336°S, 32.93863°E)	2.00	0.02	0.00	0.00
AB3 (-2.48276°S, 32.93909°E)	3.00	0.10	0.00	0.00
AB4 (-2.48510°S, 32.93063°E)	2.00	0.10	0.00	0.00
WHO/IFC Guideline	30	0.2	0.5	20
TBS LIMITS	10	0.12	0.5	-

Source: Field measurement. Sampling date: 16th December 2023

Appendix IIb: Average value of Ambient Particulate Matter (Dust) Emission Level in the proposed project site

Sampling Point	PM 2.5 [µg/m ³]	PM 10[µg/m ³]
AB1 (-2.48471°S, 32.93932°E)	6	13
AB2 (-2.48336°S, 32.93863°E)	5	11
AB3 (-2.48276°S, 32.93909°E)	7	13
AB4 (-2.48510°S, 32.93063°E)	4	9
TBS STANDARD LIMIT	75	150
WHO STANDARD	25	50

Source: Field measurement. Sampling date: 16th December 2023

Appendix IIc: Average noise levels were recorded at different points in the proposed project site

Sampling Point	Noise Levels in dBA
AB1 (-2.48471°S, 32.93932°E)	33.0
AB2 (-2.48336°S, 32.93863°E)	41.7
AB3 (-2.48276°S, 32.93909°E)	44.5
AB4 (-2.48510°S, 32.93063°E)	44.7
WHO Guideline	55
TBS LIMITS	52

Source: Field measurement. Sampling date: 16th December 2023

Appendix IIId: Ground vibration levels were recorded for the proposed project site.

Sampling Point	Vibration level measured (mm/s PPV)
AB1 (-2.48471°S, 32.93932°E)	0.02
AB2 (-2.48336°S, 32.93863°E)	0.02
AB3 (-2.48276°S, 32.93909°E)	0.03
AB4 (-2.48510°S, 32.93063°E)	0.02
TBS standards limit	5
Human Detection level	0.15

Source: Field measurement. Sampling date: 16th December 2023